

Faculty of Economics and Business

The Role of Self-Criticism and Self-Compassion in Job Demands-Resources Theory

Ahmad Usman

Doctor of Philosophy
2018

The Role of Self-Criticism and Self-Compassion in Job Demands-Resources Theory

Ahmad Usman

A thesis submitted

In fulfillment of the requirements for the degree of Doctor of Philosophy

(Organizational Behavior)

Faculty of Economics and Business
UNIVERSITY MALAYSIA SARAWAK
2018

DECLARATION

I hereby certify that except where due credits and acknowledgements had been given, this work titled "The Role of Self-Criticism and Self-Compassion in Job Demands-Resources Theory" is the result of efforts made solely by myself and thus should be considered as original work. The thesis has not been accepted for any degree and is not concurrently submitted in candidature for any other degree. All parts of research presented in this thesis were documented and carried out during the tenure of my PhD program and conforms to the standards and guidelines of Faculty of Economics and Business (FEB) and Center for Graduate Studies (CGS), Universiti Malaysia Sarawak (UNIMAS).

Name	:	Ahmad Usman
Matric Number	:	13010147
Signature	:	_____
Date	:	_____

DEDICATION

To

My Parents

My Wife

&

All the supporting members of my family and friends.

ACKNOWLEDGEMENT

First and foremost, I am thankful to ALLAH (S.W.T) for His countless blessings, courage and support offered by Him throughout my life. I can say for sure that, without His guidance and unwavering faith in Him, I could not have the audacity to embark on this very difficult expedition of PhD degree. These four years of my life spent in PhD were full of stories involving thrills, firmness, joy, failures, resilience, meltdowns and getting back up and mustering up the courage to go one extra mile. All of this was possible due to the firm belief in ALLAH (S.W.T) and the teachings of Prophet Muhammad (P.B.U.H) which have guided me every step of the way especially in the times of self-doubt.

Difficult as it may be but I was lucky enough to find some of the extraordinary people during this journey who have always encouraged me to keep going in difficult times. First of all, I would like to thank my supervisor, Associate Professor Dr. Kartinah binti Ayupp, for providing me the required support, guidance and timely feedback during the entire period of this journey. I could not thank her enough for her patience, guidance, feedback, mentorship and motivation. I would also like to thank my previous supervisor Associate Professor Dr. Harry ak Entebang for his feedback on first few drafts of my thesis.

I would like to thank my parents for their unlimited support both financially and emotionally. They believed in my capabilities and always prayed for my success. It would be unjust on my part if I do not acknowledge the sacrifices and support I have received from my wife during the whole tenure of the PhD. During the dark times of self-doubt, anxiety and despair, she has always shown her support and encouraged me in every possible way. Without her support, it would not be possible for me to keep going. Moreover, I also want to acknowledge the motivation received from my siblings and especially from my cousin, Sheraz Ahmed, who

also happens to be enrolled in the same university with me during the last and most difficult year of my PhD.

I would also like to extend my thanks to Mr. Abdul Qahar who happened to be the most helping and caring person during my stay here in Malaysia. Despite facing difficulties in his own PhD, he never forgot to motivate and help me in every possible way he could and for that I will always be grateful. I would also like to thank all of my friends for their support and encouragement. It would not be possible to write all the names but it would be wrong if I do not acknowledge the unwavering support and motivation I have received from Dr. Muhammad Zeeshan Shaukat, Dr. Rizwan Qaiser Danish, Dr. Sajid Nazir, Mr. Hashim Awais Butt, Dr. Ishfaq Ahmed, Mr. Muhammad Musarrat Nawaz, Dr. Muhammad Asim and Mr. Muhammad Qasim Rafique. They have all guided me in various phases of this long journey.

I would also like to thank my best friends who were not in my profession but have always supported me emotionally. In particular, I would like to thank Hafiz Khurram Shahzad, Waheed Asghar Bhatti, Tahir Qayyum, Ali Abbas Sherazi, Mehroz Afzal Butt and especially Nabeel Ali who have always encouraged me to try and try again and never to quit. I would also like to thank Dr. Mushtaq Ahmad (Director, Clinical Governance & Organizational Standards, Punjab Healthcare Commission) who provided me with the list of registered private hospitals in Punjab, Pakistan and also facilitated me to get the access to many relevant personnel such as Dr. Zeeshan Ali (HR Manager, Ittefaq Hospital) for data collection from nurses in various private hospitals.

ABSTRACT

Job stress has shown to have a significant impact on employees, organizations and even economies especially in the fragile and instable economic environment prevailing in developing countries. Besides affecting the heath of employees, job stress hinders them from performing well in their jobs. This study has examined a comprehensive model based on Job Demands-Resources (JD-R) theory involving direct, indirect and moderating effects among the variables of present study. More specifically, the objectives of present study were to examine if job demands can predict both job stress and job performance; if the JD-R theory can be expanded to include the role of personal demands and can these factors act in similar way as job demands and predict both job stress and job performance; if job stress can predict job performance; if job stress can mediate the relationship between (job and personal) demands and job performance; and if both (job and personal) resources can moderate the relationship between job demands and job stress. In order to test these objectives, data was collected from 382 nurses working in private hospitals of Punjab, Pakistan. Results from SEM confirmed the main propositions of JD-R theory such that job demands predicted job stress (anxiety and depression), Confirmatory Factor Analysis (CFA) revealed that personal demands can act as a second order reflective construct for the first order factors of self-criticism and neuroticism, and functions the same way as job demands in predicting job stress which is the main contribution of present study. As hypothesized, job stress had a negative and significant relationship with the job performance of nurses. SEM revealed that job stress in form of anxiety and depression mediated the relationship between (job and personal) demands and job performance (task and contextual performance) which is another contribution of present study. Moreover, personal resources (self-compassion) moderated the relationship between job demands and job stress (another contribution) but no moderating

effect was found for job resources (social support) in the relationship between job demands and job stress. It can be concluded that besides the already well-integrated personal characteristics of personal resources, job demands-resources theory can be expanded to include the role of personal demands to better understand the underlying processes of the model. The variables of self-criticism and self-compassion used in present study are the new variables in the realm of JD-R theory research. Theoretical and practical implications of the study, limitations of the study and guidelines for future research are discussed.

Keywords: Job demands, personal demands, job resources, personal resources, job stress, job performance, job demands-resources theory.

Peranan Kritikan Kendiri dan Ihsan Kendiri dalam Teori Sumber Tuntutan-Kerja

ABSTRAK

Tekanan kerja telah menunjukkan kesan yang ketara kepada pekerja, organisasi dan juga kepada ekonomi terutamanya dalam suasana ekonomi yang tidak stabil dan lemah yang dialami oleh negara-negara membangun sekarang. Selain memberi kesan kepada kesihatan pekerja, tekanan kerja menghalang mereka dari melaksanakan kerja dengan baik. Kajian ini telah mengkaji model komprehensif berdasarkan teori sumber tuntutan-kerja melalui pembolehubah secara langsung, tidak langsung dan kesan moderasi antara pembolehubah tersebut. Secara khususnya, objektif kajian sekarang adalah untuk mengkaji samada tuntutan kerja boleh menjangkakan tekanan kerja dan prestasi kerja; sekiranya teori sumber tuntutan-kerja boleh diperluaskan untuk memasukkan peranan tuntutan peribadi dan bolehkah JD-R bertindak dengan cara yang sama seperti tuntutan kerja, dan jika ianya dapat meramalkan kedua-dua tekanan kerja dan prestasi kerja. Kajian ini juga telah menyelidik jika tekanan kerja dapat meramalkan prestasi kerja; jika tekanan kerja dapat menjadi pengantara antara (kerja dan peribadi) tuntutan dan prestasi kerja; dan jika kedua-dua (kerja dan peribadi) sumber boleh menyederhana hubungan antara tuntutan kerja dan tekanan kerja. Untuk menguji objektif-objektif ini, data telah dikumpulkan dari 382 jururawat yang bekerja di hospital swasta di Punjab, Pakistan. Keputusan daripada SEM mengesahkan bahawa cadangan utama dari teori JD-R seperti tuntutan kerja dapat menjangka tekanan kerja (kebimbangan dan kemurungan). Disamping itu, analisis faktor pengesahan mendedahkan bahawa tuntutan peribadi boleh bertindak sebagai perintah membina reflektif kedua untuk faktor perintah kritikan kendiri dan neurotisma pertama, dan berfungsi dengan cara yang sama seperti tuntutan kerja dalam meramalkan tekanan kerja sebagai sumbangan utama

kepada kajian sekarang. Sebagai hipotesis, tekanan kerja mempunyai hubungan yang negatif dan signifikan kepada prestasi kerja jururawat. SEM mendedahkan bahawa tekanan kerja dalam bentuk kebimbangan dan kemurungan dapat memulihkan hubungan antara tuntutan (kerja dan peribadi) dan prestasi kerja (tugas dan prestasi kontekstual) sebagai sumbangan lain bagi kajian sekarang. Tambahan pula, sumber-sumber peribadi (ihsan kendiri) yang menyederhanakan hubungan antara tuntutan kerja dan tekanan kerja (sumbangan lain) tetapi tidak menyederhanakan kesan yang telah dijumpai untuk sumber kerja (sokongan sosial) dalam hubungan antara tuntutan kerja dan tekanan kerja. Ini dapat dikonklusikan selain ciri-ciri peribadi dari sumber-sumber peribadi yang telah bersepadu, model tuntutan-sumber kerja boleh dikembangkan untuk dimasukkan sebagai peranan tuntutan peribadi untuk lebih memahami proses diantara model tersebut. Pembolehubah kritikan kendiri dan ihsan kendiri yang digunakan dalam kajian sekarang adalah satu pembolehubah yang baharu dalam lingkungan kajian teori JD-R. Implikasi secara teorikal dan praktikal dalam kajian ini. Batasan kajian dan panduan untuk kajian akan datang juga telah dibincangkan.

***Kata kunci**: Tuntutan kerja, tuntutan peribadi, sumber kerja, sumber peribadi, tekanan kerja, prestasi kerja, teori sumber tuntutan-kerja.*

TABLE OF CONTENTS

Page

DECLARATION i

DEDICATION ii

ACKNOWLEDGEMENT iii

ABSTRACT v

ABSTRAK vii

TABLE OF CONTENTS ix

LIST OF TABLES xviii

LIST OF FIGURES xx

LIST OF ABBREVIATIONS xxii

CHAPTER 1: INTRODUCTION 1

1.1 Chapter Overview 1

1.2 Background of the Study 1

1.3 Problem Statement 4

1.4 Contextual Background of the Problem 8

1.5 Research Questions 12

1.6 Research Objectives 13

1.7 Scope of the Study 14

1.8 Significance of the Study 15

1.9 Conceptual Definitions of the Variables 18

1.9.1 Job Demands 18

1.9.2 Quantitative Job Demands 18

1.9.3 Physical Job Demands 18

1.9.4 Emotional Job Demands 19
1.9.5 Personal Demands 19
1.9.6 Neuroticism 19
1.9.7 Self-criticism 19
1.9.8 Job Resources 20
1.9.9 Social Support 20
1.9.10 Personal Resources 20
1.9.11 Self-compassion 20
1.9.12 Job Stress 21
1.9.13 Anxiety 21
1.9.14 Depression 21
1.9.15 Job Performance 21
1.9.16 Task Performance 22
1.9.17 Contextual Performance 22
1.10 Organization of Thesis 22
CHAPTER 2: LITERATURE REVIEW 25
2.1 Chapter Overview 25
2.2 The Changing Nature of Work Environment 26
2.3 The Nature of Job Stress 27
2.4 Classification of Job Stress 30
2.4.1 Selye's Classification of Stress (Eustress and Distress) 30
2.4.1.1 Eustress 31
2.4.1.2 Distress 32
2.4.2 American Psychological Association's (APA) Types of Stress 32

2.4.2.1 Acute stress 33
2.4.2.2 Episodic stress 33
2.4.2.3 Chronic Stress 34
2.6 Underpinning Theories for Present Study 35
2.6.1 Conservation of Resources (COR) Theory 35
2.6.2 Job Demands-Resources (JD-R) Theory 38
2.7 Job Demands 43
2.7.1 Quantitative Job Demands 46
2.7.2 Physical Job Demands 48
2.7.3 Emotional Job Demands 50
2.8 Job Resources 52
2.8.1 Social Support 54
2.9 Personal Resources 57
2.9.1 Self-Compassion 59
2.9.1.1 Self-compassion as a Personal Resource 60
2.9.1.2 Self-compassion in Nursing 61
2.9.1.3 Measurement of self-compassion 62
2.10 Personal Demands 63
2.10.1 Neuroticism 67
2.10.1.1 Neuroticism as a Vulnerability Factor 68
2.10.2 Self-Criticism 69
2.10.2.1 Self-Criticism as a Vulnerability Factor 72
2.11 Job Stress in Nursing 73
2.11.1 Evidence of Job Stress among Nurses in Pakistan 75

2.12 Job Performance 81
2.12.1 Task Performance 84
2.12.2 Contextual Performance 85
2.13 Hypotheses Development 87
2.13.1 Relationship between Job Demands and Job Stress (anxiety and depression) 89
2.13.2 Relationships between Job Demands and Job Performance 91
2.13.2.1 Relationship between Quantitative Job Demands and Job Performance 92
2.13.2.2 Relationship between Physical Job Demands and Job Performance 92
2.13.2.3 Relationship between Emotional Job Demands and Job Performance 94
2.13.3 Relationships between Personal Demands and Job Stress 95
2.13.3.1 Relationship between Neuroticism and Job Stress (Anxiety and Depression) .. 95
2.13.3.2 Relationship between Self-Criticism and Job Stress (Anxiety and Depression) 105
2.13.4 Relationship between Personal Demands and Job Performance 113
2.13.5 Relationship between Job Stress and Job Performance 115
2.13.6 Job Stress as a Mediator in the Relationship of (Job and Personal) Demands and Job Performance 117
2.13.7 Moderating Role of Job Resources (Social Support) 120
2.13.8 Moderating Role of Personal Resources (Self-Compassion) 122
2.14 Conceptual Framework 125
2.15 Chapter Summary 126
CHAPTER 3: METHODOLOGY 128
3.1 Chapter Overview 128
3.2 Research Philosophy 128
3.3 Research Design 131

3.3.1 Research Approach and Purpose of Study 132
3.3.2 Type of Study 133
3.3.3 Researcher's Interference 133
3.3.4 Study Setting 134
3.3.5 Unit of analysis 134
3.3.6 Time Horizon 135
3.4 Population, Sample and Sampling Technique 135
3.4.1 Population of the Study 136
3.4.2 Sample Size 137
3.4.3 Sampling Technique 140
3.5 Data Collection Method 142
3.6 Operational Definitions and Measures 145
3.6.1 Job Demands 145
3.6.1.1 Quantitative Demands 145
3.6.1.2 Physical demands 146
3.6.1.3 Emotional demands 146
3.6.2 Personal Demands 147
3.6.2.1 Neuroticism 147
3.6.2.2 Self-Criticism 148
3.6.3 Job Resources 149
3.6.3.1 Social Support 149
3.6.4 Personal Resources 150
3.6.4.1 Self-Compassion 150
3.6.5 Job Stress 151

3.6.5.1 Anxiety 152
3.6.5.2 Depression 152
3.6.6 Job Performance 153
3.6.6.1 Task performance 153
3.6.6.2 Contextual Performance 154
3.7 Questionnaire Design 155
3.8 Response Rate 156
3.9 Data Analysis Tools and Techniques 158
3.9.1 Preliminary Data Analysis 158
3.9.2 Structural Equation Modeling (SEM) 159
3.9.2.1 Measurement Model: First Stage of SEM 162
3.9.2.2 Structural Model: Second Stage of SEM 167
3.9.3 Assumptions of CB-SEM 168
3.9.3.1 Large Sample Size 169
3.9.3.2 No Missing Data 169
3.9.3.3 No Outliers 170
3.9.3.4 Normal Distribution for Endogenous Variables 170
3.9.3.5 Theoretical base for Model Development 171
3.9.3.6 Model Specification 171
3.10 Chapter Summary 173
CHAPTER 4: DATA ANALYSIS AND RESULTS 174
4.1 Chapter Overview 174
4.2 Data Screening and Editing 174
4.3 Handling the Missing Values 175

4.4 Assessment of Data Normality 176
4.5 Treatment of Influential Cases/Outliers 177
4.6 Respondents' Demographic Profile 178
4.7 Descriptive Statistics 181
4.8 Correlations among Variables 182
4.9 Structural Equation Modeling (SEM) 183
4.10 Measurement Model Assessment: First Stage of SEM 185
4.10.1 Confirmatory Factor Analysis (Unidimensionality of Constructs) 186
4.10.1.1 Emotional Demands 188
4.10.1.2 Physical Demands 189
4.10.1.3 Quantitative Demands 191
4.10.1.4 Job Demands 192
4.10.1.5 Self-Criticism 195
4.10.1.6 Neuroticism 196
4.10.1.7 Personal Demands 198
4.10.1.8 Anxiety 201
4.10.1.9 Depression 202
4.10.1.10 Job Stress 203
4.10.1.11 Task Performance 205
4.10.1.12 Contextual Performance 207
4.10.1.13 Job Performance 209
4.10.1.14 Self-Compassion 211
4.10.1.15 Social Support 212
4.10.1.16 Pooled CFA (Measurement Model for the Study) 213

4.10.2 Reliability and Validity Assessment 217
4.11 Structural Model Assessment: Second Stage of SEM 222
4.11.1 Hypothesized Structural Model 223
4.11.2 Re-specified Hypothesized Structural Model 225
4.11.3 Mediation Analysis 229
4.11.3.1 Assessment of Mediation (JD-ANX-TP) 234
4.11.3.2 Assessment of Mediation (JD-DEP-TP) 235
4.11.3.3 Assessment of Mediation (JD-ANX-CP) 236
4.11.3.4 Assessment of Mediation (JD-DEP-CP) 237
4.11.3.5 Assessment of Mediation (PeD-ANX-TP) 239
4.11.3.6 Assessment of Mediation (PeD-ANX-CP) 240
4.11.3.7 Assessment of Mediation (PeD-DEP-TP) 241
4.11.3.8 Assessment of Mediation (PeD-DEP-CP) 243
4.11.4 Moderation Analysis 244
4.11.4.1 Moderating Effect of Social Support in JD-JS Relationship 247
4.11.4.2 Moderating Effect of Self-Compassion in JD-JS Relationship 248
4.12 Results of Hypotheses Testing 250
4.13 Chapter Summary 251
CHAPTER 5: DISCUSSION, RECOMMENDATIONS AND CONCLUSION 253
5.1 Chapter Overview 253
5.2 Summary of the Findings 253
5.3 Discussion of the Findings 256
5.3.1 Job Demands as Predictors of Job Stress and Job Performance 256
5.3.2 Personal Demands as Predictors of Job Stress and Job Performance 258

5.3.3 Job Stress as a Predictor of Job Performance 260
5.3.4 Mediating Role of Job Stress in Stressors-Strain Relationship 261
5.3.5 Moderating effect of Job and Personal Resources 263
5.4 Implications of Research 265
5.4.1 Theoretical Implications 266
5.4.2 Practical Implications 269
5.4.2.1. An Online JD-R Assessment Tool: The Energy Compass 272
5.5 Limitations of the Study 279
5.6 Recommendations for Future Research 280
5.7 Conclusion of the Study 282
REFERENCES 285
APPENDIX 387

LIST OF TABLES

Page

Table 3.1 Sample Size 140

Table 3.2 Geographical Clusters in Pakistan 141

Table 3.3 Questionnaire Distribution in Private Hospitals 144

Table 3.4 Comparison of CB-SEM and PLS-SEM 160

Table 3.5 Internal Consistency of Constructs 164

Table 3.6 Assumptions of CB-SEM 169

Table 3.7 Goodness of Fit Indices 172

Table 4.1 Respondents' Profile 178

Table 4.2 Descriptive Statistics 182

Table 4.3 Correlations Analysis 183

Table 4.4 The description of Emotional Demands Scale 188

Table 4.5 The description of Physical Demands Scale 190

Table 4.6 The description of Quantitative Demands Scale 192

Table 4.7 The description of Self-Criticism Scale 195

Table 4.8 The description of Neuroticism Scale 197

Table 4.9 The description of Anxiety Scale 201

Table 4.10 The description of Depression Scale 203

Table 4.11 The description of Task Performance Scale 206

Table 4.12 The description of Contextual Performance Scale 208

Table 4.13 The description of Self-Compassion Scale 212

Table 4.14 The description of Social Support Scale 213

Table 4.15 Evaluation of Measurement Model 219

Table 4.16 Analysis of Constructs' Validity 221
Table 4.17 Results of Hypotheses Testing (Direct Effects) 225
Table 4.18 Results of Hypotheses Testing (Final Hypothesized Model) 228
Table 4.19 Type of Mediations 233
Table 4.20 Results of Hypothesized Mediation Effects 233
Table 4.21 Path Analysis and Bootstrapping results of JD-ANX-TP 235
Table 4.22 Path Analysis and Bootstrapping results of JD-DEP-TP 236
Table 4.23 Path Analysis and Bootstrapping results of JD-ANX-CP 237
Table 4.24 Path Analysis and Bootstrapping results of JD-DEP-CP 239
Table 4.25 Path Analysis and Bootstrapping results of PeD-ANX-TP 240
Table 4.26 Path Analysis and Bootstrapping results of PeD-ANX-CP 241
Table 4.27 Path Analysis and Bootstrapping results of PeD-DEP-TP 242
Table 4.28 Path Analysis and Bootstrapping results of PeD-DEP-CP 244
Table 4.29 Result of path analysis (moderation of social support) 248
Table 4.30 Path Analysis results of SC moderation 249
Table 4.31 Results of Hypotheses Testing 250

LIST OF FIGURES

Page

Figure 2.1 Graphical Representation of Job Demands-Resources Theory 43

Figure 2.2 Conceptual Framework……....126

Figure 4.1 CFA: Measurement model for Emotional Demands 189

Figure 4.2 CFA: Measurement model for Physical Demands 191

Figure 4.3 CFA: Measurement model for Quantitative Demands 192

Figure 4.4 Second order CFA: Measurement model for Job Demands 194

Figure 4.5 CFA: Measurement model for Self-Criticism 196

Figure 4.6 CFA: Measurement model for Neuroticism 198

Figure 4.7 Second order CFA for the construct of Personal Demands 200

Figure 4.8 CFA: Measurement model for Anxiety 202

Figure 4.9 CFA: Measurement model for Depression 203

Figure 4.10 Second Order CFA: Measurement model for Job Stress 205

Figure 4.11 CFA: Measurement model for Task Performance 206

Figure 4.12 CFA: Measurement model for Contextual Performance 208

Figure 4.13 Second Order CFA: Measurement model for Job Performance 210

Figure 4.14 CFA: Measurement model for Self-Compassion 212

Figure 4.15 CFA: Measurement model for Social Support 213

Figure 4.16 Measurement Model of the study 215

Figure 4.17 Pooled CFA: Final Measurement Model of the study…….217

Figure 4.18 Hypothesized Structural Model 224

Figure 4.19 Final Hypothesized Structural Model 227

Figure 4.20 A Simple Mediation Model 230

Figure 4.21 Mediation Analysis (JD-ANX-TP) 234
Figure 4.22 Mediation Analysis (JD-DEP-TP) 236
Figure 4.23 Mediation Analysis (JD-ANX-CP) 237
Figure 4.24 Mediation Analysis (JD-DEP-CP) 238
Figure 4.25 Mediation Analysis (PeD-ANX-TP) 240
Figure 4.26 Mediation Analysis (PeD-ANX-CP) 241
Figure 4.27 Mediation Analysis (PeD-DEP-TP) 242
Figure 4.28 Mediation Analysis (PeD-DEP-CP) 244
Figure 4.29 Simple Moderation Model 245
Figure 4.30 Path analytic representation of an interactive effect in AMOS 247
Figure 4.31 Plotting the interaction of self-compassion in JD-JS relationship 249
Figure 5.1 Steps for application of JD-R theory in Organizations……...273

LIST OF ABBREVIATIONS

AGFI	Adjusted Goodness of Fit Index
AMOS	Analysis of Moment Structures
AVE	Average Variance Extracted
CB-SEM	Covariance Based Structural Equation Modeling
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CMB	Common Method Bias
COR	Conservation of Resources
CR	Composite Reliability
DCS Model	Demand Control Support Model
DSM-V	Diagnostic and Statistical Manual of Mental Disorders, 5th Edition
EC	Energy Compass
EFA	Exploratory Factor Analysis
GFI	Goodness of Fit Index
GLS	Generalized Least Squares
HSE	Health and Safety Executive
ICT	Information and Communications Technology
JD	Job Demands
JD-R	Job Demands-Resources
JP	Job Performance
JR	Job Resources
JS	Job Stress
MLE	Maximum Likelihood Estimation

NIOSH	National Institute for Occupational Safety and Health
NFI	Normed Fit Index
NRC	National Research Council
PeD	Personal Demands
PLS-SEM	Partial Least Squares-Structural Equation Modeling
PR	Personal Resources
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modeling
SPSS	Statistical Package for Social Sciences
TLI	Tucker-Lewis Index
ULS	Unweighted Least Squares

CHAPTER 1

INTRODUCTION

1.1 Chapter Overview

This opening chapter introduces the topic under investigation and provides a general discussion on the theories and variables to be used in this thesis. It discusses the background and context of the research problem. It offers a problem statement which outlines the research gaps along with presenting research questions and objectives of the study. Furthermore, it also describes the scope of the study along with highlighting the potential contributions and significance of this study. It goes on to include the conceptual definitions of the constructs to be used in this study. Finally, it outlines the structure of this PhD thesis.

1.2 Background of the Study

The current century has witnessed many substantial shifts and changes around the world. These changes are very rapid and are being experienced in many different and unpredictable ways and it is very much likely that these changes will intensify in the future. Changes in nature of work environment and work practices are no exception in this regard. The changes in the nature of workforce and working environment create challenges for today's organizations and employees (Mark & Smith, 2008). These changes can be attributed due to many factors such as globalization and more international competition, the decline in manufacturing and other such industries in more developed countries, rise of services sector and recent advances in information technology, outsourcing, focus on short-term contracts, automation of plants, mergers and acquisitions, and decline in trade unions (Cox & Griffiths, 1995; Schabracq & Cooper, 2000; Burke & Ng, 2006; Frese, 2008; Patel, 2015).The

aforementioned major changes in the external and internal environment of workplaces bring enormous pressure for workers to be able to compete, adapt and learn the new skills and abilities so that the demands and requirements of their jobs are met (Harper, 2015; Petrou, Demerouti, & Schaufeli, 2015) which results in stressful work environments for employees (Beehr, 2014; Hayes, Douglas & Bonner, 2015; Neff, 2017).

Job stress, especially in the form of psychological stressors, is experienced by employees due to high job demands and lack of job resources which in turn leads to many negative physical and psychological issues such as augmented threat of heart related diseases, digestive complications, depression, anxiety, burnout, absence due to sickness, weariness, increased risk of accidents and errors, musculoskeletal problems, work home interference, and numerous other pressing concerns (Cox & Griffiths, 1995; Gianakos, 2002; HSE, 2007) and various negative job related attitudes and behaviors including low job satisfaction (Flanagan, 2006), higher turnover intentions (Mosadeghrad, Ferlie & Rosenberg, 2011) and actual turnover (Kahn & Byosiere, 1992; Fila, 2013), lower levels of organizational commitment (Addae, Parboteeah, & Velinor, 2008; Bhatti et al., 2016), low productivity (Halkos & Bousinakis, 2010), work-family interference (Eby et al., 2005), higher chance of exhibiting workplace deviant behaviors (Chiu, Yeh, & Huang, 2015) and workplace incivility (Leiter, Peck, & Gumuchian, 2015) and most importantly impaired job performance (LePine et al., 2005; Bakker & Demerouti, 2007; Bakker & Demerouti, 2017).

Stress literature does not lack theories and models. There are many theories and models that explain stress in different ways (interactional and transactional). Because of being well-studied, widely tested and highly cited, some of these models are quite influential in stress research such as job demand control (JDC) model (Karesk, 1979) and effort reward imbalance (ERI) model (Siegrist, 1996). There is no doubt that the previously developed models on

stress are quite useful in understanding the nature of stress at work but at the same time those models have some shortcomings. Some models and theories totally neglected the role of individual differences and thus are too narrow in scope and some are too difficult to comprehend and thus quite lack the power of predictive validity (Mark & Smith, 2008). A useful and recent approach that combines the strengths and addresses the weaknesses of previous models to explain job stress and job performance of employees is that of job demands-resources (JD-R) model which is recently matured into job demands-resources theory (Demerouti, Bakker, Nachreiner & Schaufeli, 2001; Bakker & Demerouti, 2007; Bakker & Demerouti, 2014; Bakker & Demerouti, 2017) in which job stress can be explained by high job demands and low job resources provided by organizations. This model and theory was used as a theoretical framework for this thesis.

Addressing the criticism of only having job characteristics in the model, Xanthopoulou, Bakker, Demerouti and Schaufeli (2007) have introduced and explored the role of personal resources in JD-R theory. While personal resources are considered an important part of JD-R theory now and over time proved to be important predictors of work engagement in motivational process of the model but the role of personal demands, which can prove to be important individual risk factors providing insights as to how personal vulnerability play its role in predicting job stress independently from job context (Schaufeli et al, 2009), have largely being neglected in the past (Van den Broeck et al., 2013; Schaufeli & Taris, 2014; Bakker & Demerouti, 2017). This study intends to fill this gap and propose some new paths in the Job Demands-Resources (JD-R) theory as in how high job demands (quantitative, physical and emotional) and personal demands (neuroticism and self-criticism) predict job stress (anxiety and depression) which in turn mediates the relationship of both (job and personal) demands with job performance (task and contextual performance) of nurses in private

hospitals of Pakistan. Moderating effect of both job resources (social support) and personal resources (self-compassion) was also tested to examine if both (job and personal) resources are important and significant in moderating the effect of high job demands on job stress (anxiety and depression) of nurses working in private hospitals of Pakistan.

1.3 Problem Statement

Many researchers in the past have attempted to define the nature of stress and also proposed some of the most influential models and theories of stress which are both interactional and transactional in nature (Mark & Smith, 2008). A relatively new model named job demands-resources (JD-R) model and theory (Demerouti et al., 2001; Bakker & Demerouti, 2007, Bakker & Demerouti, 2014, Bakker & Demerouti, 2017) which is derived from conservation of resources (COR) theory (Hobfoll, 1989) explains job performance by taking into account the role of job stress (Schaufeli & Bakker, 2004). Early studies on JD-R theory focused only on job characteristics (job demands and job resources) in predicting burnout and engagement (Demerouti et al., 2001; Bakker et al., 2003; Bakker, Demerouti, & Schaufeli, 2003; Bakker, Demerouti, De Boer & Schaufeli, 2003; Bakker, Demerouti & Verbeke, 2004; Schaufeli & Bakker, 2004; Bakker, Demerouti & Euwema, 2005; Hakanen, Bakker, & Demerouti, 2005; Hakanen, Bakker & Schaufeli, 2006) and thus totally neglected the role of individual characteristics that might be important in explaining or predicting both stress and work engagement. This issue was later addressed by Xanthopoulo et al. (2007) who explored and introduced the role of personal resources in JD-R theory and it now became one of the propositions of JD-R theory that personal resources can play a role similar to job resources (Bakker & Demerouti, 2017).

Xanthopoulo et al. (2007) hypothesized that similar to the moderating role of job resources in stressors-strain relationship, personal resources could also moderate the positive association between job demands and burnout but they could not prove this hypothesis in their study and instead they found that personal resources mediated the relationship between job resources and outcomes like work engagement. Demerouti and Bakker (2011) argued that "although we do have evidence that personal resources can be conceptualized as mediator or outcome in the JD-R theory, we expect that they might have an even more complex role in modifying the impact of the work environment into positive or negative outcomes" (p. 3). In a very recent review on JD-R theory, Bakker and Demerouti (2017) argued that "personal resources are expected to buffer the undesirable impact of job demands on strain, and boost the desirable impact of (challenge) job demands on motivation. Research has provided only limited support for this proposition, which means that more research is needed to test the Job Demands and Personal Resources interaction."

Building on these suggestions, present study has used self-compassion (a personal factor associated with resiliency in less than favorable situations) as a specific measure of personal resource in order to test if it moderates the relationship between job demands and job stress. It has been noted in the literature that the use of job stress as a mediator in JD-R theory research in explaining the relationship of job demands and job performance was uncommon in the past and instead the most commonly studied mediating variable in this process is that of burnout (Bakker & Demerouti, 2017) and hence it would be an interesting avenue to address this research gap by using job stress (anxiety and depression) as a mediator in the relationship between both (job and personal) demands and job performance (task and contextual performance) in stress process of JD-R theory.

Moreover, it was suggested that while job demands are usually considered the main predictors of job stress in JD-R theory but "it could be interesting to consider personal demands as predictors of burnout and engagement. For example, personality traits like perfectionism and emotional instability, and goal settings and level of expectations, could be relevant personal demands to be studied in future research on this intriguing topic" (Prieto et al., 2008, p. 359). In a recent review on the JD-R theory, it was observed that "previous job design models and empirical evidence indicate that personal aspects such as over commitment might make workers vulnerable for the negative impact of job demands or impede them to benefit from positive aspects (Van Vegchel, De Jonge, Bosma, & Schaufeli, 2005). Recent research seems to hint at such detrimental factors in the realm of the JD-R theory too. For example, workers holding deficits in their cognitive control system seemed to develop heightened levels of burnout when confronted with emotional dissonance (Diestel & Schmidt, 2011). Personal characteristics putting an additional burden on employees' might be labeled as personal demands, and the JD-R theory can constitute a valuable framework to further examine their impact on job design, burnout, and work engagement. The focus on personal demands might also have practical relevance, as individuals holding personal demands might be particularly vulnerable to develop burnout and a lack of work engagement" (Van den Broeck et al., 2013, p. 97-98).

Also, in another relatively recent critical review of job demands-resources theory, Schaufeli and Taris (2014) suggested that "so far only personal resources have been integrated into the JD-R theory, but personal vulnerability factors (such as neuroticism, workaholism, and pessimism) could also be included" (p.57). Barbier et al. (2013, p.760) suggested that "future research is needed to clarify the concept of personal demands". They defined personal demands "as the requirements that individuals set for their own performance and behaviour

that force them to invest effort and are therefore associated with physical and psychological costs". They have only "used performance expectations as a specific measure of personal demands. It would be interesting to investigate what other variables could be operationalized as personal demands". Finally, Bakker and Demerouti (2017) pointed out that "next to personal resources, JD-R theory can be expanded to include personal demands". They further argued that "depending on the nature of personal demand, personal demands may be involved in health-impairment process or in motivational process proposed by JD-R theory".

The present study intends to fill this gap by using the guidelines mentioned above as a starting point and operationalize personal demands as neuroticism and self-criticism both of which are used as predictors of job stress (anxiety and depression) in stress process of JD-R theory. This study is the first study, to the best of researcher's knowledge, which tests if personal demands can play a role similar to job demands in predicting job stress in the JD-R theory. Moreover, this study also plans to use both type of resources i.e. job and personal resources of social support and self-compassion respectively as moderators in stressors-strain relationship. Both job and personal resources were used in the past as moderators in this relationship separately (Jex & Elacqua, 1999; Van Ypren & Snijders, 2000; Makikangas & Kinnunen, 2003; Bakker et al., 2005; Tremblay & Messervey, 2011) but to the best of researcher's knowledge, no study in the past has used both (job and personal) resources together as moderators in stressors-strain relationship. Another important contribution is to use the concept of self-compassion as a personal resource and also the use of self-criticism as a personal demand. To the best of researcher's knowledge, both of these variables have not been used in previous JD-R theory research. Last but not least, the use of job stress as a mediator in the relationship of both (job and personal) demands and job performance also adds to the body of knowledge. Beside these theoretical contributions to the JD-R theory, this study also claims to be the first

study to use job demands-resources theory with these variables to predict job stress (anxiety and depression) and job performance (task and contextual performance) in the context of nurses working in private hospitals of Pakistan.

1.4 Contextual Background of the Problem

One of the most pressing concerns for Pakistan's population is the poor, inefficient, insufficient and ill-managed healthcare provision. It is certainly not the priority of federal and provincial governments in Pakistan. Pakistan's healthcare sector is best described in a working paper of Pakistan Institute of Development Economics (PIDE) in which the authors Akram and Khan (2007) concluded that "Pakistan's health care system is inadequate, inefficient, and expensive; and comprises of an under-funded and inefficient public sector along with a mixed, expensive and unregulated private sector. These poor conditions in the health sector may be attributed to a number of factors like poverty, malnutrition, unequal access to health facilities, inadequate allocation for health, and high population growth and infant mortality" (p. 28). They also found that besides being expensive and unregulated private healthcare sector, as much as 77 percent households consult private physicians as compared to 23 percent who prefer consulting public sector hospitals for health related issues. This percentage shows that most patient traffic is found in private hospitals of Pakistan which puts the additional burden on healthcare personnel working there.

Government spending on healthcare provision is getting reduced in each coming year which also shows that there is no priority placed on improving the health indicators of the country. Currently the spending of government of Pakistan on healthcare services provided for public is 9.31 US Dollars per person which is far less than internationally agreed upon standard of 60

US Dollars per person (Wasif, 2013a). Until recently, the healthcare sector was led by Ministry of Health which was dissolved in midst of 2011 due to 18th amendment in the constitution of Pakistan which is also quite a setback in itself because Pakistani healthcare system should be driven by fair policies formulated by federal government for each province, said by Dr. Sania Nishter, who is the founder of Heartfile, in an interview to The Express Tribune (Wasif, 2013b). Now, provision of healthcare is the responsibility of health departments in five different provinces of Pakistan.

Like many other countries in South Asia, infrastructure related to health and sanitation is somewhat satisfactory in urban areas but it is very poorly developed and managed in rural areas of the country (Van Weel et al., 2016). People in those rural areas have to rush to major cities in case of medical emergency burdening even more the already burdened hospitals in major cities of Pakistan (Elahi, 2013). Due to these conditions, Pakistan's healthcare sector is facing the issue of brain-drain where most of the young doctors and nurses prefer to work abroad in developed countries so as to earn more and face less challenges than in home country (Afzal, Masroor & Shafqat, 2012). While important issues such as government's poor planning related to everything in general and healthcare in particular, corruption in major projects, political instability, economic turmoil and brain drain of doctors need to be addressed sooner than later, there is but one issue that requires most attention in terms of provision of quality healthcare i.e. protection and development of nursing profession (Ali & Ali, 2014; Hamid, Malik, Kamran, & Ramzan, 2014; Shahzad & Malik, 2014).

Nurses play a key role in any healthcare setting because they spend more time with patients than any other healthcare provider and their performance is directly linked to the performance of the healthcare organizations and better patient outcomes (Page, 2004). As healthcare organizations are one of the most important organizations in any society, nurses are

undoubtedly one of the most significant and valuable resources in terms of healthcare settings (Laschinger, Wong, Cummings, & Grau, 2014). It is very unfortunate that nurses in Pakistan do not get the due importance, attention, recognition and respect despite their crucial role in provision of healthcare. Nursing profession and workforce is largely ignored and is not considered as a respectable and honorable profession in Pakistani culture as a whole which in turn makes it very difficult for anyone who is interested in joining this profession and due to this reason; it is not a first choice for many. It is a dilemma which leads to the shortages in nursing and paramedic staff throughout the country (Chauhan, 2014).

In Pakistan, nurses to patient ratio in 2009 as reported by World Health Organization (WHO) was 1:3644 which is very disturbing and alarming (WHO, 2009). As per globally acceptable standards set by WHO, the doctors-to-nurses ratio should ideally be 1:3 but if we look at this ratio in Pakistan, it is exact opposite to the international norms i.e. 3:1 (Akram & Khan, 2007) which means less nurses are available to complete the important duties for supporting doctors in critical situations which puts more pressure on existing nurses and in turn they feel more stressed because of being over burdened in their jobs. For nursing education, Pakistan has over 162 registered nursing colleges and more than 50 nursing students are registered in each of them over the course of a year. The body which use to regulate these schools is known as Pakistan Nursing Council (PNC) and this council has the duties like accreditation of nursing schools or training centers, preparing the syllabus, providing licenses to nurses for their practice and services, and also to provide the suggestions on how to improve the nursing education, jobs and whole profession to provincial and federal government. Although it seems that these colleges are providing sufficient number of nurses for Pakistan healthcare setup but demand for nurses in the whole country especially in rural areas is far more than the supply (Chauhan, 2014).

The shortage in nursing staff all over the country exerts pressure and induces stress for the already employed nurses in private sector hospitals which in turn affect their performance. One of the many reasons for this shortage in nursing staff is because of the negative tag associated with this profession in Pakistan. Nursing is not treated as a well reputed profession and it is usually considered as a job for far less worthy of doing any other job or business for that matter. “This profession is not the first choice for many,” sadly told by Salma Rattani, director for the Bachelors of Science in Nursing (BSN) program at the Aga Khan University (AKU), School of Nursing and Midwifery (SONAM). “Nursing isn’t considered a well-reputed profession and something that is generally meant for women” (Chauhan, 2014). It is due to the above mentioned reasons that, in this present study, researcher has selected nurses in private sector hospitals only because they experience more stress as they have more (quantitatively, physically, and emotionally) demanding jobs and they have far less resources available to effectively and efficiently complete their jobs in time. They have to work longer hours; they are being paid far less than any other profession; they are exposed to numerous life threatening infections and diseases every single day, they are blamed for the death of the patients by family, they also have to experience the anger and physical abuse from patients and their families, they experience sexual assault and harassment, and they have to stay at hospitals late in nights; which is not considered an honorable thing to do in the conservative society of Pakistan (Chauhan, 2014).

Due to the aforementioned problems and Pakistani society being male chauvinist (Sheikh, 2016), it is often difficult for women to work in male dominant settings (Pervez et al., 2015) and that is why nurses in Pakistan face many issues at work like sexual abuse and harassment, excessive workload, unhealthy working conditions, low rewards in terms of efforts, workplace violence, patient harassment, political influence, little or no growth

opportunities, less education and training institutes, shortage of nurses, never ending shifts, blaming for death of a patient, less respect, disgraceful comments and remarks, rude behavior of doctors and senior staff, low recognition, little to no feedback and coaching from supervisors, time pressure, conflicting expectations and many more (Alwani, 2009; Somani & Khawaja, 2012; Meghani & Sajwani, 2013; Yousef, 2013; Chauhan, 2014). All of these factors listed above and many others attribute to greater problems of work related stress and poor performance among nurses in private healthcare organizations of Pakistan.

1.5 Research Questions

Based on the arguments made in problem statement, following questions arises that needs to be answered in this study:

RQ1: Do job demands (quantitative, physical and emotional demands) have direct effect on job stress (anxiety and depression) and job performance (task and contextual performance) of nurses?

RQ2: Do personal demands of neuroticism and self-criticism also have a direct effect on job stress (anxiety and depression) and job performance (task and contextual performance) of nurses?

RQ3: Does job stress have a direct relationship with job performance of nurses?

RQ4: Does job stress (anxiety and depression) act as a mediator in the relationship between both (job and personal) demands and job performance (task and contextual performance) of nurses?

RQ5: Do (job and personal) resources of social support and self-compassion buffer the positive relationship of job demands and job stress of nurses?

1.6 Research Objectives

Based on the proposed research questions of this study, the primary objective of this study was to contribute to and expand the understanding about both job demands-resources (JD-R) theory and conservation of resources (COR) theory by investigating the direct effects of both job and personal demands on job stress (anxiety and depression) along with the mediation of job stress in the relationship of (job and personal) demands and job performance (task and contextual performance) of nurses as well as to test the moderating or buffering effects of both job and personal resources in the relationship of job demands and job stress as experienced by nurses working in private sector hospitals of Pakistan. In particular, this research attempts:

RO1: To measure the direct effects of job demands (quantitative, physical and emotional) on job stress (anxiety and depression) and job performance (task and contextual performance) of nurses.

RO2: To examine the direct effect of personal demands (neuroticism and self-criticism) on job stress (anxiety and depression) and job performance (task and contextual performance) of nurses.

RO3: To assess the direct relationship between job stress (anxiety and depression) and job performance (task and contextual performance) of nurses.

RO4: To investigate the mediating effects of job stress (anxiety and depression) in the relationship between (job and personal) demands and job performance (task and contextual performance) of nurses.

RO5: To test the moderating or buffering role of both job resources (social support) and personal resources (self-compassion) in the relationship between job demands and job stress of nurses.

1.7 Scope of the Study

In order to achieve the above-mentioned research objectives, the scope of this study is confined to examining a comprehensive model of job stress and job performance (based on JD-R theory) in private hospitals of Pakistan. More specifically, nurses were selected as the unit of analysis in present study. The reason behind the selection of studying nurses' job stress and performance specifically in healthcare organizations of Pakistan is because of the fact that nursing profession is one of the most stressful, challenging and demanding professions in the world (McVicar, 2003; Halligan, 2006; Jennings, 2008; Lim, Bogossian, & Ahern, 2010; Long, Kowang, Ping, & Muthuveloo, 2014) and this holds even more true for developing countries like Pakistan (Khalid, Irfan, Sheikh, & Faisal, 2010; Jahangir, 2013; Hamid, Malik, Kamran, & Ramzan, 2014) where people are not provided the promised health services and where there is a shortage of hospitals, doctors, nurses and paramedical staff especially in rural areas of the country (Wasif, 2013a). Nursing staff is the largest and one of the most important human resources in health care facilities and due to this reason, their performance have quite a say on the quality of care they provide and the outcomes faced by patients under their care (Al-Ahmadi, 2009).

As the main objective of this study was to test the relationships between various job and personal stressors, job stress and job performance, the scope of present study is narrowed to studying one stress theory (JD-R theory) which also takes into account the job performance of employees. Moreover, the scope of this study is confined only to one process of JD-R theory i.e. stress process because it is most relevant to study the concepts of job stress and job performance. Job demands-resources (JD-R) theory was selected for present study because it encompasses the two global categories of demands and resources in which any number of job characteristics can be taken into account depending on the nature of these job characteristics

whereby demands are known to create stressful experiences in jobs and resources are there to protect employees from the negative effects of those demands (Schaufeli & Taris, 2014). Job demands-resources theory (Demerouti et al., 2001; Bakker & Demerouti, 2007; Bakker & Demerouti, 2014; Bakker & Demerouti, 2017) also allows for incorporation of personal characteristics besides just the traditional use of job characteristics in previous models (Xanthopoulo et al., 2007). Moreover, JD-R theory allows to study both job stress and job performance of employees simultaneously (Schaufeli & Bakker, 2004) by devising a model in which direct, indirect and moderating effects can all be studied together. The scope of this study is also limited to using the job and personal characteristics, both in terms of demands and resources, which are found to be related to healthcare professionals and more specifically to nurses. Due to these reasons, present study has chosen to study the concepts of job stress and job performance of nurses working in private hospitals of Pakistan based on an overarching and heuristic theory of job stress i.e. JD-R theory.

1.8 Significance of the Study

As discussed earlier, one of the main objectives of this study is to examine the influence of job and personal demands (neuroticism and self-criticism) on private sector nurses' job performance (task and contextual performance) mediated or explained by their level of job stress (anxiety and depression). Another main objective is to find out if both job and personal resources (social support and self-compassion) of nurses can act as moderators in the positive relationship of high demands (job and personal demands) and nurses' job stress (anxiety and depression). The current study contributes to both theory and practice as the findings of the study confirm the assumptions made above. This study contributes to theory (JD-R and COR) and body of knowledge by evaluating private sector nurses' job stress (mediator) and job performance by using job demands-resources (JD-R) theory (Demerouti et al., 2001; Bakker

& Demerouti, 2007; Bakker & Demerouti, 2014, Bakker & Demerouti, 2017) while taking into account the direct effect of both demands i.e. job and personal demands on job stress and also by testing moderating effects of both personal and job resources on the relationship of job demands and job stress.

The current study is among the first few studies (if not the very first) that examines both the mediation and moderation effects in JD-R research. It is, to the best of researcher's knowledge, the first study ever to take into account the role of personal demands (operationalized as neuroticism and self-criticism) and to measure their direct relationship with job stress (anxiety and depression) in JD-R theory. The present study also adds to JD-R theory by testing the role of both job and personal resources of social support and self-compassion respectively as moderators especially in this relationship of job demands and job stress. Previously, both job and personal resources were used as moderators but both of these resources together were not used as moderators of the positive relationship between job demands and job stress.

It is also important to note here that self-compassion and self-criticism (operationalized here as personal resource and personal demand respectively) are the new variables to test in JD-R theory as the researcher could not find a single study on JD-R theory which includes these variables. Tremblay and Messervey (2011) used compassion satisfaction as a personal resource but that is a conceptually and statistically different concept from self-compassion (Alkema, Linton, & Davies, 2008). Self-compassion, as term suggests, is related to showing compassion and care towards oneself and compassion satisfaction, on the other hand, is related to the satisfaction derived from showing compassion to others by doing work that is compassion oriented (Stamm, 2005; Slocum-Gori et al., 2013). A considerably large amount of previous studies and reviews on job demands-resources theory focused on burnout and

work engagement of employees as the outcomes for job demands and job resources respectively (Demerouti et al., 2001; Bakker & Demerouti, 2007; Bakker & Demerouti, 2014; Bakker, 2013; Bakker & Sanz-Vergel, 2013). This study took job stress as an outcome of (job and personal) demands and also a mediator (which is not a common phenomenon in previous studies) to explain the relationship of (job and personal) demands and job performance of nurses working in private sector hospitals of Pakistan.

Moreover, the present study attempts to fill the gap and add to the literature of nurses' job stress (anxiety and depression) and job performance (task and contextual performance) in a way that researchers in the field can have a better understanding of how nurses in developing economies can perform better by utilizing their personal and job resources to mitigate the negative outcomes of highly demanding situations in their jobs; this study also attempts to provide an empirical evidence on the newly proposed directions of JD-R theory (Bakker & Demerouti, 2014, Bakker & Demerouti, 2017) and also provide a better view of how and whether job and personal demands predict job stress (anxiety and depression) and predict job performance of nurses in the context of Pakistani culture, thus adding value both in terms of theoretical and contextual contributions.

One the other hand, the present study is also significant because it tends to be fruitful to the stakeholders in federal government, provincial governments' health ministries and administration of healthcare organizations as well. It attempts to address one of the most pressing concerns Pakistani healthcare industry is experiencing i.e. nurses' poor job performance. This study can also be used in policy development and decision making at federal, provinces and individual hospital's level to help improve the performance of nurses which is crucial for quality of care and outcomes the patients expects from those nurses.

Hospitals' administration can take into account the factors like improving job resources for nurses, encouraging them to use their personal resources according to the needs and pressures they face in the less favorable situations to help mitigate the negative outcomes of job stress.

1.9 Conceptual Definitions of the Variables

Below mentioned definitions can be used to get an idea of what the variables used in this study mean. The operationalization of these variables according to this study is discussed in detail in the measures section of chapter on research methodology (For details, refer to Section 3.6 of Chapter 3).

1.9.1 Job Demands

Job demands "refer to the physical, psychological, social, or organizational aspects of the job that require sustained physical or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological or psychological costs" (Demerouti et al., 2001, p. 501).

1.9.2 Quantitative Job Demands

Quantitative job demands refer to "work overload or work pressure or too much work to do in too little time" (Peeters et al., 2005, p. 45).

1.9.3 Physical Job Demands

Physical job demands refer to "the extent to which the job requires strenuous movements like bending, physical strength, lifting, or carrying objects" (Demerouti & Geurts, 2004, p. 293).

1.9.4 Emotional Job Demands

Emotional job demands refer to “the extent to which employees are confronted in their job with things or persons that touch them personally” (Demerouti & Geurts, 2004, p. 293).

1.9.5 Personal Demands

Van den Broeck et al. (2013) stated that “personal characteristics putting an additional burden on employees’ might be labeled as personal demands” (p. 98).

Or;

Personal demands can be defined “as the requirements that individuals set for their own performance and behaviour that force them to invest effort and are therefore associated with physical and psychological costs” (Barbier et al., 2013, p. 751).

1.9.6 Neuroticism

Neuroticism “is a personality dimension that is described by adjectives such as tense (vs. relaxed), nervous (vs. at ease) and moody (vs. steady) and is inversely labelled as emotional stability” (Denissen & Penke, 2008, p. 497).

1.9.7 Self-criticism

Self-criticism may be defined as “constant and harsh self-scrutiny and evaluation and a chronic fear of being disapproved of or criticized, and of losing the approval and acceptance of significant others” (Blatt & Homann, 1992, p. 528).

1.9.8 Job Resources

Job resources refer to “those physical, psychological, social, or organizational aspects of the job that (a) are functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; or (c) stimulate personal growth, learning, and development” (Demerouti et al., 2001, p. 501).

1.9.9 Social Support

Social support is defined as “the process of interaction in relationships which improves coping, esteem, belonging, and competence through actual or perceived exchanges of physical or psychosocial resources” (Gottlieb, 2000, p. 28)

1.9.10 Personal Resources

Personal resources are “aspects of the self that are generally linked to resiliency and these pertain to individuals’ sense of their ability to successfully control and impact their environment, especially during challenging circumstances” (Hobfoll, Johnson, Ennis, & Jackson, 2003, p. 632).

1.9.11 Self-compassion

Self-compassion “involves being touched by and open to one’s own suffering, not avoiding or disconnecting from it, generating the desire to alleviate one’s suffering and to heal oneself with kindness. Self-compassion also involves offering nonjudgmental understanding to one’s pain, inadequacies and failures, so that one’s experience is seen as part of the larger human experience” (Neff, 2003a, p. 87).

1.9.12 Job Stress

Lazarus and Folkman's (1984) defined stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being". In this study, job stress was used as psychological distress. Psychological distress is “largely defined as a state of emotional suffering characterized by symptoms of depression (e.g., lost interest; sadness; hopelessness) and anxiety (e.g., restlessness; feeling tense)” (Mirowsky & Ross, 2002).

1.9.13 Anxiety

Kazdin (2000, p. 299) defined anxiety “as an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure. People with anxiety disorders usually have recurring intrusive thoughts or concerns. They may avoid certain situations out of worry. They may also have physical symptoms such as sweating, trembling, dizziness or a rapid heartbeat”.

1.9.14 Depression

American Psychiatric Association, in their manual, defined depression as “a state of low mood and aversion to activity that can affect a person's thoughts, behavior, feelings and sense of well-being” (DSM-V, 2013, p. 409).

1.9.15 Job Performance

Job performance is defined in terms of the entire projected value to the organization of distinct actions or behaviors performed by an employee over time (Motowildo, 2003, p. 39).

1.9.16 Task Performance

Task or in-role performance is the most important dimension of employees' job performance as it is relevant for every job and is described as those results and actions that are required by the organizations and these outcomes or tasks are directly related to achieving organizational goals (Motowidlo & Van Scotter, 1994, p. 476, Demerouti et al., 2014, p. 60).

1.9.17 Contextual Performance

Contextual or extra-role performance or citizenship performance of employees, on the other hand, is described as those voluntary and discretionary actions performed by the employees that are related to effective functioning of an organization but are not essentially related to employees' productivity (MacKenzie, Podsakoff, & Fetter, 1991, p. 124; Demerouti et al., 2014, p. 60).

1.10 Organization of Thesis

This PhD thesis consists of five chapters. First chapter introduces the topic and variables, discusses context and background of the study, articulates a problem statement, formulate research questions, and research objectives and also entails the justification of carrying out this research by identifying gaps in the current literature and body of knowledge. Scope and significance of the study is described along with presenting the conceptual definitions of the variables used in this study.

The second chapter is all about the systematically reviewing and critically evaluating the existing literature on the topic of job demands-resources, personal demands-resources, job stress and job performance. Models and theories, some of which are quite influential in job

stress literature are presented for better understanding of the topic in discussion. Underpinning theories, related to current study, like job demands-resources theory (JD-R) and conservation of resources theory (COR) are also discussed. How both job and personal demands predict job stress and job performance is described in detail along with a brief inclusion of job stress acting as mediator in the relationship of (job and personal) demands and job performance. Moderating effect of both (job and personal) resources on the positive relationship of job demands and job stress is also described. Specific attention has been given to discussing these variables in the context of healthcare organizations and in relation to nursing staff and more specifically in the context of nurses working in private sector hospitals of Pakistan.

The third chapter is about research methodology and research design. It describes in detail that how this research was carried out. It deals with research philosophy, research approach, population, sampling, sample size, sampling technique, data collection procedure, operational definitions and measures, instrument design, response rate and it also contains the details on which data analysis tools and techniques were used for present study.

The fourth chapter covers in detail the sections on the application of various data analysis tools and techniques employed in present study. More specifically, this chapter starts with the section of data screening and editing, moves on to test various assumptions of structural equation modeling (SEM) like testing for data normality, missing values analysis and detection and treatment of multivariate outliers. Moreover, details on demographic profile of respondents, descriptive statistics, the correlations among variables, confirmatory factor analysis (CFA), reliability and validity of constructs, measurement model, structural model, mediation and moderation analysis is presented in this chapter.

Based on the results obtained in fourth chapter, the next and last chapter of this thesis (Chapter 5) presents a summary of the findings, offers a detailed analysis on the obtained findings. Both theoretical and practical implications of the study are described along with highlighting the limitations of present study. Finally, a comprehensive section on how the future research on JD-R theory can take directions from present study along with the conclusion of the study is presented.

CHAPTER 2

LITERATURE REVIEW

2.1 Chapter Overview

This chapter engulfs the systematic and critical review of the existing literature on the topic of job demands-resources, personal demands-resources, job stress and job performance. This chapter starts with how changes in nature of work environment create job induced stress and why should job stress be examined as a construct in present study. Different approaches to define the phenomenon of stress in general and job stress in particular are discussed after that. Critical analysis of previous models and theories, some of which are quite influential and popular, and few of which are recent models and frameworks in job stress literature, are presented for better understanding of the topic in discussion.

Furthermore, underpinning theories like Conservation of Resources (COR) theory and Job Demands-Resources (JD-R) theory which is to be used as a theoretical framework in this study are discussed in detail. Job performance is then described in terms of its two dimensions of task and contextual performance. How job demands (quantitative job demands, physical demands, emotional demands) and personal demands (neuroticism and self-criticism) predict job stress (anxiety and depression) and job performance (both task and contextual) is described in detail along with a brief inclusion of job stress acting as mediator in the relationship of (job and personal) demands and job performance. Moderating effect of job both job resources operationalized as social support and personal resources operationalized as self-compassion are also described in job demands and job stress relationship. Specific attention has been given to discussing these variables in the context of healthcare

organizations and in relation to nursing staff and more specifically in the context of nurses working in private hospitals of Pakistan.

2.2 The Changing Nature of Work Environment

Past few decades witnessed a shift in the nature of work environment and trends in nature of workforce are changing across the globe, and this shift is instigating severe problems and challenges for employers and the employees. This shift is largely seen due to the decline in the demand of workforce in manufacturing sector due to automation and efficiency in manufacturing practices, rise of service economies, advances in information and communication technology (ICT), short-term contracts, performance based jobs and compensation, outsourcing, mergers and acquisitions, globalization which in turn brings more foreign competition (Cox & Griffiths, 1995; Schabracq & Cooper, 2000). Due to these changes in nature of work environment, organizations are becoming more and more concerned with adapting new changes in order to stay ahead of the competition and gain sustainable competitive advantage over rivalry firms by adopting world-class business practices and standards which in turn exerts a tremendous amount of pressure on employees to learn and adapt these changes in order to be able to meet the challenges and demands of their job (Cox & Griffiths, 1995).

This pressure created due to the changes occurring in external and internal environment of workplace may end up resulting in an extremely stressful and highly unfavorable work environment for employees. This stressful work environment can be explained by numerous characteristics of their job, normally called stressors, including high amount of workload, less control over the jobs, lack of performance feedback, less autonomy, effort-reward imbalance, emotional, cognitive and/or physical demands, bullying, workplace deviance, uncivil

behaviors of managerial staff or co-workers, organizational injustice, lack of opportunities for growth and development, little or no training, work-family conflict, sexual harassment, job insecurity, lack of social support, unrealistic performance standards, shift work, and role conflict and ambiguity (Griffiths, 1998). An attempt had been made by United Kingdom's Health and Safety Executive (HSE, 2007) to evaluate the most common issues of job design that creates job stress and health related problems, and listed down factors like demand, control, support, role, relationships, and organizational change in a part of their published framework known as "Management Standards".

Aforementioned factors, that create pressure and stress for employees, are often referred to as psychological stressors and are known to be associated with risk factors that affect physical and psychological health of an individual along with posing dangers in terms of negative organizational outcomes. These risk factors may create problems like coronary heart disease, issues that are gastrointestinal in nature, musculoskeletal problems, fatigue, anxiety, depression, drinking, smoking, misuse of substance, accidents inside and outside of workplace, absenteeism, presenteeism, burnout, job dissatisfaction, lower organizational commitment, less motivation and engagement, lower productivity, low morale, strikes and lockouts, turnover, impaired job performance which in turn poses serious dangers to organizational performance (Cox & Griffiths, 1995; Gianakos, 2002; HSE, 2007).

2.3 The Nature of Job Stress

Although the concept of stress is not new and is a widely studied construct, but it is unfortunate to find out in existing literature that there is little or no consensus on one concrete definition of stress. It is a term that was first coined by a doctor of medicine and a scientist named Hans Selye (Selye, 1936), who was nominated for the noble prize but unfortunately

did not receive it (Szabo, Tache, & Somogyi, 2012). In his first article written on the subject of stress in *NATURE* (a renowned academic journal), he defined stress as "the nonspecific response of the body to any demand made on it" (p. 32). But soon after his definition of stress reached to the academicians and practitioners, they began criticizing it for being "too vague, confusing, and ambiguous". He later on decided to refine the definition and operationalized stress as "a state manifested by a specific syndrome which consists of all the nonspecifically induced changes within the biological system" (Selye, 1976, p. 64)." Selye admitted in some interviews afterwards that he was not aware of the proper word to describe this phenomenon. When he wrote stress, he actually meant strain, and had he got clarity and grip over English language back then, he would be called the father of the concept of "strain" instead of "stress". The word stress was previously used for centuries in Physics literature to describe the phenomenon of elasticity.

Many other researchers have attempted to define the nature of stress in different contexts as Selye's work only focused on defining the stress in terms of physiological changes occurring in one's body. Job stress can be described as a phenomenon in which certain job characteristics are known to create physical and psychological health issues, or these job characteristics give rise to those risk oriented factors which adversely affects the (physical and mental) health of an individual (Beehr, 1995). It is also seen as threatening responses that can be manifested in the forms of physical and/or emotional responses resulting because of the misfit between the demands of a job and needs, capabilities, or resources of the employee (Williams, 1991; NIOSH, 2007). Another view was presented by Burnard (1991) who defined stress as a state of physiological, psychological or spiritual discomposure in which stressors or their responses prevailing in workplace environment are too much to handle for an employee or in other words, they surpasses a threshold of a worker's coping mechanism.

The phenomenon of stress takes place when (a) job resources are in danger due to high job demands, (b) resources one possess are depleted, and (c) return on investment of resources is quite low (Hobfoll & Freedy, 1993; Janssen, Schaufeli, & Houkes, 1999). In addition to the above argument, Le Blanc et al. (2001) found that reactions of stress can vary in terms of their intensity and also differ in terms of their expression in various forms including physiologically, psychologically and/or behaviorally. An interesting premise to describe this difference in intensity and expression was shown by various researchers in their studies in which they found that high demands are way more stressful in nature than the stress induced from low level of demands (McGrath, 1976; Karasek, Baker, Marxer, Ahlbom, & Theorell, 1981; Payne, Jabri, & Pearson, 1988; Marshall, Barnett, Baruch, & Pleck, 1991; Marshall & Barnett, 1992; Searle, Bright, & Bochner; 1999; Mikkelsen et al., 2000; Kristensen et al., 2004; McGuire & McLaren, 2009).

As mentioned earlier that there is little or no consensus on one concrete definition of the term stress (Cox & Griffiths, 1995) and as unfortunately but rightly pointed out by Dewe and Trenberth (2004) that it is very common a phenomenon in stress research to draw attention to troubles that revolves around the different conceptions of the term stress. However, regardless of these troubles mentioned in the previous literature in defining stress, Cox and Griffiths (1995) believed that there are only three different approaches to explain the nature of stress namely engineering, physiological and psychological approaches. In engineering approach of explaining stress, they argued that stress is known to be a stimulus or is representative of level of demand that exists in the environment of workplace. Physiological approach of explaining stress is no different from the original definition of Selye (1936) in which stress is considered to be laid upon the concept of changes occurring physiologically or biologically in a person's body when he or she experiences stress. The third and the most popular approach in defining

stress is psychological approach in which stress is seen as a dynamic process, and not just a mere stimulus, which transpires when a person interact with his/her environment (Cox & Mackay, 1981; Cox, Griffiths & Rial-Gonzales, 2000).

2.4 Classification of Job Stress

Stress can be classified into various types to further understand the complexity of its nature including eustress, distress, acute stress, episodic stress, chronic stress, (Selye, 1974; APA, 2012). These different types of stress which vary in terms of their expression, intensity and time-frame to explain the whole phenomenon, are briefly discussed in this section for having a better understanding of the construct.

2.4.1 Selye's Classification of Stress (Eustress and Distress)

Selye's work on stress mainly focused on negative aspects of stress that harms the bodily reactions of an individual until almost four decades after when he realized that not all stress responses are equal. This is because of the variations in the animals or human's perceptions and emotional reactions about a certain phenomenon or a stressor. He thus coined two new terms of "eustress" and "distress" in early 1970s to explain if the response created by stress was originated from "negative, unpleasant stressors or positive emotions" (Selye, 1974). He was very happy about this distinction in the responses of stress being either negative or positive in nature and believed that it would largely benefit not only the research community but also the general public and included this classification in his books. In his books titled "Stress without distress" (Selye, 1974) and "Stress of my life" (Selye, 1977), he wrote that "stress is not what happens to you, but how you react to it" (Selye 1974, 1977).

2.4.1.1 Eustress

When Selye (1974) was referring to positive emotions in response to certain stressors, he was basically describing "eustress" which is also known as "good stress or positive stress". It is seen as a positive response to a particular stressor that sounds healthy to the individual, or it generates a sense of accomplishment or other positive feelings (Lazarus, 1966; Nelson & Simmons, 2003; Insel, Roth, Irwin & Burke, 2011). Due to its positive nature, it is not usually termed as a type of stressor but is believed to be perception of an individual about how he/she sees a "positive challenge as opposed to a negative event" (Le Fevre, Kolt, & Matheny, 2006). As described earlier, it is positive reaction to a stressor and this positive emotion is usually the result of one's perceptions about the control over a situation, time frame of the challenging situation, the environment in which it prevails, and interest in that challenging situation (Le Fevre et al., 2006; Insel et al., 2011). In his doctoral dissertation, Dawson (2004) described that "eustress or beneficial stress generated feelings of achievement, satisfaction, and fulfillment" (p. 28). It is quite unfortunate to find out that there has been much more attention placed on the negative aspects of the stress (distress) in the literature than there is on the good or beneficial stress (McGowan, Gardner, & Fletcher, 2006).

The whole premise, on which the construct "eustress" develops, provides useful insights on how to gain positive outcomes by a stressor in less favorable situations. It is agreed upon by many scholars in stress research that "not all stress is bad or destructive" if properly managed (Le Fevre, Matheny, & Kolt, 2003; Le Fevre et al., 2006; Niki, 2007; Gibbons, Dempster, & Moutray, 2008; Bhat, Sameer, & Ganaraja, 2011; O'Sullivan, 2011). Common predictors of eustress or good stress include a positive reaction as opposed to a stressor in form of hope, enthusiasm, and sense of meaning or fulfillment (Nelson & Cooper, 2005) and positive effects of eustress are life satisfaction and well-being of an individual (O'Sullivan, 2011).

2.4.1.2 Distress

Distress on the other hand is the "unwanted or bad stress" that has profound negative effects on the health of an individual. Dawson (2004) described "distress" in his study and found that "harmful distress or simply stress causes feelings of helplessness, frustration and disappointment" (p.28). It is a general phenomenon that when people are talking about stress, they actually mean "distress" because of its commonly misguided or misunderstood use in stress research (National Research Council (NRC), 2008). This bad stress is quite stubborn and dangerous type of stress which due to its persistence is not resolved easily via adaptation or some simple coping mechanisms. It is seen as a state in which an individual could not manage to adapt to pressures or stressors prevailing in environment and at the end this results in failure to manage stress and which in turn leads to unfit and inappropriate behaviors exhibited by that individual (Moberg, 1987; National Research Council (NRC), 1992; Carstens & Moberg, 2000; National Research Council (NRC), 2008). It is observed that the people who experiences chronic distress are usually the ones that are more prone to fall into a physical or mental health problem (National Research Council (NRC), 1992; Moberg, 2000; Sapolsky as told to Shwartz, 2007; National Research Council (NRC), 2008) namely anxiety, depression, heart disease, cancer and eventually death (Anisman, Merali, & Stead, 2008; Rogge, 2012; Russ et al., 2012). In this study, job stress was operationalized as psychological distress which in turn was measured by its indicators of anxiety and depression.

2.4.2 American Psychological Association's (APA) Types of Stress

Beside the popular view of classifying stress into categories of eustress and distress, American Psychological Association (APA, 2012) proposes three different types of stress which takes into account the factors of severity and time to explain the nature of stress. These

varying kinds of stress have their own specific symptoms, duration and treatment approaches. These types of stress are acute stress, episodic stress and chronic stress, and are discussed next.

2.4.2.1 Acute stress

This is the type of stress that almost everyone experience in their daily lives and that is why it is considered as the most frequently observed type of stress. A person experiences acute stress for a very brief period of time and that is why it does not have deteriorating effects on an individual's health like in other forms of stress (Frances, 2000; Lubit, 2011). It usually occurs when people perceive stressors in form of demands and pressures from the recent past or demands and pressures of near future. This type of stress is "thrilling and exciting in small doses, but too much is exhausting." Acute stressors may range from having problems of shifting homes frequently, children's poor performance at school, project or some other important deadlines people are often expected to meet in office, reaching late to office due to cruel traffic jam, and other issues like dealing with insurance companies after accidents. It goes on and on as there is a very large laundry list of things that go wrong in people's lives daily. Over dosage of acute stress usually results in symptoms like emotional distress resulting from combination of anger, depression and anxiety, headache, palm sweetening, chest pains, stomach problems, cold hands, muscular problems etc. but these problems can be very well handled and does not pose threats (APA, 2012).

2.4.2.2 Episodic stress

Acute stress when becomes frequent and stays for a longer period of time, it becomes episodic stress. People suffering from episodic stress are usually those who take on too much responsibility on themselves, whose lives are continuously disorganized and mismanaged and

who are always in hurry but almost always reaches late to places. They pose self-inflicted demands on themselves and consider the world a negative place where everything and everyone is against you and you have to fight back. People who have Type A personality (the ones who are more competitive, highly organized, ambitious, impatient, highly aware of time management and/or aggressive) experience this type of stress. Worrisome, always in chaos and crisis, these people overburden themselves so much that this stress leads on to negative consequences on their health. The symptoms of this type of stress involves extended over arousal, constant migraines, chest pains, heart disease, and hyper tension. As it was easy to diagnose and treat the symptoms in case of acute stress, it is rather difficult in case of episodic stress as people are often resistant to change their life styles and accept support from their peers and family, only the promise of keeping them out of pain and misery would convince them to get treated from some professionals along with proper medication (APA, 2012).

2.4.2.3 Chronic Stress

The most persistent and dangerous of all is the type of stress named chronic stress. It destroys the lives of people on a continuous basis and thus this is ingrained in people's lives so much that they consider this a part of the package they receive in the form of life. It "destroys bodies, minds and lives. It wreaks havoc through long-term attrition" (APA, para 1). This is the type of stress that people living under poverty line experience every bit of the day, the people in an unwanted or difficult marriage bears every day, and the people in a poor career experience daily. In this type of stress, people often forget about this as something of a new challenge and they lose hope and stop seeking solutions to come out of it. Sometimes, it develops over time when a person has haunting childhood and his or her belief system becomes so negative as they becomes very much pessimistic about their future and sees world as a threatening place and thus this never-ending stress creates troubles for whole life. Some

horrifying consequences involves committing suicide, involvement in theft or armed robberies, other type of violence, risk of strokes and major heart attacks. Coming out of it requires serious efforts of self-evaluation and self-improvement along with a much needed support from peers, family and society, serious life style changes, changing the belief system over time and taking medicines regularly and seeking professional help and even then, complete recovery may take time of several months to few years (APA, 2012).

2.6 Underpinning Theories for Present Study

While previously discussed models and theories on job stress provides basic understanding about theoretical development of the concept but they all are limited in many ways described before. This section discusses the supporting theories related to the variables and their relationships discussed in this study. The main variables that are used in this study are that of job demands, personal demands, job resources, personal resources, job stress and job performance. The theories that serve as the foundation of the relationships among these above mentioned variables are Conservation of Resources (COR) theory (Hobfoll, 1989) and Job Demands-Resources (JD-R) theory (Bakker & Demerouti, 2014; Bakker & Demerouti, 2017) for job demands and personal demands; their relationship with job stress and for stress-performance relationship. Moreover, the moderating role of job and personal resources in present study is also demonstrated using JD-R theory.

2.6.1 Conservation of Resources (COR) Theory

Conservation of resources (COR) theory (Hobfoll, 1989) is mainly focused on the principle of minimization of losses and maximization of gains in individual's environment. It allows the organizations to find those parts of human behavior when an employee in an organization is

threatened by loss of many kinds of resources. This theory hypothesizes that whenever a person is challenged by the loss of resources, he/she will try to find a way to minimize such losses and also to find a way to maximize the gains having the same or greater magnitude of losses experienced. It is also observed that individuals recognize the losses and gains differently through the personal perspectives but predominant themes and social customs surrounding the environment of those individuals reflects an advent of shared value of losses (Wennerberg, 2011).

On the core of this theory lies the concept of 'resources' and social scientists who proposed this theory classified these resources into four major types i.e. objects, conditions, personal attributes, and energies (Hobfoll, 1989, 1998; Johnson, Palmieri, Jackson & Hobfoll, 2007) and this classification of resources is recently authenticated by several other researchers (Deihl, 2009; Ko, 2011; Murphy, 2011). 'Objects' are the kind of resources that include physical things which may come under both necessities and luxuries. 'Conditions' are the resources which surrounds the social circumstances of an individual which include work, love life, overall family life, self-esteem, job security. On the contrary, 'personal attributes' refers to characteristics and skills of an individual while 'energies' include the time horizon, money or financial involvement, and individual's knowledge and efforts. All of these resources mentioned above are main resources that give rise to other resources that individuals may use to overcome the demands or losses.

Many researchers have studied the resource losses in relation to the job stress (Cook, 2003; Gorgievski & Hobfoll, 2008; Deihl, 2009; Olson, 2011; Vassar, 2011). Some scholars claim that job stress takes place in those circumstances where there is an evidence of: a) resource loss; b) the possibility of resource loss; and c) insufficient job resources to meet job demands (Janssen et al., 1999; Wright & Hobfoll, 2004; Hamwi et al., 2011). In short, it can be safely

assumed that job stress can be prevented and wellbeing of employees can be promoted if and only if the resources in the organizations are successfully managed (Hobfoll, 2001; Brotheridge & Lee, 2005; Beutell, 2010).

This theory posits that when an individual's personal and job resources are perceived as insufficient in meeting his/her constantly evolving and rising job demands, a phenomenon of downward spiral in loss of energy is observed by the employee (Hobfoll, 1998). This energy loss in turn leads towards emotional exhaustion, a phenomenon which occurs due to the constant depletion or draining of an individual's energies (Burke & Richardson, 1993; Buunk & Schaufeli, 1993). Additionally, this theory postulates that resource drainage may take place due to the complex nature of the interactions or contact between the employees and customers/clients (Hobfoll & Freedy, 1993; Cooper, Dewe, & O'Driscoll, 2001; Wilk & Moynihan, 2005) and calls for positive emotions as a form of remedy to solve this resource drainage (Fredrickson & Joiner, 2002; Brotheridge & Lee, 2005; Beutell, 2010).

It is argued that the resource gain is even more important when there is a situation of resource loss (Hobfoll, 2002). This notion is also validated by other influential researchers who found that job resources, in gaining motivational potential, are more important when employees are challenged with high level of job demands such as high workload, high emotional demands, and high psychological demands because these job resources are known to help achieve the work goals (Bakker & Demerouti, 2008). At the core of this theory lies the notion that resource loss contributes towards job stress and when resources are gained or are provided by the organizations, they can help mitigate the negative effects of previously experienced resource losses or in other words, they can be used to help limit the negative consequences of job stress (Hobfoll, 2001).

COR theory is both a job stress and work motivation theory which is considered quite useful and influential in organizational behavior literature (Hobfoll, 2011). It can be used to explain stress phenomenon both in healthcare settings and other type of organizations (Alvaro et al., 2010). COR theory was tested and validated in a study on two facets of work-family interference i.e. family to work conflict and family to work enrichment and their effect on job performance (Witt & Carlson, 2006).This theory has also been used in a study in which a research model based on this theory was tested to investigate the role of organizational citizenship behavior or contextual performance along with in-role or task performance (Halbesleben & Wheeler, 2011).

The validation of COR theory was also proved in a study which found that it provided the theoretical foundation for the relationship perceived human resource practices, emotional exhaustion and work related outcomes of job satisfaction and employees' job performance (Sun & Pan, 2008). In another study, COR theory was used to serve as an explanation for stressors-job performance relationship (Treadway et al., 2005).

2.6.2 Job Demands-Resources (JD-R) Theory

From the relatively recent models of workplace stress, Job Demands-Resources (JD-R) model (Demerouti et al., 2001, Bakker & Demerouti, 2007) is unquestionably the most prominent, interesting, well cited, and influential model to describe stress phenomenon at workplace, its antecedents, and its negative consequences. This overarching and heuristic model of stress can be utilized by all types of organizations to help manage and mitigate the stress and burnout of their human capital effectively and eventually improve the well-being and performance of the workforce as this model is easily applicable to all types of occupations, populations, organizations and situations (Bakker, Demerouti, & Verbeke, 2004; Llorens,

Bakker, Schaufeli, & Salanova, 2006; Bakker & Demerouti, 2007). The JD-R model develops on the premises of several previously developed models and thus the benefits of those models are combined in one model and their short comings are well taken care of in this model. The model proposes that certain important job characteristics in work environment ultimately influence the performance of the workers.

These several job characteristics are segregated into two global categories of job demands and job resources in JD-R model to see how they influence or create negative health outcomes along with other attitudinal or behavioral outcomes of employees (Llorens et al., 2006). Job demands can be defined as "those physical, psychological, social, or organizational aspects of the job that require sustained physical or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological or psychological costs" while job resources are "those physical, psychological, social, or organizational aspects of the job that (a) are functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; or (c) stimulate personal growth, learning, and development" (Demerouti et al., 2001, p.14). Any type of job characteristics that are demanding in nature can be characterized as job demands, and any numbers of job characteristics that help reduce these job demands or instill growth and development of workers can be used as job resources in this model that is why both of these job demands and resources are categorized as global in nature. This model serves as a torch bearer for the present study as well.

JD-R model argues that there can only be two types of psychological processes that usually occur as an outcome of subjective evaluation of these job demands and resources (George & Zhou, 2001). These psychological processes are termed as stress process and motivational

process of JD-R model. Stress process, as the name suggests, is related to negative health outcomes and impaired job performance, and usually occurs when a job is poorly designed where job demands in a person's job are known to result in continuous drainage of physical and psychological resources to perform the job effectively (Van den Tooren & De Jonge, 2008). Conversely, the motivational process is usually the result of job designs in which jobs have high levels of job resources in order to minimize the negative effects of job demands placed on an individual and hence these job resources are known to create motivation in turn which can be seen as high level of work engagement, low level of exhaustion and cynicism (attributes of burnout) and improved performance (Taris, Schreurs, Eikmans, & Van Riet, 2008). This study took into account the stress process as it can best explain the defined problem of job stress and poor job performance in nursing staff of private sector hospitals of Pakistan.

This model take cues from the buffering hypothesis (moderating role of positive job characteristics) developed by DCS model (Karasek, 1979) and proposes that any number of job resources may buffer the negative effects of any number of job demands in work environment and this buffering effect can be tested on various job demands and different consequences of strain (Bakker, Demorouti, & Euwema, 2005). Various previous studies have reinforced different aspects of the model in their studies. One study, for instance, found that burnout acts as a mediator or explains the negative relationship between the relationship of job demands and organizational commitment of workers in cross cultural subjects and work engagement which is the result of motivational process of the model act as a mediator in the relationship of job resources and organizational commitment (Llorens et al., 2006). It is also inferred in a study that connections between various sets of job demands and resources proved

to be useful in explaining the variance in dimensions of burnout i.e. cynicism and exhaustion (Bakker et al., 2005).

Later on, personal characteristics in the form of personal resources were also included in the model (Xanthopoulou et al., 2007). In a relatively recent review on JD-R theory, it was argued that "perhaps the most distinctive feature of the JD-R theory is its generality and flexibility, meaning that the model can be used in a broad array of situations…as regards the future of the JD-R theory, there is no reason to assume that the popularity of the revised model among practitioners and researchers will diminish in the short run". There are some issues to be addressed in the theory but "these issues and ideas are clear evidence of the flexibility of the model; clearly, it can accommodate many different ideas and findings, and may even generate new ideas and approaches. As such, it seems to serve its initial purpose of being a heuristic model very well" (Schaufeli & Taris, 2014, p. 63). These arguments were further attested in another recent critical analysis of the theory in which it was also indicated that JD-R theory is largely a heuristic framework and it can be used to apply practical interventions in the organizations. The authors have concluded their review and analysis on the model by saying that "all in all, the present overview illustrates that the JD-R theory sparked quite some research in the area of occupational health psychology and that it has the potential to continue to do so" (Taris & Schaufeli, 2016, p. 175).

In a very recent 'how to' guide related to the JD-R theory, Schaufeli (2017) explained the various applications of the model including the interventions and how work engagement can be increased and strain can be reduced in a workplace by using the JD-R theory as a framework. More specifically, Schaufeli (2017) argued that "the JD-R theory may serve as the guiding principle for an organizational development process that aims to increase work

engagement and prevent burnout. The theory is well equipped for this purpose because it is comprehensive, as it includes both a positive motivational process as well as a negative stress process. This balanced approach is an important asset to 'sell' the theory to organizations because it integrates an occupational health approach (reducing job stress and burnout) with an HR-approach (increasing work motivation and engagement). Moreover, the JD-R theory can be broadly applied in various types of organizations because a wide range of job and personal characteristics, as well as outcomes can be included. At the same time the model is also flexible, in the sense that it may be tailored to the specific setting in which it is applied" (p. 129). Earlier versions of JD-R model (Demerouti et al., 2001, Bakker & Demerouti, 2007) became quite popular in Human Resource Management and Organizational Behavior field and due to this reason, it became the first choice for many to study the concept of job stress and work engagement in context of this model. For a decade (2001-2011), it remained a job stress and burnout model but it is finally matured into a well articulated and tested theory now i.e. job demands-resources theory (Bakker & Demerouti, 2014; Bakker & Demerouti, 2017) and thus from now on instead of using the word 'model', the term job demands-resources (JD-R) theory will be used in remaining part of this thesis.

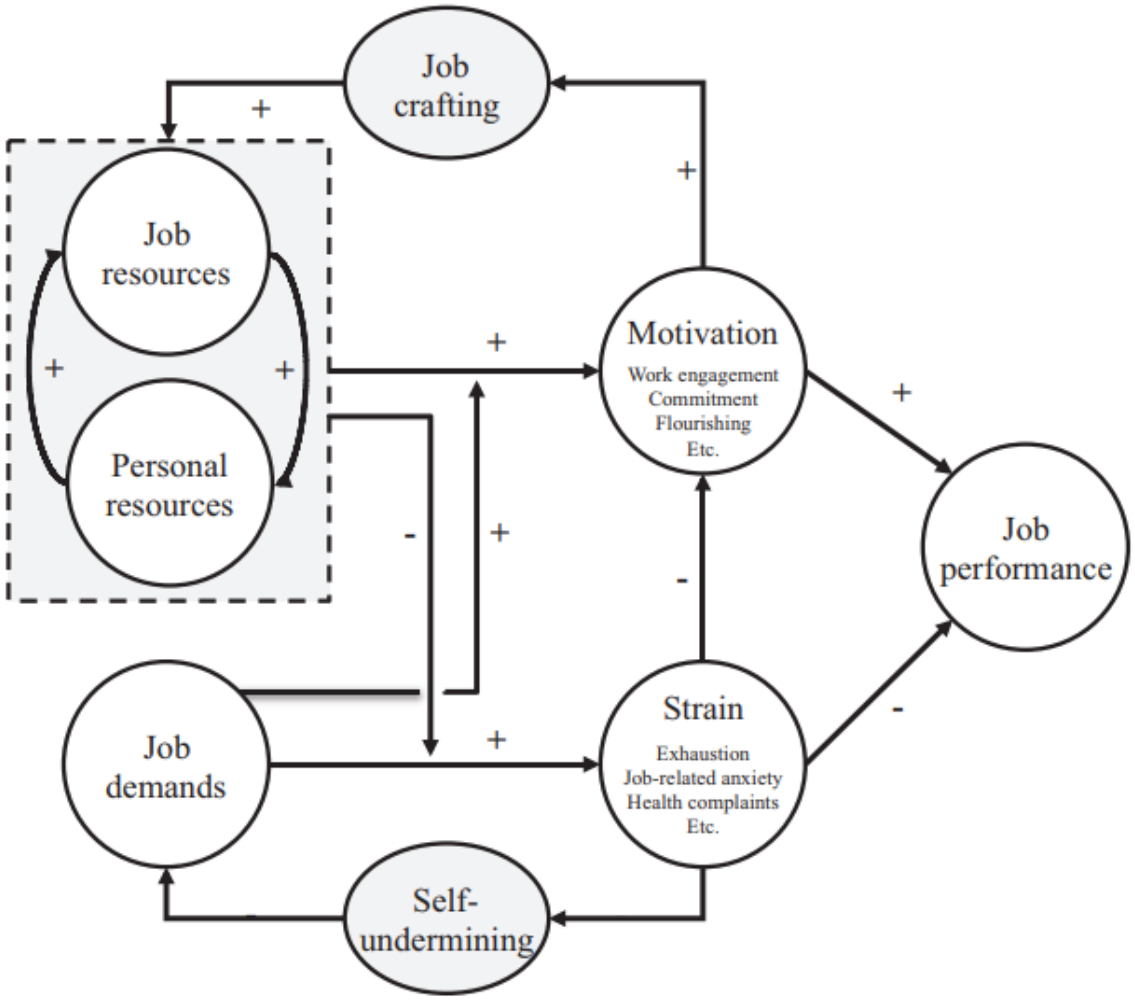


Figure 2.1: Graphical Representation of Job Demands-Resources Theory (Adopted from Bakker & Demerouti, 2017, p. 275)

Next section sheds light on various types of job demands, personal demands, job and personal resources and how they relate to job stress and performance. Job demands and resources which are used for this study along with their connection with job stress in nursing staff is described in detail in the following section. Explanation regarding job and personal resources and their moderating role in stressor-strain relationship is also outlined later in this chapter.

2.7 Job Demands

Job demands, as the name suggests, are those job characteristics in work environment which requires efforts in terms of energy, time, and mental efforts to attain some goals (Jones &

Fletcher, 1996). These job characteristics, if require extra efforts or become too much demanding to achieve goals related to one's job most definitely lead to negative health related and organizational outcomes (Schmidt & Hunter, 1998; Demerouti et al., 2001; Peeters, Montgomery, Bakker, & Schaufeli, 2005). Job demands can also be described as those components of job that constantly entail efforts as part of the job design and are associated with having some costs in return (Beutell, 2010). Demands of a job can be explained in many different ways regarding their intensity and nature. These characteristics of a job (job demands) can be physical, psychological, social, and/or organizational in nature.

Recent wave of research on job demands emphasizes the importance of viewing job demands in two different and logical categories of "challenge demands or challenge stressors" and "hindrance demands or hindrance stressors" (LePine, Podsakoff, & LePine, 2005). The first category of job demands i.e. challenge demands can be described as hurdles which needs to be cleared by employees to accomplish and to master the learning (Cavanaugh, Boswell, Roehling, & Boudreau, 2000). It also can be viewed as those stressors which are known to have the capability to instill employees with growth and development opportunities to advance in their careers and may include the stressors like work overload, time pressure, and other responsibilities that can be viewed as positive stressors by some because eventually they lead to better compensation for an employee from the employer (Cohen-Charash & Spector, 2001). This concept can also be seen as "eustress" as described by Selye (1974).

On the contrary, hindrance demands or hindrance job stressors are usually seen by employees as "unnecessarily thwarting personal growth and goal attainment" (Bakker & Sanz-Vergel, 2013, p. 398) or "unpleasant, undesirable and excessive" elements in job design which hinder employees from achieving the goals related to their work, and these job characteristics can be

role conflict, role ambiguity, and emotional demands and these types of job demands are usually seen in negative sense (Judge, Erez, & Bono, 1998; Bakker & Sanz-Vergel, 2013). If it can be recalled, this concept can also be seen as "distress" which was proposed by Selye (1974). Both of these demands or stressors can make employees feel terribly fatigued but it is not necessary that they also experience stress from these but there is a chance that they might (Bakker & Sanz-Vergel, 2013). Making people vulnerable to challenge demands may mean they require extra energy and effort but these efforts are more likely to be fairly compensated (Van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010). However, Bakker and Sanz-Vergel (2013) stated that classifying stressors into categories of challenge and hindrance demands can often be a difficult task as job demands vary from occupation to occupation and what might be hindrance demands for some may very well be challenge demands for others and it is basically an effect of eye of the beholder or in other words, dependent on employee's subjective evaluation of stressors.

In the present study, three most important job demands were selected from existing literature that are considered as particularly important types of demands in nursing profession and nursing jobs and are related to job stress and job performance of nurses. These job demands are quantitative demands, physical demands and emotional demands. These demands are not considered as challenge stressors or challenge demands for this study as the primary concern of this study is to study the problems revolving around stress process of the JD-R theory and only treat job demands as hindrance demands or hindrance job stressors. The following section discusses each of these demands in detail and entails as in how they are related to job stress and job performance of nursing staff.

2.7.1 Quantitative Job Demands

Quantitative job demands were selected for this study because of its relevance in nursing profession and because it is one of the most easily found and most researched job demand in almost every type of occupation. These job demands are perceived to be associated with challenge demands in some professions but in nursing, its positive influence on job stress and negative influence on job performance of nurses makes it a hindrance demand (Bakker & Sanz-Vergel, 2013). It can be defined as the perception of employees regarding their amount of work which they expect to complete (Katz & Kahn, 1966; Karasek, 1979; Rabinowitz & Stumpf, 1987; Ganster & Fusilier, 1989; Farber, 1991; Van Yperen & Hagedoorn, 2003; Bakker et al., 2005; Coetzer & Rothmann, 2007). It is also seen in terms of how little a time employees have to complete the tasks (time pressure) and also found to be associated with high work pace (Jones & Fletcher, 1996; Demerouti et al., 2001; Le Blanc, Bakker, Peeters, Van Heesch, & Schaufeli, 2001; Montgomery, Peeters et al., 2005; Panagopolou, & Benos, 2006; Van Emmerik, & Peeters, 2009).

Quantitative job demand is logically linked to the construct of workload. Generally, workload, as the name suggests, refers to number of tasks and number of hours required to complete these tasks in order to get paid by the employer (Jimmieson, Terry, & Callan, 2004) but more specifically, it can also be seen as time pressure which means the perceptions to the tasks to be completed in a given amount of time and when employees perceive that they have too much to do in too little time, it contributes to job stress (Frone, Yardley, & Markel, 1997). It is found that there can be two dimensions to explain the concept of quantitative job demands and these are intensity in which work pace is the main element and is also sometimes called work pressure (Kwakman, 2001) and other dimension to describe

quantitative demands is extensity whose main concern is with the total number of working hours (Kristensen, Bjorner, Christensen, & Borg, 2004).

Thus, it can be inferred that the quantitative demands are predictors of quantitative overloads which refers to as the amount of work that usually surpasses the ability of an individual to complete the given tasks or goals in a certain time period (Perrewe & Ganster, 1989). Role overload can be associated with both unwanted quantitative demands and too much qualitative demands. Excessive quantitative demands means there is "too much to perform in too little time" and unwanted "qualitative demands" refers to such conditions in which employees do not have the adequate skills set to perform their duties (Jex, 1998). Another major factor which is generally linked to high amount of work to do is the advancement in technology which does not let the employees take rest even when they are home with family and thus contributes to stress (Tse, Flin, & Mearns, 2007; Buapetch, Lagampan, Faucett, & Kalampakorn, 2008).

Jobs in healthcare organizations are the best examples of people experiencing high job demands especially in terms in work overload and time pressure. It is the nurses who experience these types of job demands more than others in healthcare sector. They are exposed to both types of quantitative demands of intensity (work pace) and extensity (number of hours on work) (Houtman & Kompier, 1995; Aiken et al., 2002; Berliner & Ginzberg, 2002; Mikkelsen, Ogaard, & Landsbergis, 2005; Damit, 2007; Peterson et al., 2008; van der Heijden, Demerouti, Bakker, & Hasselhorn, 2008; Aiken et al., 2010; Trinkoff et al., 2010; Costea, 2011). Nurses in various hospital settings shared their experiences about quantitative demands by describing as a common phenomenon in their profession because there is a general deficiency of nurses in almost every hospital and country and because of this shortage

of nursing staff; they are overloaded in their tasks and responsibilities. They also have to perform additional non-nursing tasks which can be contributed by hassles in their job design, they reportedly work even in breaks and in the absence of doctors, and they sometimes have to decide for their patients under extreme pressure which contributes to their experience of stress (Damit, 2007).

It is imperative for organizations to design jobs that focusses on reasonable amount of workload and excess to which can bring negative consequences at work, for employees' health, and for their families (Buapetch et al., 2008). For employees' health, it can lead to "burnout", negative "feelings, emotions, and perceptions" which in turn affects mental health of an employee in terms of depression and anxiety, and work overload is sometimes also associated with drug abuse and hence causing numerous physiological problems (Tse et al., 2007). In terms of family, work overload is known to affect the parents (both mothers and fathers) if an employee is single and in case he/she is married, it is known to ruin married life and parenting of children which eventually leads to divorce in so many cases. Regarding the organizations they work for, role overload is the predictor of mistakes, poor or negative attitudinal and behavioral outcomes, crippled job performance, and eventually turnover which is quite a loss for organization (Tsutsumi et al., 2008). There are many other studies which found the negative influence of role overload on nurses' job outcomes like job stress, burnout, sickness, absenteeism, reduced job performance and turnover (Lautert, 1999; Rauhala et al., 2007; Kinnunen et al., 2008).

2.7.2 Physical Job Demands

Although the shift in nature of workforce trends and work environment resulted in the reduction of agrarian and industrial (physical) hard work and the rise of knowledge-based,

tech savvy and service jobs but there are still those jobs that requires physical efforts in terms of completion of tasks and goals (Kacmar, Collins, Harris, & Judge, 2009). The concept of physical job demands revolves around the "stressors" which involves poor working conditions like "humidity", "poor lighting", "extreme temperature", and "constant noise". In other words, these job demands represent the extra amount of physical efforts involved in a job (Michiel et al., 1998; Nahrgang, Morgeson, & Hofmann, 2011) or more specifically, it can be described as those job demands that constantly involves difficult movements throughout the day i.e. "carrying or lifting objects that are heavy", "bending", "constant walking", "standing for long duration, and other aspects that requires "physical strength" (Demerouti & Geurts, 2004).

Nursing job is one of those jobs that requires physical efforts like lifting patients (Coggan, Norton, Roberts & Hope, 1994; Engels et al., 1994; Sherehiy, Karwowski, & Marek, 2004; Tooren & Jonge, 2010), working in "awkward positions", "standing for long duration" and lift "loads" (Estryn-Behar et al., 1990; Bakker et al., 2003) and because of this and many other reasons, nursing job is considered as one of the most "stressful", "physically intensive", and "demanding" jobs (Shephard, 1969; Robinson, 1986; Warr, 1994; Czaja, 1995; Kohn, Corrigan, & Donaldson, 2000; Schwerha & McMullin, 2002; Parkhouse & Gall, 2004; McFadzean & McFadzean, 2005).

The nature of nursing jobs being highly physically demanding can even lead to physiological diseases like "musculoskeletal disorders" existence of which is found more in nursing than in other jobs (Rotundo & Sackett, 2002). It is observed that nurses who were exposed to these disorders over a time period of a year are more likely to suffer from mild to severe pains in neck, shoulders, and back (Cohen-Charash & Spector, 2001). Severe consequences of these severe physical demands of nursing job include leaving the profession of nursing which in

turn creates a horrifying crisis of shortage of nursing staff in all over the globe including Middle-East, other parts of Asia like Pakistan (Karriker & Williams, 2009; Butt, Khan, Rasli & Iqbal, 2012).

2.7.3 Emotional Job Demands

Another very important yet very stressful job demand in nursing profession is that of emotional demands and it may be seen as the affective component of the job and the extent to which an employee suffers from extreme emotionally stressful situations in his or her work environment (Jones & Fletcher, 1996; Demerouti et al., 2001; Peeters et al., 2005; Montgomery et al., 2006; van Emmerik, & Peeters, 2009). These job demands can be referred to as the rate of occurrence of emotionally challenging and demanding situations one has to face during the job hours (Bakker et al., 2005) and represents those facets of job of an individual that constantly demands emotional efforts because of the fact that these jobs require constant and great deal of contact with other people such as clients or more specifically with patients (De Jonge & Dormann, 2003; Van Vegchel, De Jonge, Soderfeldt, Dormann, & Schaufeli, 2004).

If we talk about nursing job and nursing profession, we surely get to know how important these emotional demands can be for a profession like this. Nurses are often required to deal with a lot of emotional demands placed, sometimes very unrealistically, on them by the patients. It is not very uncommon in nursing job to witness a patient getting more worse than at the time of admission in hospital, they have to witness death and sometimes many deaths in a day, and their jobs also sometimes require them to inform about the death of a patient to their loved ones which sure takes a lot of courage and a great amount of emotional investment (Kwakman, 2001; Le Blanc et al., 2001).

In order to be able to best handle the emotional aspects of the job, employees working in any occupation should and must be able to completely apprehend their clients' emotions, they should manage and control their own emotions and finally take benefit from their emotions in play so as to improve their job performance (Peng, Wong, & Che, 2010). When employees experiences high levels of emotional demands, they may find it quite difficult to pay attention to their work and eventually their performance weakens seriously (Bakker et al., 2004) and these emotional stressors are for the most part common for nurses who have to have emotionally demanding interactions and deal with patients that can be children, old citizens, celebrities or even inmates from the prison (Demerouti et al., 2001; Kristensen, Borg, & Hannerz, 2002; Bakker et al., 2005; Bakker & Demerouti, 2007).

The emotional demands are usually found in service jobs like nursing and are found to be linked to certain negative health outcomes like burnout and strain. In terms of burnout, it is seen as an outcome of emotionally stressful demands placed on employees by clients and are found to be associated with outcomes like emotional exhaustion, depersonalization, and lack of personal accomplishment (Bakker et al., 2005; Karriker & Williams, 2009). Nursing job is full of such emotional demands placed on them by their patients and/or their patients' families and friends and thus leads towards feelings of exhaustion and other negative feelings such cold-hearted feelings toward their job and goals (Bakker et al., 2005) and thus exhaustion in turn leads to emotional strain (Rijk, Blanc, Schaufeli, & Jonge, 1998; Bourbonnais, Comeau, & Vezina, 1999; Bakker, Killmer, Siegrist & Schaufeli, 2000; Aiken et al., 2001; Le Blanc et al., 2001; Goodin, 2003; van der Heijden et al., 2008). Due to these threatening consequences of job burnout and job stress, nurses are often found to be sleep deprived and thus it is not easy for them to recover from these emotionally stressful demands experienced in their jobs which not only affects their health (Van der Heijden et al., 2008) but also their job

performance and ability to care is adversely affected by these demands (Le Blanc et al., 2001).

2.8 Job Resources

Opposite to the concept of job demands, there lies a conception to balance or to mitigate the negative effects of those job demands with job resources which are generally described as "those physical, psychological, social, or organizational aspects of the job that (a) are functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; or (c) stimulate personal growth, learning, and development" (Demerouti et al., 2001, p. 14). It may also be operationalized as a "reservoir" full of energy that co-exists with job demands and can be used whenever an employee feel he or she has to deal with high job demands (Hobfoll, 1989, 2002; De Jonge & Dormann, 2006).

Resources at workplace can be segregated in many ways and at many levels of an organization and job. This segregation may include resources at organizational level which means the resources which are provided by organizations to its employees like salary, growth or advancement prospects, or job security. They might be resources that are provided by social relationships at workplace like both "supervisor and coworker support", and/or team support. They can also be classified by the organization of work activities like "role clarity" and "participation in decision making" and finally, they can be resources provided at the task or job level like "task identity, task variety, task significance, task autonomy, or performance feedback" (Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003). The later mentioned classification of resources at task level was basically proposed in a popular and well researched "job characteristics model" of stress by Hackman and Oldham (1980). In their proposed model, they have come to a conclusion that these particular job characteristics are

motivational in nature as they contribute to meaningfulness of individual's work, processes and generate certain positive effects, and give information to employees about their exact and actual performance against the set performance standards (Hackman & Oldham, 1980).

As described earlier, JD-R theory has two processes associated with it. The second process is relevant to job resources which are motivational in nature and scarcity of these job resources may result in poor work motivation and crippled job performance which in turn leads towards "disengagement from work" which can also be referred to as "cynicism", and also towards sudden reduction in "professional efficacy" (Bakker et al., 2003). They further claimed that resources can be further classified into extrinsic and intrinsic resources where extrinsic resources to the job may include "financial rewards, social support, and/or supervisor's coaching or training" and intrinsic to the job resources refer to those resources which are engrained in tasks and includes resources like "autonomy, feedback and personal development". Extrinsic resources are derived from Herzberg theory (1966) in which he described them as "hygiene factors" whereas the intrinsic resources are derived from various approaches like job characteristics model of Hackman and Oldham (1980) in which he named them as various "job characteristics". Other approaches may include sociotechnical system theory in which they are described as "psychological task requirements", Turner and Lawrence's model (1965) in which they labeled these resources as "requisite task attributes", and from Herzberg two-factor theory where he categorized these intrinsic factors as "motivators" (See Steers & Mowday, 1977 for detailed discussion on these factors and various approaches that described them). In present study, job resource of social support was studied specially in relation to its moderating effects in the relationship between job demands and job stress.

2.8.1 Social Support

There is a growing evidence from numerous previous studies that indicate that people who have greater support from family, friends in their daily private life and support from supervisors and coworkers in their work life have a less chance of having psychological and physical health issues and are more likely to perform well on their jobs (Norris et al., 2002; Lin, Probst & Hsu, 2010; Wills & Fcgan, 2012). Social support could buffer or weakens the adverse functional and emotional effects and also improve the ability to cope better in order to improve physical and psychological health (Cohen & Wills, 1985; Bakker et al., 2005). Social support literature in Organizational Behavior focusses on both the support from supervisors and coworkers and in this study, both perceived supervisors' and coworkers' support are selected under the concept of overall social support and conceptualized it as a job resource as it is more important than many other job resources present in working environment because employees spend most of their time at job in teams and in situations where coworkers' support matters a lot. Moreover, if they could not get the required help from their colleagues on a difficult or challenging task, the supervisor support is instrumental in this case and many others. Simply put, both supervisors and coworkers should be able to help employees throughout the day or whenever a stressful situation occurs.

Supervisor support can be defined as employees' perceptions regarding the extent to which their immediate supervisors provide them with the required support at work, value their contributions and care about their well-being (Eisenberger et al., 1986; Kottke & Sharafinski, 1988). It is recently argued that "the supervisor support is particularly important because supervisors are formally responsible for monitoring the performance of employees, are involved in decisions regarding pay and promotions that affect their employees and are

increasingly made accountable for reducing turnover in their teams" (Mohamed & Ali, 2016, p. 435). In another study, it was found that supervisor has a positive effect on job satisfaction, sense of solidarity and perceived sense of advancement (Armendariz, 2012). Findings of a study on nursing staff revealed that higher levels of supervisor support was associated with reduced job stress (McGilton et al., 2007). Similarly, in a recent study on aging workforce in United States, it was found that supervisor support had a significant, direct and negative relationship with job stress (Yang et al., 2016). Moreover, supervisor support was found to improve the job performance of employees (Azman et al. 2009). In his doctoral study, Vann (2017) argued that "improving employees' perceptions of supervisor support to generate high levels of employee job satisfaction could affect behavioral social change to enhance the health and wellbeing of employees and the wealth and sustainability" of organizations.

Coworkers' support has been defined by various researchers in many ways. For instance, Ellis and Miller (1994) defined it as "the degree to which coworkers provide emotional, instrumental, and informational support to the employees". A similar definition was offered by Tate (1996) who also believed that coworkers' support is the affectionate, contributory, and informational support which is usually exchanged between employees of same organization. It can also be seen as the "degree to which employees have close friends in their immediate work unit" (Ko, Price, & Mueller, 1997, p. 963). Another way to define coworker support is to see it as "the extent to which employees believe their coworkers provide them with work-related assistance to aid them in carrying out their service-related duties" (Susskind, Kacmer, & Borchgrevink, 2007, p. 372).

Coworkers' support is considered important because it has the capability of making workplace a desirable or unfavorable place to spend half-a-day, every day. Positive social

relationships inside the workplace are related to positive work-related outcomes like improved job satisfaction, enhanced productivity, well-being, and work engagement. Coworkers' support is more important than supervisor support as it is the coworkers with which employees have most interactions and spend most of the day. Besides having positive work-related outcomes, coworkers' support is also known to be associated with positive physical and mental health (Kaul & Lakey, 2003).

While there is an impressive literature supporting that coworkers' support is linked to positive outcomes (Babins & Boles, 1996) however, it is also not very uncommon that coworkers sometimes exhibit negative behaviors like being political or exhibiting self-promoting interests, leg pulling and other behaviors which have negative consequences like job stress. Sometimes it is perceived that if an individual is seeking support from his or her coworker, he or she is considered as incompetent because coworkers usually enjoy a similar status or are equal in organizations, thus they sometimes adopt negative ways to promote themselves and degrade others (Ng & Sorenson, 2008). It is observed that coworkers' support is particularly important when another employee is feeling emotionally exhausted- a dimension of burnout- which eventually results in job stress (Albar-Marin & Garcia-Ramirez, 2005).

Lindorff (2001) found in his study that support which is gained from coworkers is much more relevant and apposite for solving work related problems and reducing work related stress than the support gained from outside the work such as family and friends of that particular employee. A good amount of the social support literature claims that coworkers support can help reduce job stress (McIntosh, 1991; Paoline III, Lambert & Hogan, 2006) and is associated with improved performance (Susskind et al., 2007; Turner et al., 2012). Moreover, organizations which instill a culture and environment of coworker support are far more likely to gain the benefit of superior organizational performance (Joiner, 2007).

2.9 Personal Resources

The JD-R theory lacked the much needed role of individual differences before a study in which it was stated that in spite of the empirical evidences supporting the claims of the JD-R theory. The theory, as described earlier, was primarily based on premises of DCS model and thus only caters the job characteristics that prevails in working environment of employees and hence there was a dire need of enhancing the research on the theory by inclusion of individual differences variables which were termed as personal resources in their study (Xanthopoulouet al., 2007). The personal resources in their study comprised of factors that give rise to "resiliency" and these factors were general self-efficacy, organization based self-esteem (OBSE) and optimism.

Xanthopoulou et al. (2007) believed that these personal resources can act as mediators or moderators in relationship of environmental factors of work and their consequences. They developed these hypotheses based on previous studies which have found the moderating role of these factors on various outcomes (e.g. Van Yperen & Snijders, 2000; Mäkikangas & Kinnunen, 2003; Pierce & Gardner, 2004). However, it was quite unfortunate that they did not find any moderating influence of these variables on outcome variables but on the other hand, their hypothesis of mediation got substantiated in their study in which they found that personal resources successfully mediated the connection between job resources and outcomes like work engagement.

In their study, Tremblay and Messervey (2011, p. 2) stated that "a closer view of the research on personal resources in the organizational literature, however, yields conflicting evidence regarding the role of personal resources as moderators" because some studies successfully found the moderating effect of personal resources and some did not. So Tremblay and

Messervey (2011) made another attempt in their study to provide evidence of the buffering effect of personal resources in which compassion satisfaction was operationalized as a specific measure for personal resource. They investigated the buffering effect of compassion satisfaction between the relationship of four job demands (role overload, role insufficiency, role ambiguity and role conflict) and job strain (anxiety and depression). The results of their study only had shown a partial moderation such that only one job demand i.e. role overload's effect on job strain was considerably reduced when compassion satisfaction was high. The relationships between other three measures of job demands and job strain were not offset by personal resource of compassion satisfaction.

Despite the inconclusive and conflicting evidence of moderating role of personal resources in stress process of JD-R theory, Demerouti and Bakker (2011, p. 3) suggested that "although we do have evidence that personal resources can be conceptualized as mediator or outcome in the JD-R theory, we expect that they might have an even more complex role in modifying the impact of the work environment into positive or negative outcomes." It is one of the core propositions of JD-R theory that personal resources play a role similar to that of job resources (Xanthopoulo et al., 2009; Bakker & Demerouti, 2017) and thus have a direct and positive effect on work engagement but in a recent overview on JD-R theory, it was proposed that "personal resources are expected to buffer the undesirable impact of job demands on strain, and boost the desirable impact of (challenge) job demands on motivation. Research has provided only limited support for this proposition, which means that more research is needed to test the Job Demands and Personal Resources interaction" (Bakker & Demerouti, 2017, p. 3).

In the present study, the researcher aims to address the persistent conflicting evidence of moderating role of personal resources in stressors-strain relationship i.e. between the

relationship of job demands and job stress. This study conceptualized self-compassion as a personal resource and its moderating role was investigated in the relationship between job demands and job stress. Because self-compassion is associated with the positive self-belief and resilience, it was operationalized as a personal resource. To the best of researcher's knowledge, this is the first ever study to incorporate self-compassion in JD-R theory. It will be a theoretical contribution and extension of JD-R theory to examine the moderating role of self-compassion in stress process. Next section defines the concept of self-compassion, demonstrates how it can be conceptualized as a personal resource in the present study and how it is relevant to be studied in nursing context, and also illustrate how it can be measured. The moderating role of self-compassion in relationship between job demands and job stress (anxiety and depression) is described later in this chapter (See section 2.13.8).

2.9.1 Self-Compassion

> *For someone to develop genuine compassion towards others, first he or she must have a basis upon which to cultivate compassion, and that basis is the ability to connect to one's own feelings and to care for one's own welfare. Caring for others requires caring for oneself (Dalai Lama, 2003, p. 125).*
>
> *If you want others to be happy, practice compassion. If you want to be happy, practice compassion (Dalai Lama XIV, 2009, The Art of Happiness).*

It has been noted that "although self-compassion as a motivating factor in human behavior is a relatively new area of research in the social sciences, Buddhist philosophy has explored the concept of self-compassion for centuries" (Reyes, 2012, p. 82). Building on the work of

numerous Buddhist scholars (e.g., Bennett-Goleman, 2001; Brach, 2003; Goldstein & Kornfield, 1987; Salzberg, 1997), Neff (2003b, p. 85) has defined self-compassion as "being composed of three main components: (a) self-kindness—being kind and understanding toward oneself in instances of pain or failure rather than being harshly self-critical, (b) common humanity—perceiving one's experiences as part of the larger human experience rather than seeing them as separating and isolating, and (c) mindfulness—holding painful thoughts and feelings in balanced awareness rather than over-identifying with them."

It has been further elaborated that self-compassion "involves being troubled by and open to one's own suffering, not avoiding or disconnecting from it, generating the desire to alleviate one's suffering and to heal oneself with kindness" and that it "entails seeing one's own experience in light of the common human experience, acknowledging that suffering, failure, and inadequacies are part of the human condition, and that all people—oneself included—are worthy of compassion" (Neff, 2003b, p. 87). In his book, Germer (2009, p. 33) stated that self-compassion is ''simply giving the same kindness to ourselves that we would give to others.'' In this study, self-compassion was conceptualized as a personal resource in JD-R theory.

2.9.1.1 Self-compassion as a Personal Resource

It has been argued that "being compassionate to oneself is associated with emotional resilience and psychological well-being" (Warren, Smeets & Neff, 2016, p. 19). It has also been observed that self-compassion as a construct offers a distinct and alternative model for evaluating the positive view of the self and it also promotes resilience and well-being (Neff, 2003a; Neff & McGehee, 2010). Some of the reviews and meta-analysis on the concept of self-compassion also found self-compassion to be a robust resilient factor when an individual faces personal inadequacies and stressful situations (e.g., Barnard & Curry, 2011; MacBeth &

Gumley, 2012). By definition, personal resources are the factors associated with resilience and serve as protective factors in helping to fight the stress (Hobfoll et al., 2003). It is because of its association with resilience to withstand the harsh and stressful experiences (see Neff, 2009, for a review), self-compassion is conceptualized as a personal resource in the present study.

2.9.1.2 Self-compassion in Nursing

One of the core motivating factors for the selection of nursing profession is that of compassion for others. It would not be wrong to say that nursing care is largely identical to the concept of compassion. But the phenomenon to extend this care and compassion to nurses themselves has largely been ignored by researchers in the past and "there is a dearth of literature on self-care for nurses. Research on compassionate care is building momentum, but to date few studies have focused on nurses' self-compassion" (Mills, Wand & Fraser, 2015, p. 791). Present study contributes towards better understanding of self-compassion in nursing profession by studying its buffering effect on stressors-strain relationship in the context of JD-R theory.

Dutton et al. (2008, p. 110) argued that ''as human institutions, organizations are sites that inevitably harbor the emotional pain and suffering of their individual members.'' Metaphorically, it was suggested that human heart first needs to pump blood for itself (Shapiro & Carlson, 2009) and this fact is further attested and supported by theory of human caring (Watson, 2008) which advocates that nurses' self-care and care for others is naturally interdependent instead of being mutually exclusive to each other. By caring for themselves, nurses can better be able to practice their role of caring for their patients and for health promotion in general (McElligott et al., 2009; Blake & Harrison, 2013). The compassionate

care for patients has become an important issue because nurses' well-being and quality of care they provide to patients are very much interdependent (Maben et al., 2012). Furthermore, Richards (2013) claimed that self-care is crucial and mutually beneficial for both nurses and patients under their care.

2.9.1.3 Measurement of self-compassion

Many researchers in the past have demonstrated that the construct of self-compassion is related to mental health in many ways (Neff, 2009). Mostly these studies were conducted by using self-compassion scale (Neff, 2003a). Other methods such as mood inductions and therapeutic interventions to assess the relationship between self-compassion and well-being were also proposed and used in some studies (e.g., Gilbert & Proctor, 2006; Leary, Tate, Adams, Allen, & Hancock, 2007). However, self-compassion scale developed by Kristin D. Neff remains popular and offer more insights into the phenomenon of self-compassion.

Neff (2003a) developed and validated the Self-Compassion Scale (SCS) to measure six inter-correlated but distinct factors by using 26 items. It is important to note here that self-compassion has three main components as stated earlier and SCS was designed to measure these three components of self-compassion but there were total six different subscales to obtain a better and comprehensive picture of the construct of self-compassion. These subscales were that of self-kindness versus self-judgment, common humanity versus isolation, and mindfulness versus over-identification. Later, by summing the score of these subscales, a total store could be obtained which represent any participant's overall level of self-compassion. Neff (2003a) argued that the usage of the subscales as measures for the components of self-compassion was theoretically motivated because these components are important in constituting the whole construct but the subscales were expected to be highly correlated. Neff (2003a, p. 226) further argued that the primary purpose of the scale was to

measure self-compassion "as a single overarching construct". Neff (2003a) found that "a single higher-order factor of self-compassion explained the inter-correlations between factors. In other words, self-compassion appears to be an overarching factor emerging out of the combination of subscale components rather than an underlying factor". Findings also revealed that SCS exhibits good construct validity and an excellent internal consistency of 0.92.

However, after quite a while, a short form of self-compassion scale (SCS-SF) comprising of 12 items was developed and validated in two Dutch and one English sample (Raes, Pommier, Neff & Van Gucht, 2011). This short scale of self-compassion proved to possess a good internal consistency of 0.86 in all of these three samples and also found to have an almost perfect correlation ($r \geq 0.97$ in all three samples) with the long version of self-compassion scale comprising of 26 items. Findings revealed the SCS-SF maintained the same six factor structure as can be found in SCS (long form) and also supported a single overarching factor of self-compassion as in the long form of the scale. In present study, this SCS-SF was used because it "represents a reliable and valid alternative to the long-form SCS, especially when looking at overall self-compassion scores. The 12-item Self-Compassion Scale–Short Form (SCS–SF) in Dutch and English offers an economical alternative to the long Self-Compassion Scale (SCS) to measure self-compassion. Although the original long form of the SCS is reduced to half, the SCS–SF is reliable and has the same factorial structure as the original scale" (Raes et al., 2011, p. 250).

2.10 Personal Demands

The category of personal characteristics which have received much attention in the realm of JD-R research is that of personal resources which are said to be positive beliefs one has of himself and his environment and the beliefs that the person can actually control and impact

the environment around him successfully. Up until now, very little attention has been paid to the other category of personal characteristics i.e. personal demands in JD-R theory. The question that whether we can also integrate these personal characteristics namely personal demands in JD-R theory and to study if they can play a role similar to that of job demands in creating stressful environment and in crippling the job performance of employees is largely unanswered. However, it was right after the inclusion of personal resources in JD-R theory, Prieto et al. (2008, p. 359) first highlighted the need of studying this other category of personal characteristics in JD-R theory by suggesting that "it could be interesting to consider personal demands as predictors of burnout and engagement. For example, personality traits like perfectionism and emotional instability, and goal settings and levels of expectations, could be relevant personal demands to be studied in future research on this intriguing topic".

After almost four years, Guglielmi et al. (2012) conducted first ever study to examine personal demands in JD-R theory by acting on the suggestion of Prieto and colleagues. They specifically selected workaholism as a personal demand to investigate if it can initiate the stress process of JD-R theory. They have chosen workaholism as a personal demand because of the reason that "workaholism seems to act as an individual risk factor that contributes, independently from job context, to burnout and well-being" (Schaufeli et al., 2009, p. 165). Their study was the first one to find that personal demands can act as an initiator of stress process of JD-R theory. The relationship of workaholism and job burnout was partially mediated by job demands in this study. However, in their study, Guglielmi et al. (2012) have only selected one personal resource i.e. self-efficacy and one personal demand i.e. workaholism but they have suggested that "future studies should contemplate not only self-efficacy and workaholism but also other personal resources (e.g. optimism, ability to recover,

and emotional competence) as well as individual demands (e.g. perfectionism and emotional instability)" (p. 385-386).

Contrary to the work of Guglielmi and colleagues, Barbier et al. (2013) investigated the role of personal demands in motivational process of JD-R theory but there was one similarity i.e. they have also selected only one personal demand in their study i.e. performance expectations and tried to answer the question whether employees' own performance expectations act as a personal demand and whether these expectations are related to employees' level of work engagement over time. Barbier et al. (2013, p. 4) have argued that "performance expectations act as a kind of internal challenge stressor that will lead workers to increase effort at work in order to meet those expectations. The way we define personal demands and operationalize it in this study as performance expectations comprises an aspect of a motivational and self-enhancing role. However, we consider this a demand, in that such expectations are related with effort and costs in order to meet those personal demands". This is in line with the previous studies on differentiating job demands in which it was suggested that job demands can be categorized as hindrance job demands or challenge job demands (for review, see Lepine, Podsakoff & Lepine, 2005; Crawford, Lepine & Rich, 2010). Barbier et al. (2013, p. 11) suggested that "future research is needed to clarify the concept of personal demands. In this article, we define personal demands as the requirements that individuals set for their own performance and behavior that force them to invest effort and are therefore associated with physical and psychological costs. We have used performance expectations as a specific measure of personal demands. It would be interesting to investigate what other variables could be operationalized as personal demands".

Earlier research on influential job stress models like that of Effort-Reward Imbalance model (ERI; Siergist, 1996) model also proposed that personal characteristics such as

overcommitment may make employees more susceptible to experience negative effect of job demands or alternatively hinder the employees to benefit from the positive facets of the job and working environment (for review, see Van Vegchel, De Jonge, Bosma, & Schaufeli, 2005). Relatively recent research appears to point out to these negative personal characteristics in relation to JD-R theory (Van den Broeck et al., 2013) in which it is found that employees who have deficits in their cognitive control system are more prone to experience higher levels of burnout when they are facing emotional dissonance (Diestel & Schmidt, 2011).

In a recent review of JD-R theory, it was suggested that "personal characteristics putting an additional burden on employees' might be labeled as personal demands, and the JD-R theory can constitute a valuable framework to further examine their impact on job design, burnout, and work engagement. The focus on personal demands might also have practical relevance, as individuals holding personal demands might be particularly vulnerable to develop burnout and a lack of work engagement" (Van den Broeck et al., 2013, p. 98). In another recent critical review of JD-R theory, Schaufeli and Taris (2014, p. 57) suggested that "so far only personal resources have been integrated into the JD-R theory, but personal vulnerability factors (such as neuroticism, workaholism, and pessimism) could also be included." Finally, in a very recent review of JD-R theory, Bakker and Demerouti (2017, p. 279) suggested that "next to personal resources, JD-R theory can be expanded to include personal demands". The authors also pointed out about the use of workaholism and performance expectations as personal demands in previous studies mentioned earlier and suggested that "depending on the nature of the personal demand, personal demands may be involved in the stress process (like workaholism) or in the motivational process (like performance expectations) proposed by JD-R theory".

Based on the above discussion and suggestions from the leading researchers in JD-R theory research, this study would try to introduce two new personal demands in the health-impairment process of JD-R theory i.e. neuroticism and self-criticism. Because of their nature and association with additional efforts and psychological costs, both of these personal characteristics are operationalized as personal demands in present study As a theoretical extension and contribution to the existing Body of Knowledge (BOK) on JD-R theory, the present study would investigate the direct relationship of these personal demands with job stress as operationalized by anxiety and depression so that it could be examined and clarified if personal demands can play a role very similar to that of job demands as predictors of job stress. Previously, only job demands were considered as the major predictors of strain in JD-R theory but present study placed personal demands next to job demands to examine their relationship with job stress. This study attempts to clarify the concept of personal demands as suggested by Barbier et al. (2013) and enhance our understanding of negative personal characteristics and their role in employees' well-being. To the best of researcher's knowledge, this is the first ever study to incorporate neuroticism and self-criticism as personal demands in JD-R theory.

2.10.1 Neuroticism

Neuroticism can be defined as the propensity to encounter "negative affect" and "affective instability" in the forms of vulnerability, anger and hostility, impulsive behavior, anxiety, and depression (Chapman, Duberstein, & Lyness, 2007; Chapman et al. 2007). After it is being proposed by Eysenck (Eysenck & Eysenck, 1975), neuroticism is considered as a robust measure of emotional stability, both longitudinally and culturally, and is engrained in almost all the models of personality afterwards. Evidence exists for substantial overlap of various

indicators of neuroticism by using different measures (McCrae & Costa, 1985; Zuckerman et al., 1993; Aluja et al., 2002) and it is noted that this trait remains stable over the period of many years (Wray et al., 2007). It is present in almost all kinds of diverse social strata and different cultures (Eaves et al., 1989) and even more interestingly, it may even be found in the behavior of other organisms which are less complex than human beings (Gosling, 2001; Gosling et al., 2003).

2.10.1.1 Neuroticism as a Vulnerability Factor

There is ample empirical evidence available in adult samples in which it was investigated that whether neuroticism serves as a vulnerability factor in development of anxiety and depression symptoms. For example, it was found in many previous cross-sectional studies that higher levels of neuroticism were positively related to depression (Watson, Clark, & Carey, 1988; Saklofske, Kelly, & Janzen, 1995; Muris, Roelofs, Rassin, Franken, & Mayer, 2005; Chioqueta & Stiles, 2005; Clark et al., 1994) and anxiety symptoms (Clark et al., 1994; Watson et al., 1988; Muris et al., 2005). Longitudinal studies also found great support for such relationships between neuroticism and both anxiety (Khan, Jacobson, Gardner, Prescott, & Kendler, 2005) and depression (Kendler, Gatz, Gardner, & Pedersen, 2006). Moreover, other longitudinal studies also found that the support for negative life events acting as moderator in neuroticism and both anxiety and depression over time in people experiences high levels of job stress (Middeldorp, Cath, Beem, Willemsen & Boomsma, 2008).

If there is one personality trait that is most commonly connected and relevant to making individuals vulnerable to experience psychological distress in form of anxiety and depression, it is neuroticism (Akiskal, Hirschfeld, & Yerevanian, 1983; Widiger & Trull, 1992). In previous research studies, a great amount of support exists to validate the claim that

neuroticism is significantly and positively related to the indicators of anxiety and depression both in clinical and non-clinical populations (Duggan, Lee, & Murray, 1990; Boyce, Parker, Barnett, Cooney, & Smith, 1991; Kendler, Kessler, Neale, Heath, & Eaves, 1993; Saklofske, Kelly, & Janzen, 1995, Surtees & Wainwright, 1996; Roberts & Gotlib, 1997; Ormel, Oldehinkel, & Brilman, 2001; Muris, Roelofs, Rassin, Franken, & Mayer, 2005). Moreover, many researchers in the past also focused on investigating other processes that may better explain the relationship between neuroticism and psychological distress i.e. anxiety and depression. For example, neuroticism is considered as a predictor of negative biases in attention (Derryberry & Reed, 1994), memory loss (Martin, 1985) and both cognitive and behavioral rumination which in turn are all related to symptoms of depression and anxiety (Roberts, Gilboa, & Gotlib, 1998). It is because of its nature and association with vulnerability to anxiety and depression (which is explained later in this chapter), neuroticism is considered as a personal demand in this study.

2.10.2 Self-Criticism

In his book on self-criticism, Shahar (2015) defined self-criticism as a “personality trait characterized as the tendency to set unrealistically high standards for one's self and an expression of hostility and derogation when these high standards are, inevitably, not met," He further explained that "this type of behavior leaves people depressed, anxious, suffering from other symptoms, and potentially suicidal" (Shahar, 2015). Moreover, he intricately described all the mechanisms through which self-criticism can instill vulnerability towards psychopathology. It was explored that self-criticism pushes individuals to indulge in more stressful situations including breaking up of relationships, professional setbacks, and rejection

by others around them in order to escape from engaging themselves in more positive life events because they perceive themselves not very deserving of such events (Shahar, 2015).

Self-criticism entails “constant and harsh self-scrutiny and evaluation and a chronic fear of being disapproved of or criticized, and of losing the approval and acceptance of significant others” (Blatt & Homann, 1992, p. 528). Zuroff and Fitzpatrick (1995) explored that ‘‘self-critics are ambivalent about interpersonal relationships because while they desire approval, respect, and admiration, they fear disapproval and loss of control and autonomy’’ (p. 254). Self-criticism can be defined as “a response style to perceived failure that is characterized by negative self-judgement and self-evaluation” (Gilbert, Clarke, Hempel, Miles, & Irons, 2004).

The trait is known to be related to negative feelings and emotions particularly in the forms of self-contempt and disgust. It was also found that the severity of these negative emotions and feelings towards oneself; and the lack of one’s ability to effectively cope with these negative emotions endanger the people scoring high on self-criticism trait to develop and sustain the long lasting episodes of depression (Gilbert et al., 2004). Similarly in a previous study, self-criticism has been linked to depression in both healthy and clinical populations (Blatt, 2004). Moreover, it is recognized as a vulnerability factor for depressive symptoms (Brewin & Firth-Cozens, 1997) and for recurrence of depression over time (Zuroff, Santor, & Mongrain, 2005). Higher habitual self-criticism was found to be related to history of depressive episodes in another study (Mongrain & Leather, 2006). Interestingly, it was discovered in a sample of students recovered from depression that their scores on self-blame were not significantly higher than that of a control group of students which were never depressed (Ehring, Fischer, Schnülle, Bösterling, & Tuschen-Caffier, 2008).

Self-criticism trait usually activates when individuals encounter disappointments or failures in important and complex life or job situations which triggers an automatic response in form of punitive self-blame, self-attacks, hate, disgust, and self-directed anger (Gilbert, 2000; Gilbert et al., 2004; Gilbert & Irons, 2009). The trait of self-criticism can be characterized by different functions and types in which individuals may have a feeling of being defeated and/or being inadequate i.e. inadequate self, or they may have feelings of hate, anger and disgust towards themselves i.e. hated self, or having a desire to torture or persecute the self (self-persecution) (Gilbert et al., 2004). This last type of self-criticism is way more dangerous and unhealthy as it is associated with self-harm, suicidal attempts, and to eliminate the self because of perceiving it worthless, bad, or defective (Gilbert, 2000; Gilbert et al., 2004; Gilbert & Irons 2009; Castilho, Pinto-Gouveia & Duarte, 2015). In another study conducted in a mixed clinical adult sample, it was found that this last form or function of self-criticism i.e. self-persecution was related to negative consequences like self-harm, anxiety, and depression (Gilbert et al., 2010).

The unhealthy effect of this internal mechanism of wanting to hate, torture, and feeling of inadequacy for oneself is not only a leading vulnerability factor for psychopathology but also inhibits the generation of positive feelings like self-care, warmth and self-soothing (Gilbert, 2000; Gilbert & Irons, 2009). In addition to that, people reporting high on self-shame and self-criticism trait are more likely to report negative perceptions about compassion which give rise to struggle, fears, and escaping the moments or encounter with compassionate feelings and behaviors towards themselves (Gilbert, 2009; Gilbert et al., 2011; Gilbert & Mascaro, 2017).

2.10.2.1 Self-Criticism as a Vulnerability Factor

Another important personal vulnerability factor or personal demand to study in context of developing psychological distress i.e. anxiety and depression is that of another personality trait named as self-criticism. Many researchers have described self-criticism as a personality or personal vulnerability factor because of the reason that it can give rise to and help to sustain numerous psychological problems such as depression (Blatt & Zuroff, 1992; Blatt, 2004; Gilbert & Irons, 2005). As the name suggests, self-critical people often perceive negatively about themselves and the image they have in other people minds and thus they engage in a process of self-shaming that revolves around self-persecutory attitude, bitter self-blaming towards them, and they often use defensive submissive approaches (Gilbert, 1998). This whole internalized mechanism of self-shaming reaction involves a negative and internal hostile self-to-self association often known as self-criticism (Gilbert, 1998, 2000; Gilbert et al., 2004; Gilbert & Irons, 2009).

Blatt (2004) found that when individuals could not achieve their goals, they usually become very self-critical and tend to get the feelings of guilt, failure or worthlessness. In a relatively recent research, it was pointed out that people with higher levels of self-criticism or dependence are more vulnerable to experience depressive episodes even after controlling for factors like their previous depression, neuroticism, and other mental health issues (Mongrain & Leather, 2006). In addition to that, it was found in another study that excessive self-criticism and dependence were both predictors of negative or worse outcomes associated with treatment (Marshall, Zuroff, McBride & Bagby, 2008).

Self-criticism has been conceptualized as an important individual vulnerability factor in developing major depressive disorder (MDD). On the contrary, self-compassion has been

known as a resilience or protective factor that inhibits the development and sustainability of long term episodes of depression. Moreover, findings revealed that higher levels of self-criticism and lower level of self-compassion have been reported by both currently and remitted depressed people than those people who were never depressed. It was also found that individual differences in self-criticism and self-compassion were strongly associated to depression even after controlling for additional potential correlates of MDD such as "rumination, perfectionist beliefs and cognitions, and an overall adaptive emotion regulation". These findings explicitly suggest that self-criticism in higher levels and self-compassion in lower levels may make individuals vulnerable in experiencing chronic or repeated depressive episodes throughout their lives (Ehret, Joormann & Berking, 2015). Because of the proven fact that self-criticism is a personal vulnerability factor in making employees feel more stressed (anxious and depressed), this study has conceptualized self-criticism as a personal demand. The detailed analysis on the relationship between the relationship self-criticism and job stress (anxiety and depression) is highlighted later in this chapter.

2.11 Job Stress in Nursing

As stated earlier that nursing is considered as one of the most stressful professions and this problems exists throughout the world in general and developing countries in particular. Petterson et al. (1995) conducted a study on a large sample taking into account the nurses in Sweden and found that 80% of all the nurses suffered from either high or very high job stress or job-related strain. Another study which was conducted in United Kingdom's healthcare setting found that nurses experience more job strain than other professionals in the same healthcare sector (Rees & Cooper, 1992). There can be many causes for stress in nursing like providing physical and emotional care to patients, making run time decisions, taking additional responsibilities, working in shifts, working for longer hours, working under time

pressure, working without breaks, standing for long duration, walking for unnecessary duties, tackling lot of paperwork and other hassles, adapting changes etc. (Brockner, Tyler, & Cooper-Schneider, 1992; Judge et al., 2001). It is rightly observed that the extent of stress in nurses has tremendously increased since 1980's because of the changes in external environment which may include advancement in technology, drastic rise in world's population, rising cost of healthcare services, unemployment, rise in poverty, and due to less amount of hospitals and facilities especially in developing countries (Murphy, Athanasou, & King, 2002). This does not end here, nurses have to assume a number of roles in their jobs which also attributes towards job stress in nursing profession and these roles are the role of "guardian", "coordinator", "teacher", and "advocate" in addition to perform their daily jobs. They need continuous improvement in skills, knowledge, abilities, and competencies so that they may be able to meet the ever rising demands of their stressful profession (Pang et al., 2004).

Stress experienced by nursing has serious negative consequences which can be seen in the form of physiological, psychological, and behavioral problems or diseases (Organ & Konovsky, 1989; Lexshimi, Tahir, Santhna, & Nisam, 2007). These problems may include mild or severe headaches, sleep deprivation, problem in focusing on something, being vulnerable to viral and other infections, sudden weight loss, severe back pain, fatigue, trouble in sleeping, anxiety, boredom, loneliness, constant irritated behavior, depression, more mistakes in tasks, and poor quality relationship with coworkers and other members of organization (Organ & Konovsky, 1989). Burnout is considered both an antecedent and consequence of job related stress and occurs usually due to extra amount of direct communication with people as in the case of nursing. Burnout has several components like emotional exhaustion, depersonalization, and reduced accomplishment at workplace (Agho,

Price, & Mueller, 1992; Blegen, 1993; Boumans & Landeweerd, 1993; Morrison, Jones, & Fuller, 1997; Doncevic, Romelsjo, & Theorell, 1998; Way & MacNeil, 2006; Hekman, Bigley, Steensma, & Hereford, 2009).

2.11.1 Evidence of Job Stress among Nurses in Pakistan

The whole picture of nursing profession in Pakistan was best portrayed by Salma Rattani who is a director for Bachelors of Science in Nursing (BSN) at School of Nursing and Midwifery (SONAM) of Agha Khan University. She rightly observed that "nursing profession is not the first choice for many. It isn't considered a well-reputed profession and something that is generally meant for women." She further stated that, in the male-chauvinist society of Pakistan, if a female nurse has to touch the body parts of a male patient during the administration of some injection or medicine, it is generally not considered as something 'honorable' and usually makes people uncomfortable. Nurses in Pakistan have to work odd-hours and sometimes travel to far-off locations and thus are generally vulnerable to security risks and sexual harassment threats from their male counterparts. A report from District Nurses Association of Peshawar, KPK revealed that in last five months, there were eight cases of sexual harassment reported. This problem is not just present in one province but all over Pakistan although for some reasons, these cases are not always reported. Other issues nurses face in their everyday work-life were reported by Philomina Sadiq (head nurse at Civil Hospital, Karachi) in an interview. She indicated that "when a member of a political party is admitted [at the hospital], there is usually a lot of chaos and we are also threatened." She further elaborated by saying that, "often, patients also break things, misbehave with nurses, beat them and blame them for their family member's death" (Chauhan, 2014).

In an attempt to examine the frequency of depression and stress among female nurses working in a teaching hospital, Khalid, Irfan, Sheikh and Faisal (2010) found that the major challenges and stressors for nurses working at Abbasi Shaheed Hospital, Karachi were poor environment (27.1%), higher amount of work load (21.4%), hostile and violent behavior (15.7%), transport problems (14.3%) and occupational hazard (12.9%). Their findings suggested that the frequency of depression and stress in female nurses is quite high and that elongated exposure to high amount of stress and depression without taking any precautionary measures in terms of coping mechanisms, may lead nurses to experience permanent physical and mental diseases. Khan, Farooq and Bano (2012) conducted a study on 700 nurses working in three tertiary care teaching hospitals situated in Peshawar, KPK to find out if anxiety and depression are related to job stress of nurses. They found that five factors namely inability to satisfy patients, health hazards, dealing with violent patients, dealing with abusive patients and shift work contributed to job stress among nurses working in these teaching hospitals. Findings of this study also revealed that all of the nurses participated in this study have experienced mild or moderate levels of anxiety and depression.

Another study was conducted in three public hospitals of Peshawar, KPK to assess the factors that contribute to the level of job stress experienced by 315 nurses working in various wards of these hospitals and how nurses' job stress affects their job satisfaction and job performance. The findings reported in the study shed light on the major stressors for female nurses working in these three public hospitals. These stressors were high workload, unhealthy and unsafe working environment, lack of resources, disclosure to suffering of people, conflicting demands placed on nurses, absence of professional respect, lack of promotion opportunities, insufficient pay and benefits, domestic issues and marital problems. It was also found that female nurses working in these hospitals were exposed to more stress than their

male counterparts. Another major finding of this study was that job stress was negatively related to both job satisfaction and job performance of nurses (Jehangir et al., 2011). In his doctoral dissertation on job stress and its relationship with job satisfaction and job performance of nurses working in public sector hospitals of Pakistan, Jehangir (2011) discovered causes of job stress for female nurses working in public hospitals of Peshawar, KPK. These stressors were similar to the study mentioned above i.e. rush of patients, visitors, attendants, insufficient resources, lack of professional respect, lack of accommodation, and high amount of work overload. The findings of this study also revealed that nurses working in these hospitals are more prone to experience job related stress.

A qualitative study using the narrative analysis was conducted in two tertiary care public and private hospitals situated in federal capital of Pakistan (Islamabad) to find out if nurses working in those hospitals are satisfied with their jobs and are free from stress or not. It was found that all the participants in the study had selected this profession by their own choice and their decision of joining nursing profession was also backed by their families but now when they are this profession, they are not satisfied with their jobs. For narrative analysis, three narratives for this study were recognized i.e. “working in the spirit of serving humanity”, “working against all odds”, and “working in a functional system and facing pressures of increased accountability”. It was found that the female nurses working in public sector hospitals were represented by first two narratives while the third narrative was solely meant for nurses working private sector hospitals. First narrative which is to work in the spirit of serving humanity was represented by the nurses who were new in this profession and even with all the hurdles, they were performing their tasks. Second narrative which is to work against all odds was for those nurses who were working in public sector hospitals with lack of tools and resources to perform their jobs, and third narrative was being represented by those

nurses who were working in private tertiary care hospitals and were working hard but stressed out in their jobs regardless of a well-functioning system in their hospitals (Hamid, Malik, Kamran & Ramzan, 2014).

A study was conducted in twin cities of Rawalpindi and Islamabad in public and private hospitals to assess career satisfaction among nurses working in those hospitals. Findings of this study illustrated that out of the sample of 261 nurses as respondents for this study, 210 were always or almost always satisfied with their career choice as a nurse but all of these nurses reported moderate or high level of job stress during their work life in these hospitals (Shaikh, 2004). In another study on occupational stress and job satisfaction of 50 female nurses working in a tertiary care public hospital named Rawalpindi General Hospital, it was found that the nurses working in this hospital have reported a high level of occupational stress and major part of this stress was generated through the administrative irregularities of the hospital and only some part of it was accounted from personal or monetary issues (Nizami et al, 2006). In another attempt to assess the prevalence of factors contributing to stress, a study was conducted among 152 female nurses working in three public hospitals situated in the capital city of Khyber Pakhtunkha (KPK) province i.e. Peshawar. The findings of this study discovered the major factors that contribute to job stress of nurses working in these hospitals and these factors were facing trauma associated with deaths, conflicts with physicians, emotional demands of patients and families, lack of support, conflicts with colleagues and supervisors, labor standards, and uncertainty concerning treatment. Majority of these nurses, constituting 81% of 152 nurses, felt stressed out in their jobs (Khan, Anwar & Sayed, 2015).

Nurses in a tertiary care hospital of Islamabad reported several stressors namely poor salaries and other benefits, lack of respect, poor working environment, lack of opportunities for

professional development, time pressure, improper supervision, unbalanced responsibilities with less control at work, patient's unrealistic expectations in terms of care. These stressors resulted in poor job satisfaction of 56 nurses working in this hospital (Bahalkani et al., 2011). When it comes to nursing job, workplace violence is not very uncommon a phenomenon in hospitals of Pakistan. A study on violence against nurses was conducted in a Peshawar based public hospital and found that 29% of respondent nurses working in Hayatabad Medical Complex, Peshawar experienced physical violence in previous six months and a vast majority (67%) of nurses who participated in the study experienced verbal abuse in past six months, 57% of nurses reported that they do not feel safe and secure in this hospital as their workplace and another important and shocking finding of this study was that 71% of nurses were the witnesses to at least one incident of physical or verbal abuse at this hospital in the past six months (Khan et al., 2015).

A qualitative study was conducted to gain the in-depth knowledge of this problem of workplace violence among nurses. 140 nurses were approached in 3 hospitals in the federal capital of Islamabad but only 20 agreed to be part of this interview based qualitative study. It was found that majority of these nurses experienced violence at their workplace in past 6 months. It was also confirmed by these nurses during interviews that although verbal abuse was witnessed and experienced very frequently at their workplaces but they do not bother to report it because of the fact that they believe no action would be taken to resolve this severe problem. These nurses further testified that it was due to this phenomenon of violence at their workplace; they experience stress, lower satisfaction with job, higher absenteeism, lower job performance, and possess intentions to leave the respective hospitals (Shahzad & Malik, 2014).

Workplace violence towards nursing staff in Pakistan was also covered in another study in which authors described that nursing staff is more vulnerable to violence at workplace mainly because the nature of tasks to be performed by nurses in healthcare organizations. The most important factor which give rise to workplace violence towards nurses in Pakistan is the stigma attached to this profession i.e. lack of respect towards this profession. Both physical and psychological violence exists and happens almost every day in healthcare organizations across the country. Findings of this study also demonstrated some horrible facts about the reported and unreported incidents in which nurses experience worst tragedies like rape, unwanted sexual activities, bullying at workplace, and physical violence experienced from their patients, patients' family members and paramedical staff in the hospitals. This physical and psychological violence at workplace results in nurses experiencing high levels of stress or post-traumatic stress disorders, low levels of self-esteem, low level of self-confidence, sleep deprivation, self-blaming, high levels of depression and anxiety, and rapid decline in job performance (Somani & Khawaja, 2012).

National Institutes of Occupational Safety and Health (NIOSH, 2008) in its report on exposure to stress-occupational hazards in hospitals stated that there are almost 11 factors that are generally found in studies related to job stress in nurses. These factors or stressors are workload, time pressure, lack of social support, exposure to infectious diseases, needle-stick injuries, vulnerability to workplace violence or threats (unsafe work environment), sleep disturbance, role stress (role ambiguity and role conflict), understaffing or shortage of nurses, career development issues or lack of opportunities for professional development, and dealing with challenging and difficult or extremely ill patients.

Based on the above discussion and evidences provided in previous paragraphs, it can be safely assumed that as job stress is a serious problem among nurses in all parts of the world, it

is equally or even more a pressing concern for Pakistani nurses and especially for those who work in private sector hospitals of Pakistan as all of the factors mentioned in NIOSH report that are linked with job stress of nurses are present in Pakistani nurses as reported in these local studies.

2.12 Job Performance

Job performance is no doubt one of the important dependent variables for organizational research and has been studied from many decades with a lot of independent and mediating variables. It is a dynamic and multidimensional construct as agreed by many researchers (Borman & Motowidlo, 1993; Campbell, Gasser, & Oswald, 1996). How to enhance the job performance of employees in any sector is a question that has gained much attention and focus of academic researchers as well as the practitioners working in respective sectors (Madsen, John, & Miller, 2005). It is rightfully said that what cannot be measured cannot be improved that is why it is very important that we first devise strategies and techniques to measure job performance of employees so that we may identify certain areas for improvement and then focus on how to improve or enhance the job performance of employees. There are many methods of evaluation of job performance as suggested by HRM literature but it is quite appalling and unfortunate that researchers do not agree on one concrete definition of job performance construct. Job performance has been defined by many researchers in many different ways.

The most conventional way to define job performance is to see as it as a capability or a proficiency with which an individual completes his or her tasks which are specifically mentioned in his or her formal job description. All of the expectations are enlisted in job description and thus individual only need to perform those activities which are termed as

primary and secondary responsibilities in their job description along with the performance standards against those activities by which an individual's performance is measured (Murphy & Jackson, 1999). It is also defined in terms of job specific behaviors and their outcomes (Ilgen & Favero, 1985; Carson, Cardy, & Dobbins, 1991) however Campbell and Campbell (1988) did not agree that job performance should be seen as an outcome and thus defined job performance as job related behavior of workers irrespective of the consequences of those behaviors. It is important to note here that job performance as a job related behavior comprises of both "observable" and "non-observable" actions. The latter or which is defined in terms of such actions which one could not see or observe and includes "thought processes", "ideas", "opinions in mind", and "decision making" and all of these factors are also important in defining job performance of employees. This means that even if someone is performing well, this does not necessarily guarantee success because job performance is dependent on other factors like family issues, economy as a whole, and relationship with colleagues and support staff (Lawler, 1973).

Job performance is also an important phenomenon because of its association with other important aspects like job satisfaction, self-efficacy, turnover intentions, and mastery of knowledge, skills and abilities (Bandura, 1997; Kanfer & Ackerman, 2005). It is also important because of its association with rewards and recognition, promotions, career development opportunities (Van Scotter et al., 2000). Cambell et al. (1970) believed that there can only be eight issues that can comprise job performance in almost all professions and jobs and the factors they described are; a) "task specific behaviors", b) behaviors that are not task specific, c) "communication", d) "effort", e) individual's discipline, f) support from and to coworkers, g) "supervision and leadership", and h) management. These dimensions can be

applied to nurses' job performance as well but it is more adequate to find out how performance is being evaluated in nursing profession specifically and that is why following section focuses solely on job performance in nursing profession.

Performance of nurses is usually determined by how well they accomplish the tasks that are linked to direct patient care (Schwirian, 1978; Cambell, McCloy, Oppler, & Sager, 1993; AbuAlRub, 2004). However, nursing job is usually comprised of three types of tasks i.e. "direct patient care", "indirect patient care", and "non-nursing tasks" or tasks that are not related to nursing (Hobgood, Villani, & Quattlebaum, 2005). In their detailed chapter on performance in nursing, DeLucia et al. (2009) found that when we study literature related to performance in nursing profession, we can find only three categories by which nurses' performance is usually measured. These categories are of "competencies", "nursing-sensitive quality indicators", and measurement of nurses' performance on "specific nursing tasks" and all of these are discussed briefly here.

Nurses competencies are often evaluated firstly when they apply for a license and secondly after periodic intervals in job so that it is judged that they still are equipped with latest and updated knowledge, possess abilities, and proficiencies that are required in current circumstances of provision of healthcare (Whelan, 2006). Nursing-sensitive quality indicators, often abbreviated as NSQIs, are the signs by which the influence of nursing care is measured for patient outcomes. These signs may include the infections caught by whole hospital due to nurses because their job is to change the dressings carefully, inserting chest tubes, making the surgical equipment sterilized, and washing hands after each of the previously mentioned procedure. If infection is caused because of carelessness of nurses, it represents "low-quality patient care" (Doran, 2003). Literature suggests that nurses' performance can be measured by

assessing the nursing specific tasks like checking blood pressure, administering drugs and injections, checking blood sugar, checking "capillary blood glucose", making "triage decisions", treating children's and adult's pain and performing certain tests including the tests of heart diseases (Henry, 1991; Alcock, Dollin, & Dulberg, 1994; Travers, Waller, Bowling, Flowers, & Tintinalli, 2002; Göransson, Ehrenberg, Marklund, & Ehnfors, 2005; Vincent, 2007). As discussed earlier, job performance is a multidimensional construct and thus the two most important dimensions of job performance i.e. task and contextual performance is discussed next.

2.12.1 Task Performance

Task performance, as the name suggests, is measured against the tasks and activities which are expected from the employees by the employer and are clearly mentioned in job description of an employee incumbent to that position or job. It is referred to as a "goal oriented assessment practice" (Cambell & Cambell, 1988). It can also be termed as "in-role performance", another name for task performance, and is described by those activities that are directly related to organization's "technical core" (Borman & Motowidlo, 1997; Guidice & Mero, 2012) and it can also be defined in terms of behaviors that are deemed necessary in achieving the goals of the organization (Motowidlo & Van Scotter, 1994). The employees can make this contribution either directly or indirectly. By direct contribution it refers to as the contribution from production employees who are directly contributing to the company's performance or success and by indirect contribution, we mean the contribution made by other employees or managers (Sonnentag & Frese, 2002). Task performance is assessed by simply focusing on role-specific tasks or accomplishments (Murphy, 1989) which in turn makes it

clearly evident that task performance is linked to the formal job description of an employee (Jawahar & Ferris, 2011; Mohamed & Anisa, 2013).

As described earlier, nurses' performance can also be measured by measuring their performance against specific nursing tasks and this fact is well placed in the study of Greenslade and Jimmieson (2007) in which they found out that nurses' task performance is related to certain job related behaviors that were central to the nursing job and without these behaviors, nurses cannot be called nurses. They also developed a scale to measure subjective job performance in which they have used 41 items to measure both task and contextual performance and proposed eight dimensions (4 each) for both of task and contextual performance. Dimensions for task performance in their study were comprised of 1) "provision of information", 2) "coordination of care", 3) "provision of support", and 4) "technical care". While it is necessary to measure and to improve task performance of employees in general and nurses in particular because for this kind of performance, they get paid at the end of the day but task performance does not depict or shows the whole picture of employees performance at work and that is why it is even more important to study the construct of contextual performance (Demerouti, Xanthopoulou, Tsaousis & Bakker, 2014) which is discussed next.

2.12.2 Contextual Performance

It is important to complete the tasks mentioned in job descriptions of employees but it is a common observation that all the employees exhibit some extra-role behaviors at work (Morrison, 1994). Contextual performance, otherwise known as "extra-role performance" or "citizenship behavior", can be defined in a number of ways. MacKenzie, Podsakoff, and Fetter (1991) defined it as those discretionary or optional behaviors exhibited by employees

which are known to help organizations function more effectively but are not essentially known to directly affect the productivity of employees. They further stated that it comprises of such behaviors that “go beyond” the tasks that are mentioned in employees’ job descriptions and that organizational effectiveness is considerably and positively affected by these extra-role behaviors. Contextual performance is the right term to explain such discretionary actions or behaviors taken by employees at workplace (Organ, 1997).

Organizational citizenship behavior was initially considered as “a category of performance" (Smith et al., 1983, p. 653). A recent and interesting approach in literature that has attracted the researchers is to unequivocally segregate the different types of citizen behaviors towards the relevant beneficiary. According to this approach, Williams and Anderson (1991) advocated that these discretionary or extra role behaviors can greatly benefit other members of the organization and the organization as a whole. Organ (1988) also believed in this approach when he proposed the dimensions of organizational citizenship behavior i.e. “altruism”, “courtesy”, “conscientiousness”, “civic virtue”, and “sportsmanship” and if we have a closer look at these dimensions, they overall represents helping and assisting others and organization as a whole (Podsakoff, Whiting, Podsakoff, & Blume, 2009). Individuals when at work may also exhibit citizenship behaviors for their immediate bosses or supervisors (Rupp & Cropanzano, 2002).

Besides seeing it as citizenship behavior, other views may include seeing it as a factor of job performance that includes performing those actions which help organizations achieve the goals of social and psychological growth (Rotundo & Sackett, 2002). Another similar definition of contextual performance is to see it as a behavior which nourishes an environment which is quite necessary for accomplishment of tasks and activities that leads to achievement

of organizational objectives, strategies, and goals (George & Brief, 1992; Schmidt & Hunter, 1998). Examples of these discretionary behaviors include helping coworkers complete their tasks, protecting the interests of the organizations, voluntarily solve organizational problems, providing positive and constructive feedback for improvement, and mastering the skills, competencies, abilities and knowledge that can greatly benefit the organization (George & Brief, 1992). All of these extra role behaviors are not task-specific behaviors (Mrayyan & Al-Faouri, 2008).

Contextual or extra-role performance can be classified into two categories of behaviors i.e. firstly, those discretionary behaviors that enable the effective functioning of activities and tasks in an organization and secondly, those voluntary behaviors that intend to change the processes of an organizations for its betterment (Rotundo & Sackett, 2002). Four dimensions of nurses' contextual performance were measured by Greenslade and Jimmieson (2007) which includes "interpersonal support", "job-task support", "compliance", and "volunteering for additional duties". This study intends to measure both of these dimensions of job performance as it is observed by many that nurses exhibit both in-role (task performance) and extra role behaviors (contextual performance) (McKenzie, Podsakoff, & Fetter, 1991; Bakker et al., 2004; Bakker, Demerouti, & Euwema, 2005). After discussing all the variables to be used in this study, next section focuses on explaining the relationships between these variables which eventually help develop the hypotheses and theoretical framework for the study.

2.13 Hypotheses Development

Previously discussed sections of job demands and job resources have briefly outlined their relationships with job stress and job performance but this section highlights these

relationships in detail so as to help build the hypotheses for present study. It is quite evident from previous discussion on JD-R theory that this theory is an overarching and very fruitful theory to explain the phenomenon of stress or burnout in organizations with its use of global categories of job demands and job resources. This model take into account all types of job demands and resources in relationship with stress and burnout which further predicts job performance. The model originally focused on explaining the negative job related outcomes like emotional exhaustion, cynicism, absenteeism, and job performance in relation with various job demands and resources (Demerouti et al., 2001; Bakker et al., 2003; Van Emmerik et al., 2009) but now is more focused on explaining job performance in relationship with high work stress by using a cognitive-emotional theme (Schaufeli & Bakker, 2004).

Later on, the model is extended by many researchers to measure the effects of burnout and work engagement on various other outcomes including task performance and contextual performance (citizenship behaviors) (Schaufeli, Leiter, & Maslach, 2009; Rich, Lepine, & Crawford, 2010). The model generally suggests that the dimensions of burnout including "emotional exhaustion", "cynicism", and other variables like "lack of self-efficacy" possessed or shown by employees at workplace are known to be associated with impaired job performance and in turn to higher absenteeism rate (Bakker et al., 2004; Bakker & Demerouti, 2007; Lazarova, Westman, & Shaffer, 2010). On the other hand, improved performance is seen when an employee is engaged and motivated and aims to put "physical, cognitive, and emotional" efforts in order to achieve organizational goals by exhibiting extra-role or citizenship behaviors (Rich et al., 2010).

Job demands-resources (JD-R) theory helps scholars and practitioners in two ways. Firstly, it helps them to clearly understand the various individual and contextual predictors of stress and

burnout in form of job demands and resources that can be easily applicable to almost every occupation and work setting and secondly, it helps them to understand the relationship of these various job demands and resources with task and contextual performance of employees at workplace (Lazarova et al., 2010). It is proposed by the model that high job demands and low job resources creates strain and cripple the performance. This situation is sometimes referred to as high-strain situation in which employees experience high levels of job demands and possess low level of job resources to perform effectively. The flow of the model suggests that job demands leads to many negative health and work related outcomes like emotional exhaustion, depersonalization, cynicism, strain, absenteeism, turnover intentions and reduced job performance while job resources leads to positive health and work related outcomes like work engagement, motivation, satisfaction, happiness, positive energy and enthusiasm, improved physical and mental health, creation and activation of more resources, and improved job performance (Ellis, 2008; Lazarova et al., 2010).

Next few sections discuss in detail the relationships between various job demands used in this study with their outcomes of job stress and job performance.

2.13.1 Relationship between Job Demands and Job Stress (anxiety and depression)

This portion primarily sheds light on the previous research on the relationship between various job demands-resources and job stress. It is imperative that we must know how job demands and job resources differently act in relation to job stress. Job demands are often found to be related to causing job stress while on the other hand, job resources almost always are found to buffer the impact of job demands in causing stress at work and are treated as positive or motivational elements in JD-R theory (Fernandez-Lopez et al., 2006).

In our previous discussion on stress models, it was clearly explained in detail that JD-R theory (Demerouti et al., 2001; Bakker & Demerouti, 2007) explains the impact of job demands-resources on job stress and one of the central assumptions of this model is the fact that every single occupation has its own set of risk elements related to job stress. As job demands are known to be positively related to creating job induced stress, these factors are recognized as the elements of health-impairment process of JD-R theory as they can become the reason of various physical and psychological disorders (Demerouti et al., 2001). Job demands used in this study are quantitative demands, physical demands and emotional demands, all of which can cause stress in nursing staff working under extreme pressures each and every day. Mintz-Binder and Sanders (2012) found that higher reported levels of quantitative and emotional job demands were positively correlated with higher levels of job stress experienced by employees. Some researchers found excessive workload to be the primary reason of employees experiencing stress in their jobs (Parry-Jones et al., 1998). In another study, it was claimed that role overload along with shift work have a strong and positive relationship with job stress of employees (Tourigny et al., 2010). Rotating shift work and shift work turmoil is also found to be positively associated with the job stress (Jamal & Baba, 1992; Tourigny et al., 2010).

Long before the introduction of JD-R theory in organizational behavior literature, Perrewe & Ganster (1989) found that job demands especially in the form of excessive workload have a positive effect on anxiety and that high job control buffered the positive effect of workload on anxiety experienced by employees. Moreover, MacDonald (2003, p. 102) claimed that "in the domain of occupational stress, however, workload is equated with job demand, which is simply one of a hetereogeneous set of "psychosocial hazards" which may contribute to the development of stress". Furthermore, Tremblay and Messervey (2011) have used role

stressors as job demands which includes the stressors of role overload, role insufficiency, role ambiguity and role conflict. In their study on military chaplains, it was found that job demands have a positive, significant and direct effect on job strain i.e. anxiety and depression. In a recent study on prison staff, it was found that the staff experienced job stress while performing their everyday tasks due to high job demands and low job control in their working environment (Akbari et al., 2017).

Following hypotheses are derived after analyzing the existing literature on the relationship between job demands-resources and job stress:

H1. Job demands have a positive effect on nurses' job stress.

H1a: Job demands have a positive effect on nurses' anxiety

H1b: Job demands have a positive effect on nurses' depression

2.13.2 Relationships between Job Demands and Job Performance

This section entails the details on job demands and resources to be used in the study along with their relationships with both dimensions of job performance i.e. task and contextual performance. How these job characteristics create problems for nurses' performance is also outlined in the following sections. As previously stated, job demands are those job characteristics which can be physical, cognitive, emotional and psychological in nature and require extra efforts to complete a task (Schmidt & Hunter, 1998). In this study, job demands namely quantitative demands, physical demands and emotional demands are studied in relation to job stress (anxiety and depression) and both dimensions of job performance. Job performance, as mentioned earlier, is a multidimensional construct and has two most important dimensions of task and contextual performance where task performance is measured by activities that are clearly stated in one's job description and contextual

performance is often measured by activities that go beyond one's job description activities and these discretionary set of activities help organizations achieve its goals, and also achieve its social and psychological growth potential (Rotundo & Sackett, 2002).

2.13.2.1 Relationship between Quantitative Job Demands and Job Performance

It is common for employees doing contemporary jobs to experience high level of quantitative job demands which is usually represented by high amount of workload or work overload and time pressure (Sonnentag, Binnewies, & Mojza, 2010). It is quite evident from the past literature on stress that quantitative job demands in terms of high workload and time pressure are negatively related with many positive employee and organizational outcomes such as task enjoyment and organizational commitment (Bakker et al., 2010), employees' job satisfaction (Dwyer & Ganster, 1991; Akkermans et al., 2009; Mache, Vitzthum, Nienhaus, Klapp, & Groneberg, 2009; Panatik et al., 2009), motivation in terms of work engagement (Coetzer & Rothmann, 2007), employees' well-being (Taris & Schreurs, 2009), employees' "work ability index" (Ghaddar, Ronda, & Nolasco, 2011), job performance of employees (Dwyer & Fox, 2006; Bakker et al., 2008; Jamal, 2011), task performance and organizational citizenship behavior for individuals (OCBI) (Panatik, O'Driscoll, & Anderson, 2009), and nurses' general health (Van der Heijden et al., 2008). Nurses' job entails these kinds of quantitative job demands which in turn negatively influence their job performance (Van Essen et al., 2006; Peters et al., 2009).

2.13.2.2 Relationship between Physical Job Demands and Job Performance

The second and most relevant job demand to be studied in context of nurses' performance in this study is physical job demands as nursing profession is highly physically demanding in

nature (Trinkoff et al., 2003). There is an impressive literature in healthcare context to link physical job demands of nurses in terms of lifting and transferring patients from one place to another with many health related problems, stress and job performance (Feldstein, Valanis, Volllmer, Stevens, & Overton, 1993; Yassi et al., 1995; Collins & Owen, 1996; Engkvist et al., 1998; Evanoff, Bohr, & Wolf, 1999; Engkvist, Hjelm, Hagberg, Menckel, & Ekenvall, 2000; Yassi, Cooper, & Tate, 2000; Yassi et al., 2001; Brown & Thomas, 2003; Evanoff, Wolf, Aton, Canos, & Collins, 2003; Ostry et al., 2003; Trinkoff, Lipscomb, Geiger-Brown, Storr, & Brady, 2003; Geiger-Brown et al., 2004; Janowitz et al., 2006).

These physical and psychological health related problems along with negative work related outcomes include neck pain, shoulder pain, and musculoskeletal disorders (Pope, Silman, Cherry, Pritchard, & Macfarlane 1998; Trinkoff et al., 2003), lower back pain (LBP) (Xu, Bach, & Orhede, 1997; Punnett & Wegman, 2004; Nabe-Nielsen, Fallentin, Christensen, Jensen, & Diderichsen, 2008), exhaustion (Bakker et al., 2005), inadequate sleep, confidence interval, and pain medication (Trinkoff, Storr, & Lipscomb, 2001), work injury in both sexes (Wilkins & Beaudet, 1998), work disability (Garg & Moore, 1992; Eberhardt, Larsson, & Nived, 1993; Wolfe & Hawley, 1998; Tuomi et al., 2004), fatigue and job dissatisfaction (De Croon et al., 2002), and activity curb (Aasa et al., 2005). Even though there are many studies in the past that have found strong and statistically significant relationship between physical demands and job performance of employees but some scholars have found mixed, insignificant and inconclusive results for this relationship (Motowildo, Borman, & Schmit, 1997; Perry, Sheikh-Nainar, Segall, Ma, & Kaber, 2008).

2.13.2.3 Relationship between Emotional Job Demands and Job Performance

Emotional demands, as stated earlier, are so ingrained in the jobs of people in human services sector like nursing that when they don't have emotional resources to compensate and match these emotional demands, they experience stress and cripple their performance at work. There are many studies in the stress and burnout literature that connects these emotional job demands negatively with many positive health and work related outcomes like task enjoyment and commitment (Bakker et al., 2010), work-ability index (WAI) (Ghaddar et al., 2011), well-being of employees (Taris & Schreurs, 2009), nurses' general health and job performance (Van der Heijden et al., 2008).

On the other hand, emotional job demands are found to have positive relationship with a lot of negative health and work related outcomes like high job stress, insomnia, and a decline in overall health of an employee (Mintz-Binder & Sanders, 2012), turnover intentions (Li et al., 2010), prolonged absenteeism due to illness (Bjorner & Pejtersen, 2010; Rugulies, Aust, & Pejtersen, 2010; Clausen, Nielsen, Carneiro, & Borg, 2012), emotional exhaustion and cynicism (Bakker et al., 2005; Borritz, 2006; Montgomery et al., 2006; Akkermans et al., 2009; Schaufeli et al., 2009; Zhou et al., 2010; Mintz-Binder & Sanders, 2012), poor and counterproductive relationship with immediate supervisors or line managers (Vanroelen et al., 2010), facing antagonistic occasions (Tsutsumi, Umehara, Ono, & Kawakami, 2007), and work-family conflict (van der Heijden et al., 2008). In their study on nurses and police officers, Bakker and Heuven (2006) found that emotional demands were negatively related to in-role performance through the mediating role of emotional dissonance and burnout. This study attempts to investigate if there are any direct signs of relationship between emotional demands and job performance of nurses.

After critically evaluating the literature on the relationship between job demands and job performance of employees, the present study would like to present the following hypotheses:

H2: Job demands have a negative effect on nurses' job performance

H2a: Job demands have a negative effect on nurses' task performance.

H2b: Job demands have a negative effect on nurses' contextual performance.

2.13.3 Relationships between Personal Demands and Job Stress

The major theoretical contribution of this study is to include two personal demands which were not examined in JD-R theory before. These personal demands are that of neuroticism and self-criticism. Previously, only the direct effect of job demands on job stress was being investigated by researchers but in this study, researcher argues that personal characteristics in the form of personal demands can also predict job stress i.e. anxiety and depression. Next sections describe in great detail about how neuroticism and self-criticism as personal vulnerability factors are related to job stress and its indicators of anxiety and depression.

2.13.3.1 Relationship between Neuroticism and Job Stress (Anxiety and Depression)

Personality traits of neuroticism and extraversion have been studied in association with Major Depressive Disorder (MDD) in numerous clinical based samples and non-clinical or population based studies (see Kotov et al., 2010 for a review). All of these studies have come to a conclusion that neuroticism is positively linked to MDD while the other trait of extraversion is related negatively to MDD. Furthermore, all of these clinical and non-clinical based studies have agreed upon the fact that neuroticism is a strong predictor and a significant personal vulnerability factor for MDD (Hirschfeld et al., 1989; Boyce et al., 1991; Kendler et

al., 2004; Ormel et al., 2004; Hettema et al., 2006; Kendler et al., 2006; Fanous et al., 2007). On the other hand, extraversion was found to be only weakly related to MDD (Kendler et al., 2006).

Big five model of personality is undoubtedly one of the most studied models in relation to studies on personality and its association with other important variables. Out of these 5 traits in this model of personality, neuroticism is the personality trait that is mostly known because of its relationship with psychological distress and poor well-being (McCrae & Costa, 1991; DeNeve & Cooper, 1998; Ozer & Benet-Martinez, 2006; Steel, Schmidt, & Shultz, 2008). Neuroticism can be described as a trait that shows the individual differences in exhibiting emotional reactivity associated with negative environmental stimulation (Eysenck, 1967). People who reported high scores in neuroticism are vulnerable to encounter more fear, depression, anxiety, guilt and their reaction to stressful events and the changes occurring in their lives is usually more distressing than their counterparts i.e. emotionally stable people (Mroczek & Almeida, 2004; Swagler & Jome, 2005). The trait of neuroticism is largely recognized as a biologically conditioned trait of personality because of the people's propensity to encounter and experience more negative emotional states is more often associated with a highly delicate limbic system which can trigger reactivity particularly in more stressful life events or job situations (Eysenck, 1967; Haas, Omura, Constable, & Canli, 2007; Norris, Larsen, & Cacioppo, 2007). Similarly, Sobol-Kwapinska (2016) found that neuroticism trait of big five personality model is not only related to susceptibility and reactivity but also to a propensity of overreacting in negative emotional situations or events when encountered by even a sensitive stimuli like changes in the environment or surroundings.

One of the most critical and common psychological problems adolescents face is that of anxiety disorders (Kessler et al., 2012). Moreover, it is observed that the anxiety disorder among adolescents persists for usually a longer period of time and hence envisaging the symptoms of anxiety in adulthood (Olino, Klein, Lewinsohn, Rohde, & Seeley, 2010). One of the fundamental factors that is strongly and significantly related to anxiety is neuroticism (e.g., see Kotov, Gamez, Schmidt, & Watson, 2010 for a review), one of the personality factors in big five model which is known for its tendency to predispose and make people vulnerable to encounter negative affectivity (Watson, Clark, & Tellegen, 1988). Neuroticism trait has been studied extensively among adolescent samples (Hink et al., 2013) and like anxiety, it also persists in adolescent for longer period of time showing that neuroticism trait, if not given proper attention in a younger age, will result in adult neuroticism, a fact that is well documented in longitudinal studies (Caspi & Roberts, 2001). According to Widiger, Verheul and Van den Brink (1999), neuroticism is quite a broad factor and is associated with many forms of psychopathology like depression, hopelessness, fear, shame, guilt other than anxiety.

The two constructs of neuroticism and psychological distress are somehow related but at the same time distinct from each other where neuroticism is recognized, more often than not, as a stable and long lasting personality trait and it's also considered to have a hereditary factor associated with it (Krueger, Caspi & Moffitt, 2000) which makes people predisposed to experience distress more frequently (Van Os & Jones, 1999; Goldberg, 2001; McCrae et al., 2002). There are two underlying mechanisms or models that are helpful in understanding, explaining and evaluating the relationship between neuroticism and psychological distress; one of these models advocates that people who scores high on the trait of neuroticism are likely to self-select the events and situations that in turn lead to distress and negative affect

and that's why it is known as self-selection model while on the other hand, the second model depicts neuroticism as a personality trait that makes people vulnerable and predisposes them to experience distress in the conditions where adversity or negative affect is present and hence this model is named as vulnerability model.

Psychological distress is seen as a product of a collaborative effect between an individual and his/her environment in self-selection model (Van Os, Park & Jones, 2001). The effect sizes that are observed in the relationship between neuroticism and adversity are small (Goldberg, 2001) but the true effect sizes of this relationship are largely underestimated (Duggan, Sham, Lee, Minne & Murray, 1995) because of one of two reasons; firstly either because of predispositions by errors that are random or systematic in measuring the trait of neuroticism or that of life events, or secondly due to the fact that complexity of environmental context where the life events usually occur is failed to be captured by the present measures of life events. However, it is practically impossible to have all the data required to measure all of the possible environmental exposures and experiences of stressful life events at the same time.

On the other hand, the studies which support the view of vulnerability model argue that psychological distress and emotional vulnerability is influenced by neuroticism even if there is no substantially adverse stimuli present (Rodgers, 1990; Middeldorp, Cath, Beem, Willemsen, Boomsma, 2008). Moreover, neuroticism has also been extensively linked to the well-known indicators of psychological distress i.e. depression and anxiety (Duggan et al, 1995). It has long been a well-documented and established fact that some of the personality traits may act as personal vulnerability factors and predispose individuals in developing depressive symptoms such that it influences the way they perceive, cope with or react to stressors in their environment. Those who advocate this view believe that predisposition of individuals to experience psychological distress is often a result of individual differences in

cognitive, affective, and physiological reaction to some of the environmental events and this psychological distress can further be developed into psychopathology over time (for a review, see; Clark, 2005).

Neuroticism is recognized as one of the higher-order personality traits and is often linked to worrying, illogical and over thinking, failure to cope with stress, lack of impulse control, and negative affectivity (Costa & McCrae, 1992). When it comes to psychological problems like affective disturbances, neuroticism is considered to be as a strong predictor of such problems (Watson, Gamez, & Simms, 2005). Neuroticism is also associated to psychological problems like depression and its various indicators. Previous longitudinal studies have indicated that high level of neuroticism in premorbid stage is the predictor of the first occurrence of depressive episode (Hirschfeld et al., 1989) and also of depression's recurrences (Kendler, Neale, Kessler, Heath, & Eaves, 1993b). It was also found that hereditary factors that are associated with neuroticism result in almost half of the hereditary variance of unipolar depression showing that neuroticism is considered as a fundamental genetic vulnerability to depression.

Furthermore, it is evident from the results obtained from both clinical and non-clinical settings that neuroticism as a personality trait is a vulnerability factor for both of the most crucial and common attributes of psychological distress i.e. anxiety and depression (Clark, Watson, & Mineka, 1994; Trull & Sher, 1994; Krueger, Caspi, Moffitt, Silva, & McGee, 1996). Gray's (1982) model of behavioral motivation indicates that neuroticism is associated with Behavioral Inhibition System (BIS). This system of behavioral inhibition is postulated to trigger passive-avoidant behavior in situations where there are threatening aversive stimuli, novel stimuli, and perceptual clues giving indication to a person that there is no positive reinforcement available to his/her rescue. Therefore, heightened levels of neuroticism are

posited to be associated to higher attentiveness towards the punishment clues and a reduced rate of adjustment towards aversive stimuli. This whole phenomenon leads to an elevated risk of experiencing distress and an even greater risk of developing depressive symptoms.

There is a large sum of evidence found in various studies that have investigated the relationship between neuroticism and job stress including its facets of anxiety and depression that neuroticism is a strong predictor of psychological distress. For instance, it is found that people scoring high on neuroticism trait are more vulnerable to the "depresso-genic effects" of "long-term contextual threats" than people scoring low on neuroticism (Kendler, Kuhn & Prescott, 2004). Furthermore, it was learnt in a study that neuroticism predicts the future changes in depression especially in females who experience a sudden paradigm shift in the form of significant life transitions (Kling, Ryff, Love & Essex, 2003). Even more interestingly, neuroticism was found to moderate the impact of changes in life situations on depressive mood of individuals (Ormel, Stewart & Sanderman, 1989). Findings like this point towards the fact that neuroticism may act as a moderator in the relationship between daily hassles and depression. It is important to note that almost 33 percent of the relationship between distress and depressive symptoms is due to individuals' self-selection towards higher vulnerability environments (Kendler, Karkowski & Prescott, 1999).

It is pertinent and important to contemplate the effect neuroticism may have on individual's tendency of encountering daily hassles in his/her private and job life when examining the relationship between neuroticism, daily hassles and depression. This effect of neuroticism on daily hassles also gives clues about the use of daily hassles as a mediator in the relationship between neuroticism and depression. This evidence is also available in literature where neuroticism is known to lead to problems in marriage, financial complications, loss of job,

and interpersonal conflicts (Kendler, Gardner, & Prescott, 2003) along with encountering daily hassles (Suls, Green, & Hillis, 1998; Vollrath, 2000).

Support exists for validity of both of these models i.e. neuroticism moderation model and daily hassles mediation model in the relationship between neuroticism, daily hassles, and depressive symptoms. For instance, it was found that highly neurotic individuals experience daily hassles somewhat more than people scoring low on neuroticism and even more importantly, it was also discovered that people scoring high on this trait of neuroticism encounter considerably more distress that is event-related (Bolger & Schilling, 1991). According to Bolger and Zuckerman (1995), the trait of neuroticism is related to distress because of enhancing the exposure to and reactivity towards stressors as posited by differential exposure-reactivity model.

It has been found in another study that neuroticism is a predictor of higher levels of perceived job stress as well as its related constructs of high level of anxiety and depression symptoms during the internship period of junior physicians. Furthermore, perceived job stress was found to be a mediator in the relationship between neuroticism and stress reactions and also psychological distress (anxiety and depression) (Gramstad, Gjestad & Haver, 2013).

The trait of neuroticism is considered important in studying the psychological diseases and disorders because of the fact that it is often linked with susceptibility to the exposure of symptoms of both anxiety and depression. Scores showing higher level of neuroticism are strongly related to an elevated risk of depression (Kendell & DiScipio, 1968; Wetzel et al., 1980; Angst & Clayton, 1986; Hirschfeld et al., 1989; Kendler et al., 1993), and even more importantly, a scar effect occurs when the person experiences depressive episode and this episode results in elevation of neuroticism score which is persistent even after post-recovery period (Reich et al., 1987). This trait is well known to be a robust personal vulnerability factor

for lifelong existence of major depressive disorder (MDD) (Hirschfeld et al., 1989; Rush et al., 1995; Alnaes & Torgersen, 1997; Roberts & Kendler, 1999).

There is support in previous studies conducted in US and European samples for the fact that common genetic susceptibility partially mediates the relationship between neuroticism and MDD (Fanous et al., 2002) and this common genetic susceptibility also has a major share to explain the correlation between the relationship of anxiety disorders and MDD (Jardine et al., 1984; Hettema et al., 2004; Hettema et al., 2006; Kendler et al., 2007).

Many researchers have investigated the role of various personality traits specially the effect of neuroticism in association with mood, anxiety disorders and depression and found that high level of neuroticism is strongly related to these psychological problems (Trull, & Sher, 1994; Bienvenu et al., 2004; Weinstock & Whisman, 2006). Another trait which was examined most after neuroticism in relation to agoraphobia and psychological distress i.e. social anxiety and depression is extraversion where lower levels of extraversion lead to the above mentioned problems (Brown, 2007; Weiss et al. 2009; Rosellini, Lawrence, Meyer, & Brown, 2010). Moreover, in some other studies, high neuroticism, low conscientiousness and low level of extraversion were the vulnerability factors for minor and major depression (Weiss et al. 2009; Hayward, Taylor, Smoski, Steffens, & Payne, 2013).

Past studies on big five personality model and psychological distress indicated that neuroticism trait in higher levels of negative emotional states leads to emotional and psychological problems like depression. Conversely, the trait of extraversion, with reduced sociability, activity levels and positive emotionality, is found to be related to both anxiety and depression. Moreover, low levels of conscientiousness is a predictor of low self-control in

planning and organizing which in turn leads to more severe episodes of depression (Trull, & Sher, 1994; Bienvenu et al., 2001; Brown, 2007).

Afshar et al. (2015) found that the score of neuroticism was higher among the people in community who experienced both anxiety and depression but the other personality traits' scores were significantly lower. Their findings revealed that people scoring high on neuroticism, low on extraversion and agreeableness were the ones who were associated with higher psychological distress or in other words, higher levels of anxiety and depression.

It is quite evident from many modern-day theories of personality and temperament concerning youth that personal or individual differences are present in emotional reactivity and also in the processes that are known to moderate such reactivity (Tackett & Krueger, 2005; Durbin & Shafir, 2008). One such personality trait that is most commonly observed in almost all structural theories on child personality and temperament is that of neuroticism or alternatively known as negative affect/affectivity (Clark, Watson, & Mineka, 1994; Watson & Clark, 1994; Halverson et al., 2003; Shiner & Caspi, 2003). Children who exhibit high scores of neuroticism are more likely to experience certain negative emotions including sadness, loneliness, fears, anger, anxiety, and depression, along with having difficulty to handle such negative states when they occur (Clark & Watson, 1999).

The reason why children having high levels of neuroticism experience the negative affective states more frequently and intensely is because of the lack of the tendency to manage or mitigate the negative emotions and because of having a low threshold for tackling or managing such negative states or emotions (Durbin & Shafir, 2008). It is observed that neuroticism in higher levels almost always serves as a personal vulnerability factor in the development of booth anxiety and mood disorders (Clark et al., 1994). Moreover, the relationship between neuroticism and both forms of psychological distress i.e. depression and

anxiety over time has been well theorized in diathesis-stress model (Clark & Watson, 1999; Tackett & Krueger, 2005). In short, it can be stated that children having high levels of neuroticism have been at constant threat of developing such symptoms when experiencing high levels of stress.

The three factor model of personality including the traits of neuroticism, extraversion and conscientiousness have extensively been linked to psychological distress in various populations such that people high in neuroticism (having negative emotional states and susceptibility) are the ones who are more vulnerable to experience higher levels of psychological distress (Van Berkel, 2009). In a previous study, it was discovered that people with a family history of depression were depressed for the reason they were high on the trait of neuroticism. The reason for why highly neurotic individuals are more likely to experience more distress is because they react negatively to daily life events (stressors) and thus experience more of such stressful events (Duggan et al., 1995). Similar findings were obtained in a diary study conducted on community sample in which participants were asked to fill NEO Personality Inventory (NEO-PI; Costa & McCrae, 1985) in the start of the survey and then this practice was repeated for eight consecutive days. Authors found that all the participants, when encounter a stressor, experienced a lowering in their moods but people high in neuroticism reacted more negatively to stressors and also were more vulnerable to the same problems repeatedly. Furthermore, highly neurotic individuals reported more encounters with stressful events in their environment (Suls et al., 1998).

The association of different personality traits and psychological distress in form of anxious and depressive moods has been extensively researched in various models and theories (Eysenck, 1957, 1967; Gray, 1981; Beck, Epstein, & Harrison, 1983; Tellegen, 1985; Cloninger, 1986; Larsen & Ketelaar, 1991; Clark, Watson, & Mineka, 1994). Neuroticism is

one such trait among other high order personality traits which was found to be robustly related to severe and lifelong prevalence of major depressive episodes (Duggan, Lee, & Murray, 1990; Scott, Eccleston, & Boys, 1992). In case of anxiety, the individuals who had higher levels of neuroticism and lower levels of extraversion trait were associated with higher levels of anxiety (Gershuny & Sher, 1992). Trait anxiety and neuroticism was positively linked to the relentlessness of Generalized Anxiety Disorder (GAD) however, both of these traits were negatively associated with extraversion (Gomez & Francis, 2003). Findings like this illustrate that various personality traits interact with each other and they have independent effects on both depression and anxiety symptoms.

2.13.3.2 Relationship between Self-Criticism and Job Stress (Anxiety and Depression)

Gilbert (2005) defined self-criticism as "an integrated system of beliefs, emotions, and attitudes that people might have toward themselves in response to failures or setbacks". Longe et al. (2010) found that we, human beings, react to our own self-attacks the same way and by using same response systems that we normally use to react to the external fears and threats. It has been discovered that the self-to-self relationship, which give rise to self-criticism, is related to serious vulnerability to develop depression and other psychological disorders (Zuroff, Mongrain, & Santor, 2004; Whelton & Greenberg, 2005) like it is considered as a major driver of anxiety focused and personality based research studies (for a review, see Dunkley, Sanislow, Grilo, & McGlashan, 2006).

Kramer and Pascual-Leone (2016) have described self-criticism as a self-referential process that is known for its robust and significant association with several psychological disorders. The concept of self-criticism refers to as a person indulging in a "conscious evaluation of oneself that can be healthy and have reflexive behavior, but also can have harmful effects and

consequences for an individual" (Kannan & Levitt, 2013, p. 166). The negative and unhealthy effects associated with it may take many forms such as condemning and being harsh, feeling hateful, loathing and contempt towards oneself (Kramer & Pascual-Leone, 2016).

Self-criticism can be defined as a consuming process of worrying in relation with the development of a worthy sense of self and this process is often linked to unrealistic, lofty or unattainable goals, personal demands that are highly overstated for superior achievements and performance, and a continuous propensity to reprimand and degrade oneself (Blatt, 1974, 2004). It is a personality trait similar to perfectionism (Flett & Hewitt, 2002) and often proves to be a great explanatory factor as a development trajectory that builds vulnerability to certain types of psychological distress like that of clinical and general depression and anxiety (Zuroff & Mongrain, 1987).

In the field and literature of psychotherapy and psychopathology, the concept of self-criticism has been gaining much attention from various researchers (Blatt, 1974; Zuroff, 1994; Bergner, 1997; Cox, Enns, & Clara, 2002; Whelton & Greenberg, 2005; Kannan & Levitt, 2013). It has been argued that self-criticism can be experienced universally by anyone however; there are individual difference to account for in its form, complexity, severity, coping strategies, and effects on each person (Whelton & Henkelman, 2002). It has been observed that normally, self-criticism has been viewed as a trait which functions for different reasons and multiple purposes (Gilbert et al., 2004) including that of constructive and adaptive purposes (Chang, 2008; Rogers, 2012). These different underlying causes and rationales of being self-critical were identified and measured by two important elements of self-criticism i.e. self-correction; which is constructive in nature and help individuals to perform better and other is self-persecution; in which an individual view everything negative and have feelings of punishing

oneself (Gilbert et al., 2004). This view of self-criticism posits that self-criticism is not only negative but can also be constructive and may very well be the key to develop and train the therapists because they have to utilize the new information and skills in their practice.

On the other hand, self-criticism in excessive form has been mostly researched in context of its relationship with negative outcomes like depression and perfectionism (Zuroff, Koestner, & Moskowitz, 2012; Campos, Besser, & Blatt, 2013; James, Verplanken, & Rimes, 2015). In addition to that, self-criticism has also been related to many other negative consequences and psychological problems like trauma, personality disorders, anxiety, and even suicide (Firestone, 1988; Zuroff, 1994; Cox, MacPherson, Enns, & McWilliams, 2004). The function of self-correction is to promote self-enhancement of an individual while this form of self-criticism i.e. self-persecution is associated with self-destruction. So self-criticism can be defined accordingly as a "conscious or unconscious negative evaluation of oneself that can be a healthy and reflexive behavior, but can have harmful effects and consequences for an individual" (Blatt, 1974; Gilbert & Irons, 2005; Whelton & Greenberg, 2005; Chang, 2008). This definition of self-criticism is consistent with that of literature of self-criticism discussed in a recent review which took into account many psychopathologies and theoretical illustrations (Kannan & Levitt, 2013).

The trait of self-criticism has also been studied in relationship with various interpersonal complexities that may have its role in explaining some of the difficulties in therapeutic relationship. It has been found that self-critical people lack in two important tasks related to interpersonal relationships i.e. social judgment and social insight (Aube & Whiffen, 1996). The role of self-criticism was also studied in relation to fellow personality traits in Big-Five personality model in which it was found that self-critical individuals scored significantly

higher on the trait of neuroticism and lower in agreeableness and hence proved the fact that they have high irritability and lower levels of social warmth (Zuroff, 1994). People who have tendencies of being self-critical often asked for less social support and also believed that they received less support from others although their coworkers did not report such indiscrimination in providing them the required social support (Mongrain, 1998).

A study was conducted to examine the social interactions self-critical people have with their dependents, it was found that self-critical people were submissive instead of being dominant and confrontational as opposed to agreeable (Zuroff, Moskowitz, & Cote, 1999). In addition to that, self-critical people have such relation with their romantic partners that might lead to depressogenic and also self-defeating interpersonal phases in their lives. Moreover, the findings of same study revealed the gender variations in such relationships. For example, self-critical women were found to be less loving and more hostile than control or dependent women and consequently, their partners were rated as less loving when compared with other partners. It was also discovered that self-critical people viewed themselves as being more submissive in their social interactions than originally observed by the objective raters (Mongrain, Vettese, Shuster & Kendal, 1998).

The construct of self-criticism is well known for its association with plentiful psychological disorders (Blatt, 2004; Gilbert & Irons, 2005) and experience from large clinical settings advocate that quite a large fraction of counselling clients will experience some amount of fear, guilt, and shame at some point in life which can often result from enduring self-attacks (Whelton, Paulson & Marusiak, 2007).

In cognitive models of psychology, self-criticism has not only been theorized as a particular type of self-referential approach of information processing that is known for its

remorselessness, over-critical and punishing nature (Beck, Rush, Shaw & Emery, 1979) but also in relation to negative emotions, thoughts, and maladaptive nature (Beck et al., 1979; Schmidt & Joiner, 2004). Different studies on self-criticism have described it as a personality trait (Mongrain, 1993) and also a factor responsible for many negative interpersonal behaviors including being contentious (Zuroff, Moskowitz & Côté, 1999; Sadikaj, Moskowitz, Russell, Zuroff & Paris, 2013; Kopala-Sibley, Zuroff, Russell & Moskowitz, 2014). Some studies were conducted to examine the biological structure of self-criticism concept using neuroimaging and provided support for these cognitive models by identifying and exploring certain arrays of neural activation associated with undergoing self-critical processes (Longe et al., 2010; Doerig et al., 2013).

It has been demonstrated in the past that depression can occur due to one of the two maladjusted personality patterns which give rise to two different types of vulnerabilities i.e. the introjective or self-critical personality and the anaclitic or dependent personality (Blatt, 1974). Strong emotions of inferiority, worthlessness, guilt, and inability to meet one's expectations or standards were some of the robust factors that characterize self-critical personality (Blatt, D'Afflitti, & Quinlan, 1976). Moreover, it was found that people having high levels of self-criticism often indulge themselves in harsh self-scrutiny and relentless self-evaluations so that they may attempt to avoid the failures and live up to their personal ideals or standards. These individuals having self-critical personality possess negative perceptions about themselves and have severe fear of rejection, criticism and disapproval from other people around them (Hermanto et al., 2016).

The constructs of guilt and shame are related to self-criticism as forms of self-derogation. Guilt is the construct that focusses on identifying controllable origin of self-blame including

violent behavior or the failure to achieve the goals or standards while on the other hand, shame is seen more often than not as a universally destructive and negative self-examination construct in which individual's character is considered to be defective (Tangney & Dearing, 2003).

In order to better understand the concepts of personality constructs that may have their role in developing vulnerability to distress, Blatt (1974, 1990, 2004, & 2008) and his colleagues developed a theory of personality configuration often known as double helix theory or theory of personality development which investigates two dimensions of personality i.e. interpersonal relatedness (dependency or neediness) and self-definition (for instance, self-criticism). Blatt (2008) advocated that personality development can be viewed as amalgamation of these two configurations of personality. Both of these dimensions of personality are crucial for ideal personality development and also in the mitigation of susceptibility to experience distress along with physical and psychological well-being (Blatt & Zuroff, 1992). Nevertheless, the processes that are normally associated with the development of personality can easily be disturbed with a trade-off; making individuals preoccupied with interpersonal relatedness with sacrifice of the development of the self or they preoccupy themselves with the issues related to self at the cost of other important dimension of interpersonal relatedness giving rise to two distinct personality types i.e. anaclitic (dependency/neediness) and introjective (self-critical) personality (for a detailed review, see Blatt, 2008).

There is ample clinical and empirical evidence to support the fact that both self-criticism and dependency serve as personality vulnerabilities to psychological distress (e.g., Mongrain & Zuroff, 1995; Besser & Priel, 2003a, 2003b, 2005a, 2005b; Corveleyn, Luyten, & Blatt, 2005;

Besser, Vliegen, Luyten, & Blatt, 2008; Blatt, 2008; Campos, Besser, & Blatt, 2010; Besser, Luyten, & Blatt, 2011) including that of depression (Zuroff, Mongrain & Santor, 2004). Other studies in this context have shown that excessive amount of both self-criticism and dependency also contribute towards the vulnerability to distress especially in reaction to stressful life events (Besser & Priel, 2010, 2011; Vliegen et al., 2010). Both of these personal vulnerability factors have been empirical tested and measured by using Depressive Experiences Questionnaire (DEQ) which focuses on using items that are more representative of common experiences rather than evident indications of depression (Blatt, D'Afflitti, & Quinlan, 1976). Furthermore, it was discovered that Blatt's two personality dimensions were more continuous and practically orthogonal traits that are distinct from the concepts of depression, social context, and neuroticism (Zuroff et al., 2004).

Most of the research on the construct of self-criticism has been driven from Blatt's theory of psychopathology and personality development (Blatt, 2004, 2008). It is important to note here that self-critical people often "engage in constant and harsh self-scrutiny and evaluation and have a chronic fear of being disapproved and criticized" (Blatt & Zuroff, 1992, p. 528). Excessive and punitive self-criticism was found to be related to a number of negative consequences such as vulnerability to develop general and clinical depression (Blatt, 2004; Zuroff, Mongrain, & Santor, 2004), damaged interpersonal relationships (Zuroff, Santor, & Mongrain, 2005). In addition to this, it was also discovered that excessive self-criticism almost always create hurdles in treatment of psychological distress including depression (Rector, Bagby, Segal, Joffe, & Levitt, 2000; Blatt & Zuroff, 2005).

The trait of self-criticism involves excessive concern about the issues related to self-definition instead of focusing on interpersonal relationships. Self-critical people were found to be more

independent and worried about the issues such as control, prestige, and power. They are more likely to be assertive and aggressive in relation to self-definition. These individuals want to be appreciated, acknowledged, and well treasured and are more critical of themselves and the others around (Blatt, 2008). Self-critical people are extremely susceptible to experience distress irrespective of their severity of hopelessness or helplessness. It is imperative to address these important vulnerability factors of dependency and self-criticism because of their importance in healing strategies in therapy (Campos, Besser, Ferreira & Blatt, 2012).

How self-criticism predicts depression is a question that can be explained by the fact that there is a distinctive interaction between the symptoms of anxiety and that of cognition based vulnerabilities including self-criticism (Cohen, Young, Gibb, Hankin & Abela, 2014). It was discovered in relatively recent research that both the byproducts of self-criticism i.e. self-blame and rumination (Dunkley et al., 2003) are robustly linked to anxiety in children and adults alike (Legerstee et al., 2010, 2011). These cognition based coping phenomenon are usually theorized as vulnerabilities for anxiety (Lewis et al., 2012) but some researchers believe that the association between them is more like reciprocal (Starr & Davila, 2012) and hence it can be stated that as individual's symptoms of anxiety increase, these negative cognitive coping factors such as self-criticism and self-scrutiny (rumination) also increase. So it may be inferred that excessive rumination and self-criticism over a long period of time may predict another psychological distress i.e. symptoms of depression (Cohen et al., 2014).

Based on the literature review presented above, this study came up with following hypothesis concerning the direct influence of personal demands on job stress:

H3. Personal demands have a positive effect on nurses' job stress.

H3a. Personal demands have a positive effect on nurses' anxiety

H3b. Personal demands have a positive effect on nurses' depression

2.13.4 Relationship between Personal Demands and Job Performance

This particular section covers the discussion on the literature found for the relationship between personal demands and job performance. The two personal demands used in present study i.e. neuroticism and self-criticism were studied in relation to two dimensions of job performance i.e. task and contextual performance. It was found that the direct relationship between personal demands (neuroticism and self-criticism) and job stress (anxiety and depression) is well documented in the past literature but the studies on the direct relationship between the personal demands and job performance have shown mixed and inconclusive results. However there are studies and meta analyses which shows that personality factors are indeed directly related to job performance but most studies have shown that this relationship is often influenced or explained by a third variable i.e. mediator. But it is of interest to researchers and organizations alike to study the relationship between personality and job performance so as to make better decisions related to recruitment and selection of employees (Rothmann & Coetzer, 2003).

The findings of previous studies and meta-analyses (Hough, Eaton, Dunnette, Kamp & McCloy, 1990; Barrick & Mount, 1991; Jackson & Rothstein, 1991; Salgado, 1997; Tett, Vinchur, Schippmann, Sweizer & Roth, 1998; Barrick, Mount & Judge, 2001) have shown that many big five personality dimensions are directly and significantly related to job performance. More specifically, neuroticism was found to be a predictor of job performance

in various occupations (Hörmann & Maschke, 1996). Moreover, it was found in a previous study that neuroticism is inversely related to job performance (Judge, Higgins, Thoresen & Barrick, 1999) but in another study, it was argued that neuroticism predict job performance only in some situations and circumstances (Salgado, 1997). In a relatively recent study on telesales workers, it was found that neuroticism along with the traits of extroversion and conscientiousness was moderately correlated with job performance (Klang, 2012). Furthermore, Rothmann & Coetzer (2003, p. 72) concluded that "it seems that employees who tend towards neuroticism (i.e. who are prone to having irrational ideas, being less able to control impulses, and coping poorly with stress) perform poorer and are less creative than those who are emotionally stable."

The other personal demand used in present study i.e. self-criticism was once thought to be only associated with depression but now it is a proven transdiagnostic risk factor for diverse forms of psychopathology (Kannan & Levitt, 2013; Shahar, Doron, & Szepsenwol, 2015; Warren., Smeets, & Neff, 2016). Self-critical individuals experience feelings of unworthiness, inferiority, failure, and guilt. They engage in constant and harsh self-scrutiny and evaluation, and fear of being disapproved and criticized and losing the approval and acceptance of others (Blatt & Zuroff, 1992; Warren, Smeets, & Neff, 2016). Although the relationship between self-criticism and psychological distress i.e. anxiety and depression is well-established in the literature but the studies on its relationship with job performance are rather very scarce if any. However, we know from previous studies that positive self-image or self-concept is a strong predictor of employees' job performance because "positive employees are more motivated to perform their jobs" (Judge, Erez, & Bono, 1998, p. 167). Based on this argument, it can be debated that negative self-image or self-concept and constant self-degrading thoughts and actions eventually leads to less than ideal outcomes among which is impaired job

performance because employees do not feel motivated to effectively perform their jobs. Hence, there is a great need to study the relationship between self-criticism and job performance so that organizations can do something about this phenomenon and to make their employees less harsh and critical to themselves so that they feel motivated.

Based on the discussion of the relationship between personal demands and job performance in existing literature, it was hypothesized that:

H4. Personal demands have a negative effect on nurses' job performance.

H4a. Personal demands have a negative effect on nurses' task performance.

H4b. Personal demands have a negative effect on nurses' contextual performance.

2.13.5 Relationship between Job Stress and Job Performance

Many researchers in the past have explored the relationship between job stress and job performance. The most popular and agreed upon view of seeing this relationship supports the fact that there is a negative relationship between these two variables meaning that higher levels of job stress experienced by employees often leads to poor job performance (Motowidlo et al., 1986; Westman & Eden, 1996; Siu, 2003; Welker-Hood, 2006). Though, there are few researchers who found out in their studies an inverted U-shaped curvilinear relationship (Cohen, 1980), a positive linear relationship between the two variables (Keijsers, Schufeli, Blanc, Zwerts, & Miranda, 1995), and no relationship at all (Blau, 1981; Matteson, Ivancevich, & Smith, 1984). So there are four different kinds of findings in existing literature namely negative linear relationship, positive linear relationship, an inverted U-shaped relationship and no relationship between the job stress and job performance. Next section discusses these findings reported in previous researches.

As stated earlier, a large chunk of previous studies reported a negative relationship between job stress and job performance relationship (Allen, Hitt, & Greer, 1982; Friend, 1982; Harris & Berger, 1983; Jamal, 1984; Greer & Castro, 1986; Lagace, 1988; Westman & Eden, 1991, 1996) because of the fact that they have focused all their energies on finding the negative effects on job performance level of employees and totally ignored the fact that not all stress is bad is negative and bad (which is already discussed in "eustress" section of literature review) and that a fair amount of stress is needed to achieve the levels of performance desired in every walk of our lives. This fact was also investigated by a number of researchers who have focused on positive effects of stress on job performance of employees (Arsenault & Dolan, 1983; Kahn & Long, 1988; Organ & Konovsky, 1989; Hatton, Brown, Caine, & Emerson, 1995). The employees' job performance increases with an increase in the amount of job stress up to a certain point after which job performance starts to be negatively influenced by job stress (Scott, 1966; Organ & Lingl, 1995). A study was conducted as in laboratory experiment using rats as the sample and in this study, three trials were performed by the researchers in which low, moderate and high levels of stimulus were used. Findings of this study suggested an inverted U-shaped relationship between stress and performance of rats (Yerkes & Dodson, 1908). Studies were also conducted on human beings in workplaces and reported the similar inverted U-shaped relationship between job stress and employee performance in industrial context (McGrath, 1976; Selye, 1977a).

In more generic sense we got from the studies on positive and negative effects of stress on job performance, it can safely be assumed that job stress enhances the job performance when the stress experienced by employees is at moderate level but it has very catastrophic effect on job performance when stress experienced by people in workplaces is more than moderate or at a higher levels (Organ & Konovsky, 1989). Inverted U-shaped relationship between these

variables, however, is not generally acknowledged by many and thus it is fair to say that positive and negative relationship proposition between these two variables have gained much more popularity (Organ & Konovsky, 1989; Salami, Ojokuku, & Ilesanmi, 2010). There are few other researchers who found no relationship between job stress and job performance in their studies (Blau, 1981; Matteson et al., 1984; Orpen & Welch, 1989).

Based on the above discussion on the existing literature on the relationship between job stress and job performance, the current study came up with following set of hypotheses:

H5. Job stress has a negative effect on nurses' job performance

H5a. Anxiety has a negative effect on nurses' task performance

H5b. Anxiety has a negative effect on nurses' contextual performance

H5c. Depression has a negative effect on nurses' task performance

H5d. Depression has a negative effect on nurses' contextual performance

2.13.6 Job Stress as a Mediator in the Relationship of (Job and Personal) Demands and Job Performance

In previous sections, it was discussed that (job and personal) demands are directly related to both job stress and job performance. In this section, however, the focus is to provide evidence about the job stress acting as a mediator in some previous studies to validate the point in case that it can act as a mediator in our study between the relationship of (job and personal) demands and job performance of nurses working in private hospitals of Pakistan. Only a few studies in the past have investigated job stress as a mediator. For example, a study was conducted on 65 primary school English teachers working in Gaziantep province of Turkey in the session of 2011-2012 to put job stress to test and find out if it mediates the relationship

between organizational health and job satisfaction. The results revealed that organizational health is influence by job satisfaction both directly and indirectly through the inclusion of job stress as a mediator proving that job stress actually mediates the relationship between the two variables (Savas & Toprak, 2013).

A cross cultural study on job satisfaction, work stress and intentions to quit was conducted on 146 employees working in different sectors of Pakistan and Dubai. These sectors comprised of private banks, audit oriented firms, and petroleum companies. Primary findings of this study suggest that employees' job satisfaction was a predictor of both intentions to quit the job and work stress. Authors also found work stress to be a predictor of intentions to quite the job and finally, the major finding was that work stress successfully and significantly mediates the relationship between job satisfaction and intentions of quitting the job (Khan & Ali, 2013). Another Pakistani study was conducted on role conflict, job stress and job satisfaction of 350 employees working in private banking sector of Pakistan in order to find out how role conflict is related to both job stress and job satisfaction of employees. The authors found that role conflict is positively related to job stress while in case of job satisfaction, the variables of role conflict and job satisfaction are negatively related with each other and job stress acts as a mediator in their relationship (Qurat-ul-ain, Khattak, & Iqbal, 2013).

Additionally, in case of mediating role of job stress experienced by nurses, there are two noteworthy studies conducted in both Malaysia and Saudi Arabia. In Malaysian study, around 1300 nurses were selected from 6 major regional hospitals in peninsular Malaysia to take part in the investigation of how job demands-resources are related to both job stress and sickness absence of hospital nurses. Findings reported by this study suggest that job stress in its forms of physical and behavioral stress mediates the relationship between job demands

i.e. physical job demands and job complexity experienced by nurses, job resources i.e. performance or job feedback and sickness absence (Wah, 2014). The most important and relevant study in relation to this present study was conducted on 1443 nurses working in 9 public hospitals of Saudi Arabia in which the researcher investigated that how various elements of job demands-resources are related to job stress and job performance and if job stress mediates the relationship of job demands-resources and job performance and whether organizational support moderates the relationship of job stress and job performance of nurses. Findings revealed in this study suggest that job stress only partially mediated the relationship between job demands-resources and job performance of nurses working in those public hospitals of Saudi Arabia (Al-Homayan, 2013a).

Based on the findings discovered in above mentioned studies, it is safe to assume that job stress can act as mediator between different variables but there are only a very small number of studies that can actually be used to claim that job stress can be used as a mediator between the relationship of nurses' (job and personal) demands and job performance and this even holds more true in case of nurses working in private sector hospitals of Pakistan where there are no such studies that have used job stress as a mediator in this relationship and this is truly an astounding opportunity for a novel theoretical and contextual contribution. Hence, this study attempts to bridge this gap by investigating the mediating effect of job stress in the relationship of nurses' (job and personal) demands and their job performance (task and contextual performance) in private sector hospitals of Punjab, Pakistan.

This study came up with following hypotheses related to the mediating role of job stress in the relationship between (job and personal) demands and job performance:

H6. Job Stress mediates the negative effect of job demands on job performance.

H6a: Anxiety mediates the negative effect of job demands on task performance.

H6b. Anxiety mediates the negative effect of job demands on contextual performance.

H6c: Depression mediates the negative effect of job demands on task performance.

H6d: Depression mediates the negative effect of job demands on contextual performance.

H7. Job Stress mediates the negative effect of personal demands on job performance.

H7a: Anxiety mediates the negative effect of personal demands on task performance.

H7b. Anxiety mediates the negative effect of personal demands on contextual performance.

H7c: Depression mediates the negative effect of personal demands on task performance.

H7d: Depression mediates the negative effect of personal demands on contextual performance.

2.13.7 Moderating Role of Job Resources (Social Support)

As described earlier, job demands and job resources initiate two different psychological processes whereas job demands initiate the stress or energy depleting process and job resources initiate motivational process but it is important to note here that both of these also have interactive effects in predicting well-being of employees. By interaction effects, it means that both job demands and job resources have a joint or combined effect on well-being in both of the above mentioned processes. One of the central propositions of JD-R theory (Bakker & Demerouti, 2014, Bakker & Demerouti, 2017) is that of an interaction between job demands and job resources where job resources buffer the positive impact of job demands on job stress.

This proposition is in-line with the previous model of job stress namely Demand-Control Model (DCM; Karasek, 1979, 1998) but it offers more by explaining that there can be many

different job resources which can buffer the impact of many different job demands that exists in work environment (Bakker, Demerouti & Euwema, 2005). The question as to which job demands and job resources exist in any organization is solely dependent on certain job characteristics that may be distinct for each type of organization depending upon the nature of the work being performed there. Unlike in DCM where control or autonomy over the tasks may act as a buffer in work overload and job stress relationship, the JD-R theory goes one step further by claiming that many different types of job demands and job resources may interact with each other to predict job stress (Bakker et al., 2005). This assumption is also consistent with the work of Diener and Fujita's (1995) in which it was found that there are several potential resources that can help achieve a specific goal or a demand indicating that several different goals or demands are very much likely to be influenced a number of resources available at disposal.

After it is being proposed, there are many studies in the past which have shown that several job resources like those of autonomy, social support, opportunities for development and performance feedback can mitigate the negative effects of several job demands like work pressure and emotional demands on job strain including that of burnout (Bakker et al., 2005; Xanthopoulou et al., 2007). Bakker and Demerouti (2014, p.11) observed that "employees who have many job resources available can cope better with their daily job demands". Perhaps the most discussed and important moderator of stressors-strain relationship is that of social support, an important job resource. Social support is considered as "straightforward resource in that it is functional in achieving work goals" (Bakker et al., 2005). It was also observed that instrumental support from coworkers and supervisors can facilitate the employees in getting the work done in time and without any problems and thus it may have a role in buffering the relationship of work overload and job strain (Van der Doef & Maes,

1999). Moreover, this is also consistent with stress buffering hypothesis in which it is stated that social support serves as a protective factor against the negative outcomes of stressful situations (Cohen & Wills, 1985). The present study aims to examine the moderating role of social support (job resource) in the relationship between job demands and job stress.

On the basis of arguments presented above, this study presents following hypothesis regarding the moderating role of social support:

H8. *Social support, as a job resource, moderates the positive relationship between job demands and job stress such that higher levels of social support dampens the positive effect of job demands on job stress.*

2.13.8 Moderating Role of Personal Resources (Self-Compassion)

In a first ever empirical study on self-compassion by using the self-compassion scale, Neff (2003a) found that higher self-compassion was strongly associated with positive constructs such as life satisfaction and social connectedness which are considered as the important ingredients of a meaningful life. On the other hand, Neff (2003a) also found that higher levels of self-compassion were strongly related to less anxiety and depression, a phenomenon which can be explained by the fact that lessened self-criticism was found to be related to self-compassion. Interestingly, it was also found that self-compassion has significant negative relationship with both anxiety and depression even after controlling for self-criticism which indicated that the concept of self-compassion may have distinctive buffering effects because of the self-soothing properties of self-compassion.

Building on the seminal work of Neff (2003a), many researchers have attempted to test the moderating effect of self-compassion in various combinations of variables and their relationships. For example, Shephard and Cardon (2009) found in their study that self-compassion successfully moderated the relationship of negative emotional reaction and lower levels of satisfaction of psychological needs. In another study using moderated multiple regression analysis, Samaie and Farahani (2011) revealed that self-compassion significantly moderated the relationship between rumination and stress and also acted as a moderator in self-reflection and stress relationship. Busch (2014) also found that self-compassion buffered the effect of poor basic need satisfaction and vitality and hence weakened the relationship between these two constructs. A study on exhibiting different emotions due to indulging in social comparisons was carried out among Korean undergraduate students and revealed that the group of students having high self-compassion exhibited less negative feelings and emotions than the group having less self-compassion suggesting that self-compassion is "a potentially influential factor buffering the negative consequences of social comparisons" (Choi, Lee & Lee, 2014, p. 949).

Similarly, Ferreira et al. (2014) conducted a study on eating disorders by taking into account the association between several constructs like shame memories, self-judgement, self-compassion and eating psychopathology severity. The results revealed that self-compassion had a buffering effect on the relationship between shame memories and eating psychopathology severity. In another study, it was found that self-compassion served as a significant moderator in the positive relationship between body image satisfaction and self-esteem (Pisitsungkagarn, Taephant & Attasaranya, 2014). Moreover, Marshall et al. (2015) found that self-compassion successfully moderated the effect of low self-esteem on mental health such that in people with higher levels of self-compassion, lower self-esteem had a

negligible effect on mental health indicating that a powerful buffering effect exists. Abu Ghali (2015) in his study on Palestinian widowed women found that self-compassion significantly moderated the relationship of psychological suffering and psychological well-being. In a recent study, Chung (2016) found a buffering effect of self-compassion on the relationship between lack of forgiveness and depression such that the relationship between the two constructs was quite stronger for people having lower levels of self-compassion.

There are numerous other studies in which the moderating role of self-compassion is highlighted. For example, Körner et al. (2015) found that the composite score of three positive subscales of self-compassion scale significantly moderated the positive relationship of self-coldness (self-judgment, isolation, and over-identification) and depressive symptoms in a general population indicating that self-compassion have the influential and strong buffering effect for self-coldness that is related to depressive symptoms. In a study on Japanese undergraduate students, Shimizu, Niiya and Shigemasu (2016) examined if mastery goals provide better score on a cognitive test than performance goals and whether level of students' self-compassion and contingency of self-worth act as moderator. Their hypothesis proved to be correct such that mastery goals promoted greater score on cognitive test than do performance goals and that self-compassion and contingency moderated the relationship between achievement goals and improvement following failure.

Based on the above discussion and strong evidence of the moderating role of self-compassion in various relationships, the present study extends the JD-R theory to include self-compassion as a personal resource. Furthermore, the moderating effect of self-compassion was tested among the positive relationship of job demands (quantitative, physical and emotional demands) and job stress (anxiety and depression). To the best of researcher's knowledge, this

is a first ever study to include the concept of self-compassion in JD-R theory. Following hypothesis was derived based on the support of moderating role of self-compassion in the literature:

H9. *Self-Compassion, as a personal resource, moderates the positive relationship between job demands and job stress such that higher levels of self-compassion weakens the positive relationship between job demands and job stress.*

2.14 Conceptual Framework

Based on the above discussion, it can be inferred from the existing literature that job demands are the main factors that influence job performance of employees. More specifically job demands namely quantitative job demands, physical job demands, emotional job demands are known to negatively affect the job performance of employees. In addition to being related to job performance, these job demands in combination with personal demands are the known causes of job stress experienced by employees in various settings. How job stress is related to job performance is also highlighted in the above discussed literature.

Literature that has been reviewed in previous sections also shed light on the inclusion of job stress as a mediator in the relationship between various variables including the relationship between (job and personal) demands and job performance. The role of job resources (social support) and personal resources (self-compassion) in moderating the relationship of job demands and job stress is also outlined and was tested in this study. Figure 2.2 shows the conceptual framework of this study that demonstrates how these variables are related with each other.

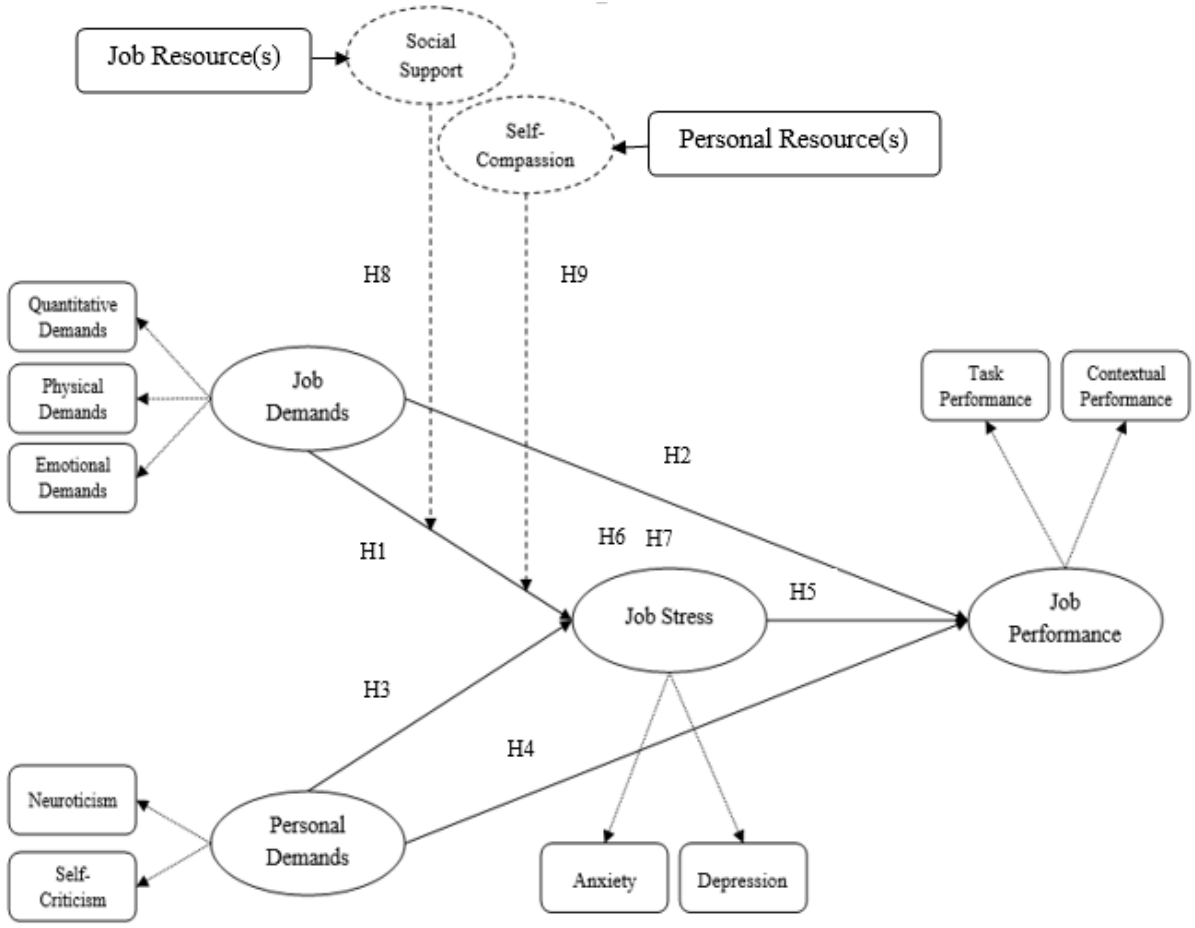


Figure 2.2: Conceptual framework for the current study (Based on JD-R theory; Bakker & Demerouti, 2014; Bakker & Demerouti, 2017)

2.15 Chapter Summary

This chapter has presented a meaningful discussion on the literature encompassing the variables used in present study and their relationships with each other according to the underpinning theories i.e. COR and JD-R theory. Based on this critical analysis and review of the existing literature, theoretical and contextual gaps have been identified. Present study was conducted to fill these research gaps. The subsequent chapter of research methodology describes the methods thoroughly to elucidate how present study was conducted, using these

variables discussed above, on hospital nurses working in private sector hospitals of Punjab province of Pakistan to achieve the research objectives stated earlier in this study.

CHAPTER 3

METHODOLOGY

3.1 Chapter Overview

In order to achieve the research objectives of present study, this chapter sheds light on how this study was conducted and what type of research philosophies, research design and approaches were followed. More specifically, this chapter entails the discussion on ontology, epistemology, and research design elements like purpose of the study, type of study, unit of analysis, time horizon of the study, population and sample, sample size, sampling technique, data collection procedure, operational definitions and measures, response rate, instrument or questionnaire design, and it also encompasses the details on which data analysis tools and techniques were used in present study.

3.2 Research Philosophy

Business and management field sits within the broader context of the social sciences, and this section offers an insight into the standard philosophical positions essential to specify the particular form of research the researcher planned to undertake in present study. According to Saunders, Lewis & Thornhill (2009, p. 124), the term research philosophy "refers to a system of beliefs and assumptions about the development of knowledge". O'Gorman and MacIntosh (2015, p. 52) offered a decent explanation for the need and purpose of selecting research philosophy, they stated that "in essence, the purpose of setting out your research philosophy is to help signal to other researchers those claims you might make in your findings, and the basis on which you would make such claims. However, it is highly likely that the same broad research question or objective could have been approached using a very different style of

research. All that you are required to do is demonstrate that you engaged in a conscientious selection and defense of what you deemed to be the most suitable approach, given your chosen topic". Thus, it can be concluded that research philosophy is what drives the research in the right direction according to the nature and objectives of the study.

According to methods map proposed by O'Gorman and MacIntosh (2015), there are two major research philosophies and/or paradigms that dictates the directions of research i.e. ontology and epistemology. Whitehead (2013, p. 23) defined ontology "as the study of existence. It provides the 'world-view' that guides the study (e.g. 'What is the nature of reality?'; 'What kind of being is the human being?')". Easterby-Smith, Thorpe and Jackson (2015) described ontology as "the basic assumptions made by the researcher about the nature of reality." Ontology can further be divided into two types of objective ontology and subjective ontology.

An objective ontology "assumes that reality exists independently of our comprehension of it, and that it is possible to establish and explain universal principles and facts through robust, replicable methods" and subjective ontology "assumes that our perceptions are what shape reality, and this is a belief expressed in large sections (though not all) of the social sciences. A subjective ontology sees facts as culturally and historically located, and therefore subject to the variable behaviors, attitudes, experiences, and interpretations – what we call the subjectivity – of both the observer and the observed. Subjective ontology approaches reality as multiple in the sense that each individual experiences their place and time in the world in a different way" (O'Gorman & MacIntosh, 2015, p. 57).

Objective ontology was selected for present study because researcher believe that reality exists regardless of our understanding about it and thus we need to know about the subject

objectively and so the data was collected to observe and test the relationships among several variables in present study. After considerations about ontology has been made, it is important that on the basis of the selection of ontological stance, researcher must then make decisions about the epistemological part of the research philosophy.

Epistemology can be described as assumptions about the required knowledge and deciding about what constitutes legitimate, acceptable, and valid knowledge, and how this acquired and/or required knowledge can be communicated to others (Burrell & Morgan, 1979). According to O'Gorman and MacIntosh (2015, p. 58) "epistemology concerns the way in which we obtain valid knowledge. The methods map illustrates four epistemological positions: positivist, critical realist, action research, and interpretivist. Although there are others, articulating your epistemological position in relation to these four allows you to define your own ideas about the way in which we decide what constitutes reliable knowledge". Although all of these epistemological positions are important in their own right, this study has adopted positivist epistemology as it is considered most suitable in terms of finding the objective reality of the topic under investigation and is in line with the assumptions of objective ontology.

Positivism is "a paradigm that assumes human behavior is determined by external stimuli and that it is possible to use the principles and methods traditionally employed by the natural scientist to observe and measure social phenomena" (MacDonald & Headlam, 2008, p. 67). Put differently, positivism is "a research philosophy that views reality as something that can be objectively ascertained and described through research" (Hair et al., 2016). According to Easterby-Smith et al. (2015, p. 69), "positivist methods usually incorporate the assumption that there are true answers, and the job of the researcher is either to start with a hypothesis

about the nature of the world, and then seek data to confirm or disconfirm it, or the researcher poses several hypotheses and seeks data that will allow selection of the correct one". Saunders et al. (2009, p. 127) argued that "the (positivist) assumption that objective facts offer the best scientific evidence is likely to result in the choice of quantitative research methods". Considering all these points, it was deemed appropriate to use the positivist epistemological stance because of the nature and objectives of present study which are to confirm the main assumptions of JD-R theory and its hypothesized paths objectively without intervening in the research process and research settings.

3.3 Research Design

According to Zikmund, Babin, Carr and Griffin (2013), research design can be described as a master plan that sketches the methods and processes for collection and analysis of data. Cooper and Schindler (2013) attempted to define research design as a process which dictates how to conduct the research in order to answer research questions and achieve research objectives. They further described the 'how to' part of their definition as in how to select the sample, how to collect the data, how to measure different constructs, and how to analyze the data. They argued that researchers take assistance from research design when they find themselves in trouble of allocation of insufficient resources in terms of time and cost because research design allows researchers to choose from various techniques that can be employed in methodology section. Various elements of research design including research approach and purpose of study, type of investigation, study setting, unit of analysis, and time horizon of the study are discussed next.

3.3.1 Research Approach and Purpose of Study

Research studies are segregated into two different research approaches which researchers usually employ while trying to find the answers to the research questions posed in their studies. These approaches are further divided into two categories of quantitative approach and qualitative approach (Hair et al., 2007; Cooper & Schindler, 2013; Sekaran & Bougie, 2013; Zikmund et al., 2013). Quantitative research can be defined as the study of measuring accurate and exact reckoning of behaviors, attitudes, knowledge, and/or opinions (Cooper & Schindler, 2013). It can also be described as a study in which researchers addresses the objectives of the research during empirical evaluations that requires measurement and analysis of data to be numeric in nature (Zikmund et al., 2013). Present study is quantitative in nature because it tends to examine the relationship of (job and personal) demands with job performance of nurses and measure the effect of job stress as a mediator in the relationship of (job and personal) demands and nurses' job performance while taking into account the moderating effects of both (job and personal) resources on the relationship of job demands and job stress. The data which was collected from nurses to measure the effects of above mentioned variables was also quantitative in nature.

The research studies can be segregated on the account of their purpose. Purpose of different studies can vary from being exploratory study, descriptive study, hypothesis testing (analytical and predictive), and case study (Sekaran & Bougie, 2013). The fact that which data collection method needs to be employed depends on the very purpose of study. The present study's purpose is to test the hypotheses and confirm the propositions of JD-R theory (Bakker & Demerouti, 2017). Sekaran and Bougie (2013) explained in their book of research methodology that the researchers who usually employ hypothesis testing in their studies are

often interested in finding out the nature of specific relationship among variables, or to measure the differences in means of different groups, or to explore the independence of two or more variables in a given setting or situation. This is usually carried out when researchers want to explain the variation in dependent variable and/or to predict certain organizational outcomes.

3.3.2 Type of Study

There are two main types of research investigations namely causal and correlational investigations as described by Sekaran and Bougie (2013) in their book, "the study in which the researcher wants to delineate the cause of one or more problems is called a causal study. When the researcher is interested in delineating the important variables associated with the problem, the study is called a correlational study" (p.142). Although one way arrows pointing from independent variables towards dependent variables were drawn to find out if certain variables can predict the outcomes but present study is correlational in nature as it is quite difficult to find the true nature of cause and effect without collecting data in different points of time and due to this, it could not be determined if the cause occurred before the effect (Field, 2013). This study has tried to investigate the relationships between (job and personal) demands and job stress; and between job stress and job performance of nurses according to the set propositions in JD-R theory.

3.3.3 Researcher's Interference

The extent to which researcher interfere with the study environment is also an important factor in determining the type of study. The interference with the study environment can be minimal, moderate and excessive (Sekaran & Bougie, 2013). In the present study, researcher's interference in the study was minimal and was solely restricted only to

distributing and collection of questionnaire from nurses and researcher did not interfere in normal activities performed by nurses and operations of hospital. The researcher was only interested in having the primary data collected from nurses himself so as to have firsthand information about the contributing factors of nurses' job and personal demands, job and personal resources, job stress and their job performance.

3.3.4 Study Setting

Research studies may be carried out in different settings which are natural or artificial in nature. These study settings also depends on the type of study one opt to choose for achieving the research objectives. These study settings can be segregated in two types namely contrived and non-contrived study settings (Sekaran & Bougie, 2013). This study was performed in a non-contrived environment which is natural in nature i.e. nurses working in private sector hospitals of Pakistan. Causal studies conducted in the field of science and related fields are often conducted in contrived or lab settings. Testing the causal or correlational relationships in natural environments or non-contrived settings are also known as field experiments.

3.3.5 Unit of analysis

The unit of analysis simply answers the question of whether the sample one select to study is individual, dyad in nature, group based, organization based or culture specific. It is explained by the level of aggregation of the data during the stage of data analysis (Sekaran & Bougie, 2013; Zikmund et al., 2013). As described earlier, the present study tends to examine nurses in terms of their experiences related to stress and perceptions about their performance in terms of their tasks and extra-role behaviors. Thus the unit of analysis in this study was individual i.e. nurses in this case.

3.3.6 Time Horizon

Research studies can also be differentiated in terms of time horizon which is needed to collect data. These studies are usually categorized as cross sectional or one-shot studies and longitudinal studies (Hair et al., 2016). Present study is cross sectional in nature. A study is cross sectional when the data are collected in one-shot or at one-time. The time span of this data collection may range from several days to several months but the data is not intended to be collected again in future. The selection of cross sectional research design in present study is because of the reason that "some types of information once collected cannot be collected a second time from the same person without the risk of bias and while longitudinal research is important, the constraints of budget and time impose the need for cross-sectional analysis. Some benefits of a longitudinal study can be revealed in a cross-sectional study by adroit questioning about past attitudes, history, and future expectations" (Cooper & Schindler, 2013, p. 128). On the other hand, data collection in longitudinal studies is carried out at different point of times to check the variation of results over that period of time (Zikmund et al., 2013). Another approach of diary studies is used these days to collect data every day or every week to check daily or weekly fluctuation in results (Bakker & Xanthopoulou, 2009; Bakker & Sanz-Vergel, 2013).

3.4 Population, Sample and Sampling Technique

This section of methodology describes in detail the target population of the study along with sampling, sample size and how this sample size was determined, and sampling technique to draw a sample out of population that best represents the characteristics of the population. This

section also encompasses details on why this population was selected for this study and describes the method used to draw sample from this identified target population.

3.4.1 Population of the Study

Population as described by Cooper and Schindler (2013) is a set of all the events, records or people through which the desired information can be skimmed about a certain set of questions. It can also be defined as a set of people or observations that can help select a sample for investigation of various variables in a study (Malcolm & Blerkom, 2008). As the present study aimed to investigate the nurses for information regarding their stressful experiences and job performance in a private hospital environment; thus all the nurses working in private sector hospitals of Pakistan comprised the population of this study. Number of nurses working in private healthcare organizations in Pakistan are 94,766 in total as reported by Pakistan Bureau of Statistics in their Pakistan Statistical Year Book (PBS, 2015).

The reason of only selecting nurses in private hospitals and not in public healthcare settings is because of the nature of this study. It is generally observed that private hospitals have less resources than government hospitals, they focus more on skimming the profits out of patients' pockets and thus do not focus on improving the working conditions of their staff. Moreover, there is a great deal of shortage of nursing staff in private hospitals of Pakistan thus nurses working in private sector hospitals often experience more stress in their jobs than their counterparts in public healthcare facilities because they have to do too much in too little time along with encountering and performing emotionally and physically challenging tasks in their job. Due to the reasons mentioned, it can be safely assumed that nurses working in private

sector hospitals of Pakistan in general find their jobs more demanding and stressful especially in major cities where there is high density of population.

3.4.2 Sample Size

Sample is drawn from the population by using a method of sampling which is said to be a process used to select the elements from the target population in order to be a symbol or representative of the whole population (Cooper & Schindler, 2013). Sample should be selected from whole population, it should best represent the whole population, and results obtained from sample should be easily generalizable for whole population (Ruane, 2005). Sampling is important because it is almost impossible to collect the data from every element of the population in the given time (Sekaran & Bougie, 2013; Zikmund et al., 2013). Sample size, on the other hand, is the required number of units in a sample to get the best picture of whole sample and to get better and accurate results (Fink, 2002). It "refers to the number of items to be selected from the universe to constitute a sample. This is a major problem before a researcher. The size of sample should neither be excessively large, nor too small. It should be optimum. An optimum sample is one which fulfills the requirements of efficiency, representativeness, reliability and flexibility. While deciding the size of sample, researcher must determine the desired precision as also an acceptable confidence level for the estimate" (Kothari, 2004, p. 56). It is rightfully argued that selecting and choosing the right and suitable sample size is very much important as its authenticity and quality help generalize the findings to the whole population considering the time, cost and effort constraints (Gill & Johnson, 2002).

It is unfortunate to find out that there is little to no consensus among researchers about the selection of appropriate sample size in the existing body of knowledge of multivariate

research methods. However, almost everyone agrees that the larger the sample size, the better. It is because of the fact that small samples usually result in unreliable and insignificant findings which in turn make all other efforts and purpose of study to fail (Pallant, 2016). It was argued that researcher can care less about data normality issues if sample size reaches 200 cases or more because normality issues largely affect the studies with small sample sizes (Hair et al., 2010; Arbuckle, 2015). Moreover, covariance based structural equation modeling (CB-SEM) "requires 5-10 observations per indicator, which makes the sample size requirements large even for relatively simple models" (Hair, Gabriel & Patel, 2014, p. 46). In a relatively recent Monte Carlo based computer simulation study, Wolf, Harrington, Clark, and Miller (2013) found that there is great amount of difficulty in justifying "one-size-fits-all" assumption about sample size requirements and rule of thumbs in studies using SEM. Determination of sample size is not a simple matter as it depends on several important factors such as complexity of the model, type of measurement scale and/or variables, reliability, precision, power, the amount of missing data and number of indicators (Kline, 2016).

Kline (2016) further mentioned in his book that in various previous studies conducted in different dicipines, 200 was the median sample size. Barrett (2007) found that editors of good journals routinely rejects the submitted papers where sample size is lower than 200 suggesting that smaller sample size is often problematic so 200 should be an absolute minimum sample size especially for studies employing CB-SEM to test complex models. Westland (2010) examined a total of 74 SEM based studies that were published in four major journals in Management Information Systems (MIS) discipline and found that the average sample size across these studies was about 375. Therefore, it is observed that if the researcher or investigator increases the sample size, there are less chances of errors (Zikmund et al., 2013).

How large a sample size should be for a known population is the question that was best answered by Krejcie and Morgan (1970) who proposed the following formula:

$s = X^2 NP (1\text{-}P) \div d^2 (N\text{-}1) + X^2 P (1\text{-}P)$

Where,

s = required sample size

X^2 = chi-square tabulated value when df = 1 at the desired level of confidence (3.841)

N = the population size

P = the population proportion (assumed to be .50 since this would provide the maximum sample size)

d = the degree of accuracy expressed as a proportion (.05).

According to this formula, a table was created for various population sizes and the required suitable sample sizes for those various populations. For present study, appropriate sample size to study the effects of (job and personal) demands and (job and personal) resources on job stress and job performance of nurses working in private sector hospitals of Pakistan (94,766 nurses) is 384 as shown in Table 3.1. This sample size is considered adequate because it is more than 200 which should the absolute minimum for SEM based studies (Barrett, 2007; Kline, 2016). It is even higher than the average sample size of 375 found in large number of previous studies (Westland, 2010) and is according to the established and widely used formula of Krejcie and Morgan (1970). Moreover, power analysis was conducted using the software of G*Power version 3.1 (Faul et al., 2009) with a statistical power of 0.80 as suggested by Hair et al. (2010) but it was found that sample size of 384 was way higher than

the obtained minimum sample size in this software so 384 was retained as this study's sample size as higher is always better.

Table 3.1: Suitable sample sizes for various populations

Population	Appropriate Sample size
100,000	384
75,000	382
30,000	379
10,000	370
5,000	357

Source: Krejcie & Morgan (1970), p. 608

After determining the appropriate sample size for the study to be conducted, it is always best to describe in next section the details on how this sample was selected by using a sampling technique.

3.4.3 Sampling Technique

There are two main types of sampling techniques i.e. probability sampling technique and non-probability sampling technique. Both of these sampling techniques further cater different sampling techniques under their umbrella. This study has used a probability sampling approach. In order to apply a sampling technique, it is essential to develop a sampling frame of the population. Sampling frame is a process of arranging the elements of population to identify the characteristics of population (Ruane, 2005). Sampling frame revealed the complex nature of the population as it involves several locations and regions. Considering the complex nature of population, the study has chosen probability sampling technique of multistage cluster sampling to draw sample from the population. This particular type of probability sampling technique is fruitful when the study's population is segregated into

different geographical clusters and the researcher could not easily access every region due to time and cost constraints (Sekaran & Bougie, 2013, p. 254).

Pakistan is a huge country comprising of 8 geographical clusters in which there are 5 provinces, one federal capital, another federally administered tribal area (FATA) and Pakistani administered portion of Kashmir (Pakistan Bureau of Statistics, 2015), the list of which is shown in the Table 3.2 which shows the name of these regions along with their capitals and population.

Table 3.2: Geographical Clusters in Pakistan

Administrative Division	Capital	Population
Balochistan (P)	Quetta	7,914,000
Khyber Pakhtunkha (P)	Peshawar	28,000,000
Punjab (P)	Lahore	101,000,000
Sindh (P)	Karachi	42,400,000
Gilgit Baltistan (P)	Gilgit	1,800,000
Federal Capital Territory (F)	Islamabad	1,151,868
FATA (F)	Federal Territory	3,176,331
Azad Kashmir (I)	Muzaffarabad	4,567,982
Pakistan	**Islamabad**	**182,000,000**

Source: Pakistan Bureau of Statistics (2015)

As shown in the Table 3.2, Pakistan is a large country consisting of 8 geographical clustors with a lot of population. Hence, it is practically impossible to probe the nurses from each of the above mentioned clustor in the given time and thus the use of multistage sampling was preffered. Hence, in the first stage of sampling, Punjab province was selected from these 8 regions. The reasons behind the selection of Punjab region were manifold. First of all, as

shown in the table above, it is the most populous province of the country. Secondly, it houses largest number of private hospitals in the country, it employs most number of nurses and there is representation of all other geographic regions as Punjab province is also the most important destination for working class due to better infrastructure, opportunities and facilities as compared to other provinces. In second stage of sampling, private sector hospitals having the bed capacity of 200 and above, were selected from the list of private hospitals provided on a special request made to Director of Clinical Governance & Organizational Standards, Punjab Healthcare Comission. The reason for selecting these hospitals on the basis of higher bed capacity was because most nurses were employed in these hospitals and patient flow is considerably higher than other smaller hospitals with less number of beds. In third stage of sampling, nurses working in these hospitals were selected on the basis of simple random sampling through a list of employees provided by human resource department of each hospital.

3.5 Data Collection Method

There are numerous methods for data collection including observation, personal diaries, focus groups, interviews and questionnaires. Data collection method that is usually employed in a study depends solely on the type or nature of the study. Primary data is often collected when there is a need for firsthand information and secondary data can be obtained from already published reports, magazines and financial statements. Unstructured interviews and focus groups are usually used by researchers when they need to have in depth and relatively unknown information while structured interviews are often accompanied by structured questionnaires and interviewer in this case controls the interview in a consistent and orderly approach (Hair et al., 2007; Cooper & Schindler, 2013). Interviews further have many types

including face to face interviews, online interviews, panel interviews, and telephonic interviews. It is usually observed that face-to-face interviews are costly specially when the sample of study is geographically segregated and interviewers need more time and preparation for conducting them (Sekaran & Bougie, 2013; Zikmund et al., 2013; Hair et al., 2016).

On the contrary, questionnaires are normally used when the researcher needs to have a specific answer or information regarding any problem or situation. It also has two main types of structured questionnaires and unstructured questionnaires. Structured questionnaires always carry close ended and well defined questions or statements and the person completing it has to find well defined answers from which he/she have to choose the best answer according to his or her perception. Unstructured questionnaires, on the other hand, usually contain open-ended questions (Bryman, 2005). As the present study is quantitative in nature and the researcher wants to have a specific piece of information from nurses about the variables in study, structured questionnaires were used as a method of data collection. It is an efficient way of data collection especially when the researcher is very much clear and aware about what is required in shape of information from the sample subjects and when there are measures available to probe the responses on certain variables (Cooper & Schindler, 2013; Sekaran & Bougie, 2013).

There are many types of structured questionnaires including self-administered questionnaire, mail questionnaire, and online questionnaire. In the present study, self-administered questionnaire was used to collect data from nurses working in private sector hospitals of Punjab, Pakistan. Self-administered questionnaires allow the sample objects to read the questionnaire and get the necessary information related to completing the questionnaire in

best possible way from the researcher (Zikmund et al., 2013). Researcher personally visited all the selected hospitals and distributed and collected the data from nurses in the province of Punjab. Table 3.3 below shows the name of selected private hospitals, the cities in which they are located, total number of nurses employed in those private hospitals and the number of questionnaires distributed in each hospital.

Table 3.3: Questionnaire Distribution in Private Hospitals

Name of Hospital	City	Total No. of Nurses	No. of Questionnaires
Gulab Devi Chest Hospital	Lahore	932	65
Madina Teaching Hospital	Faisalabad	805	55
Arif Memorial Teaching Hospital	Lahore	794	45
Ibn-e-Seena Hospital & Research Institute	Multan	682	40
Kishwar Fazal Teaching Hospital	Sheikhupura	636	35
Sughra Shafi Medical Complex	Narowal	568	35
Fatima Memorial Hospital	Lahore	466	35
Islam Teaching Hospital	Sialkot	404	30
Pak Red Crescent Teaching Hospital	Kasur	378	25
Fazle Omar Hospital	Chiniot	322	25
Christian Hospital	Rawalpindi	288	20
Rafiq Anwar Memorial Trust Hospital	Gujranwala	256	15
University Of Lahore Teaching Hospital	Lahore	226	15
Farooq Hospital	Lahore	198	10

3.6 Operational Definitions and Measures

In first chapter, conceptual definitions of the key terms and concepts are already described but in this section, the researcher intends to operationalize those definitions according to present study along with describing the characteristics of the scale for each construct used in this study. Details regarding the operationalization and use of measures in present study is as follows:

3.6.1 Job Demands

Job demands refer to "those physical, psychological, social, or organizational aspects of the job that require sustained physical or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological or psychological costs" (Demerouti et al., 2001). The job demands variables in this study comprise of quantitative demands, physical demands and emotional demands. Fourteen items were used to measure job demands variables.

3.6.1.1 Quantitative Demands

Quantitative job demands refer to "work overload or work pressure or too much work to do in too little time" (Peeters et al., 2005, p. 45). In this study, quantitative job demands referred to as the nurses' workload, work-pace and time pressure. The scale for quantitative job demands was originally a 4 item scale which is included in Copenhagen Psychosocial Questionnaire (COPSOQ; Kristensen & Borg, 2003). The sample item is "How often do you lack time to complete all your work tasks?" One item was later added in a study to make this scale more relevant for nursing profession (van der Heijden et al., 2008). The item which was later included is "Do you have enough time to talk to patients?" In this study, this extended version was used having 5 items whose internal consistency (Cronbach's alpha) was reported to be

0.75 in a study by van der Heijden et al. (2008). All of these 5 items were assessed using 5 point Likert scale where 1=Never and 5=Always.

3.6.1.2 Physical demands

Physical demands are defined as "the extent to which the job requires strenuous movements like bending, physical strength, lifting, or carrying objects" (Demerouti & Geurts, 2004, p. 293). In this study, physical demands mean the physical requirements of the nursing job in terms of taking care of the patients in a day to day manner. It was measured by a relatively recent scale from the DISC Questionnaire, English version 2.1 developed by De Jonge et al. (2009). This scale has 5 items in which participant nurses were asked to provide information as to how frequently they are required to perform the physically demanding tasks at their job. Sample items were "I have to perform a lot of physically strenuous tasks to carry out my job" and "I have to work in uncomfortable or impractical postures to do my work". All of these 5 items were assessed using a 5 point Likert scale in which 1=Never and 5=Always. The reliability score (Cronbach's alpha) of this scale was 0.89. Moreover, in a recent national cross validation study, Bova, De Jonge and Guglielmi (2015) found that it is reliable and valid scale to measure physical job demands.

3.6.1.3 Emotional demands

Emotional demands refer to "the extent to which employees are confronted in their job with things or persons that touch them personally" (Demerouti & Geurts, 2004, p. 293). In this study, emotional demands refer to as the activities or tasks performed by nurses that are emotionally demanding in nature and nurses are touched emotionally and personally by requiring to perform these tasks. These demands were assessed by using a 4 items scale which

was developed specifically for healthcare professionals by De Jonge et al. (1999). Participant nurses were asked to report their encounter with emotionally challenging situations at work such as “death”, and “illness or any other human suffering” on a 5 point Likert scale which ranged from (1) Never to (5) Always. Cronbach’s alpha value for this scale was 0.78 as reported by van der Heijden et al. (2008).

3.6.2 Personal Demands

Personal demands can be defined as “the requirements that individuals set for their own performance and behavior that force them to invest effort in their work and are therefore associated with physical and psychological costs” (Barbier et al., 2013, p. 751). In this study, personal demands were operationalized by measuring two personal vulnerability factors of neuroticism and self-criticism both of which are considered to be associated with additional psychological costs and are risk factors that make people more likely to experience stress. A total of 14 items were used to measure the variables of personal demands. The two demands representing personal demands and their operationalization for present study are discussed next.

3.6.2.1 Neuroticism

Neuroticism “is a personality dimension that is described by adjectives such as tense (vs. relaxed), nervous (vs. at ease) and moody (vs. steady) and inversely labelled as emotional stability” (Denissen & Penke, 2008, p. 497). In this study, neuroticism was used to find out if nurses are nervous, not calm, not relaxed, easily depressed, moody, worried and/or tensed. Generally it was operationalized in terms of finding out if nurses can handle the stress of their jobs well or not. A total of 8 items were used to assess neuroticism in present study. These

items were adopted from the neuroticism factor of Big Five Inventory (BFI; John & Srivastava, 1999). Respondents were asked to indicate their level of agreement with these statements using a 5 point Likert scale where 1=Strongly Disagree and 5=Strongly Agree. An item from this scale is "I see myself as someone who gets nervous easily". Out of these 8 items, 3 items (Item number 58, 61 and 63 in questionnaire; refer to Appendix) were reverse coded which, during data analysis, were recoded or transformed so that a high value indicates the same type of response on every item.

3.6.2.2 Self-Criticism

Self-criticism (SCr) is defined "as individuals' tendency to set unrealistically high self-standards and to adopt a punitive stance toward one's self" (Rudich et al., 2008). In present study, self-criticism was operationalized as nurses' harsh and punitive stance towards themselves due to setting unrealistically high standards for themselves to provide compassionate care to their patients/clients. A total of six items were adopted from the self-criticism factor of Depressive Experiences Questionnaire (DEQ) using the same rationale as presented by Rudich et al. (2008) who found an adequate internal consistency for three studies utilizing DEQ-SC6 ranging from 0.73 to 0.76 and concluded that DEQ-SC6 is a reasonable, reliable and valid brief measure of trait self-criticism. Sample item from the 6 items is "I tend not to be content with what I have". These 6 items were assessed using a 5 point Likert scale on which nurses have shown their agreement/disagreement where 1=Strongly Disagree and 5=Strongly Agree.

3.6.3 Job Resources

Job resources refer to “those physical, psychological, social, or organizational aspects of the job that (a) are functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; or (c) stimulate personal growth, learning, and development” (Demerouti et al., 2001). In this study, job resources were measured by using the concept of social support (received from supervisor and from coworkers). Total of four items were used to indirectly measure the concept of job resources.

3.6.3.1 Social Support

Gottlieb (2000, p. 28) defined social support as “the process of interaction in relationships which improves coping, esteem, belonging, and competence through actual or perceived exchanges of physical or psychosocial resources”. In this study, social support was operationalized in terms of assessing if nurses are heard and treated well by both their coworkers and supervisors and if they can count on their colleagues and superiors for assistance and support in their work related duties. Social support, in this study, was measured by a 4-item scale adopted from Copenhagen Psychosocial Questionnaire (COPSOQ; Kristensen & Borg, 2003) which comprises of items like “How often do you get help and support from your colleagues?” Respondents were asked to report the frequency with which they encounter the situations mentioned in these four statements on 5 point Likert scale where 1=Never and 5=Always. The reliability (Cronbach's alpha) of this scale was 0.81 which is considered above satisfactory.

3.6.4 Personal Resources

Personal resources are the aspects of the self which are associated with resiliency and refer to a sense of control and impact upon the environment (Hobfoll et al., 2003) or; personal resources refer to "developable systems of positive beliefs about one's self and the world which motivate and facilitate goal-attainment, even in the face of adversity or challenge" (Van den Heuvel, Demerouti, Schaufeli, & Bakker, 2010, p. 129). In this study, a variable associated with resiliency i.e. self-compassion was used to measure nurses' personal resources. A total of 12 items were used to indirectly measure personal resources.

3.6.4.1 Self-Compassion

Self-compassion "entails being kind and understanding toward oneself in instances of pain or failure rather than being harshly self-critical; perceiving one's experiences as part of the larger human experience rather than seeing them as isolating; and holding painful thoughts and feelings in mindful awareness rather than over-identifying with them" (Neff, 2003b, p. 223). Moreover, it can be stated that self-compassion "simply represents compassion turned inward and refers to how we relate to ourselves in instances of perceived failure, inadequacy, or personal suffering" (Neff, 2016, p. 265). Although there are three main components of self-compassion concept and is measured as such in its scale (Self-Compassion Scale- Long Form; 26 items; Neff, 2003b) but a short version of the scale comprising of 12 items was used to assess nurses' self-compassion (Self-Compassion Scale–Short Form; SCS–SF; Raes et al., 2011) because a total score of self-compassion was required. Out of these 12 items, 6 were reverse coded (Item number 19, 22, 26, 27, 29, 30 in questionnaire; refer to Appendix) which were later transformed/recoded during data analysis using SPSS software so that every item flows in the same direction and measure the intended construct effectively.

This scale has “a near perfect correlation with the long scale when examining total scores. We do not recommend using the short form if you are interested in subscale scores, since they’re less reliable with the short form. The SCS–SF thus represents a reliable and valid alternative to the long-form SCS, especially when looking at overall self-compassion scores.” (Raes et al., 2011, p. 250). The items of this scale (ranging from 19 to 30) can be found in the questionnaire used for present study. A sample item was “When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people”. Participants were asked to answer to these questions on a five point Likert scale where 1=Never and 5=Always. The scale had an internal consistency of 0.86 and is considered as “a valid and theoretically coherent measure of self-compassion” (Neff, 2016, p. 264). Item parceling technique for SEM was used to further reduce the items to half i.e. 6 items for final analysis. This was accomplished simply by taking the average of items that exists in same factors (Matsunaga, 2008).

3.6.5 Job Stress

Lazarus and Folkman's (1984) defined stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being". In this study, stress was operationalized as the stress nurses experienced in their jobs due to high job and personal demands in their workplaces i.e. private hospitals. Job stress was measured by using two indicators of anxiety and depression as they best represent the concept of job stress (Griffin, Greiner, Stansfeld, & Marmot, 2007; Tremblay & Messervey, 2011). A total of 9 items were used to measure the concept of job stress in present study which ranged from 31 to 39 in the questionnaire developed for this study.

3.6.5.1 Anxiety

According to American Psychological Association, anxiety "is an emotion characterized by feelings of tension, worried thoughts and physical changes due to surrounding environment, situations and people" (APA, 2016). In this study, anxiety was operationalized as the frequency with which nurses felt they were anxious, under constant strain, felt nervous, panicky without any apparent reason, lost sleep by worrying due to job related activities. Scale consisting of 5 items derived from the 30-item General Health Questionnaire (GHQ-30; Goldberg, 1972) was used to evaluate anxiety symptoms for present investigation. A sample item from the scale is "Because of your work, have you recently been feeling nervous and strung-up all the time?" The respondents were asked to answer these questions on a 5 point Likert scale where 1=Never and 5=Always. Griffin et al. (2007) reported in their study that anxiety scale had an alpha coefficient of 0.87.

3.6.5.2 Depression

According to American Psychiatric Association's famous manual i.e. Diagnostic and Statistical Manual of Mental Disorders, 5th Edition: DSM-5 (DSM-V, 2013, p. 409), depression is defined as "a state of low mood and aversion to activity that can affect a person's thoughts, behavior, feelings and sense of well-being". However, present study operationalized depression on the basis of job related stressors that make nurses sad and hopeless and their well-being is affected as a result. Four items were taken from 30 items in overall General Health Questionnaire (GHQ-30; Goldberg, 1972) to measure prevalence of depression in this study. A sample from these items is "Because of your work, have you recently found at times you couldn't do anything because your nerves were too bad?" The participants were requested to answer against these items on a 5 point Likert scale where

1=Never and 5=Always. Griffin et al. (2007) found in their reliability analysis that the depression scale had an alpha coefficient of 0.89.

3.6.6 Job Performance

Job performance is defined in terms of the entire projected value to the organization of distinct actions or behaviors performed by an employee over time (Motowildo, 2003, p. 39). In this study, job performance of nurses was measured by two factors of task and contextual performance. 11 items were used to assess nurses' job performance in present study.

3.6.6.1 Task performance

Task or in-role performance is the most important dimension of employees' job performance as it is relevant for every job and is described as those results and actions that are required by the organizations and these outcomes or tasks are directly related to achieving organizational goals (Motowidlo & Van Scotter, 1994, p. 476). In this study, task performance was operationalized in terms of asking nursing working in private sector hospitals of Pakistan if they are fulfilling all the requirements of their job mentioned in their job descriptions. Task performance, in this study, was measured with an adopted 5-items scale developed by Goodman and Svyantek (1999). Respondents were asked to indicate if and how much the situations mentioned in these five statements like "I fulfill all the requirements of the job" and "I am competent in all areas of the job, handle tasks with proficiency" characterizes them on a 5-point Likert scale ranging from (1) Strongly Disagree to (5) Strongly Agree. Cronbach's alpha (internal reliability) of the scale was 0.78.

3.6.6.2 Contextual Performance

Contextual or extra-role performance or citizenship performance of employees is described as those voluntary and discretionary actions performed by the employees that are related to effective functioning of an organization but are not essentially related to employees' productivity (MacKenzie, Podsakoff, & Fetter, 1991). In this study, contextual performance was taken as those activities or tasks that are not the part of nurses' job description but they do it anyway to support the better functioning of their hospitals and to improve the quality of care they provide to their patients. It is measured by a self-reported six item unifactorial citizenship performance scale developed by Poropat and Jones (2009) having the reliability (Cronbach's alpha) of 0.84. The sample item for this scale is "I consistently take the initiative to pitch in and do anything that might be necessary to help accomplish team or organizational objectives, even if such actions are not normally part of your own duties."

All items were asked by using a 5 point scale where 1= Strongly Disagree and 5= Strongly Agree. Participants were asked to indicate the extent to which these 6 items characterize them and their contextual performance. This scale has comparable internal reliability value in terms of Cronbach's alpha, better structure in terms of internal factors, and superior external validity than most of the other popular scales for contextual, extra role, or citizenship performance (Poropat & Jones, 2009). Only 1 item (Item number 54 in questionnaire; refer to Appendix) out of these 6 items was reverse coded i.e. "I avoid performing any tasks that are not normally a part of my own duties by arguing that they are somebody else's responsibility" which was later transformed/recoded during data analysis so that high value on each item indicate the same kind of response.

3.7 Questionnaire Design

The questionnaire which was prepared for this study is in booklet style and is mainly segregated into two sections in which first section contains 64 items/questions for 11 variables in the current study and second section covers demographic questions regarding the participant nurses in this study. Designing questionnaire in booklet format has many advantages for instance (a) it makes sure that pages stays intact and are not easily lost or misplaced, (b) it is easier to turn pages for respondents in this format of questionnaire, (c) it looks elegant, professional and easier to follow, and (d) it ensures the use of double page format for statements about numerous events or persons (Sudman & Bradburn, 1982). The respondents were asked to circle the most appropriate response to a certain statement and for multiple choices in demographics part, they were asked to tick mark their responses in a box for whatever they think are the suitable choices.

At the beginning of the questionnaire, an introductory letter was attached to the final version of the questionnaire before distribution. This letter introduces the study, describes the purpose of the study, persuades respondents to complete the survey with the guarantee of anonymity and confidentiality of their identities and responses, and guides them on how to return the questionnaires after completing them i.e. to the researcher who is personally administering it. This letter also persuades the respondents to contact the researcher in case they need to know more about the study and its outcomes.

Sekaran and Bougie (2013) argued that an opening letter with this type of information is considered essential because it helps in improving the response rate and provides clarity as to why the respondents were asked to fill the survey. Moreover, this is further attested and endorsed by Lancaster (2005, p. 145) who believed "there should be a covering letter

explaining what the survey is all about, how the results will be used, and whether or not replies are anonymous (often preferable). The route through the questionnaire needs to be clear – how should questions be answered (for instance, tick, ring, underline, giving a number, letter); whether 'if then' consequences are clear".

3.8 Response Rate

According to Tharenou, Donohue & Cooper (2007), "the response (or return) rate is the percentage of members of a sample who respond to a questionnaire (or other instrument) from those eligible" (p. 64). Moreover, it was observed that "at its simplest level, response rate refers to the number of survey responses divided by number of individuals to whom the survey was administered" (Saldivar, 2012, p. 4). It is noted that "low response rates may result in biased conclusions because non-respondents may have a different perspective on the topic under investigation" (Hair et al., 2016, p. 132). Although a higher response rate is desired in order to avoid the non-response error and improve generalizability (Dillman, 1991; Saldivar, 2012), there is no such consensus exists as to how high a response rate should be as Fowler (2002, p. 42) rightly pointed out that "there is no agreed-upon standard for a minimum acceptable response rate." Weathington, Cunningham and Pittenger (2012, p. 190) suggested that "the easiest thing you can do as a researcher to increase response rate is to make sure you do not give your sample members an easy excuse for not completing the survey immediately". Different survey types yields different response rates.

As described earlier, present study has adopted self-administered questionnaire as a data collection method. This type of administration of questionnaires increases the likelihood of a good response rate (Sekaran & Bougie, 2013). In order to obtain at least 384 responses (sample size of present study), researcher distributed and administered 450 questionnaires to

nurses working in various private hospitals of Punjab, Pakistan. Higher number of questionnaires were distributed because "the problem of non-response should be borne in mind. Most sample surveys attract a certain amount of non-response. Thus, it is likely that only some of our sample will agree to participate in the research" (Bryman & Bell, 2011, p. 188). This was also considered important because some respondents do not completely fill the questionnaire and there might be a chance of having multivariate outliers in the data set (see chapter 4). Out of 450 questionnaires, 394 were returned to researcher constituting a response rate of 87.5 percent. The main reason for other nurses to not respond to this study's survey was due to the fact they did not complete the questionnaire right away due to their busy schedule, pressure from superiors to accomplish daily goals and to attend to patients requiring critical care in emergency situations. Follow ups were conducted twice but result of response rate did not change much.

This response rate of 87.5 percent is considered very good as Baruch (1999) found that the average response rate from mailed surveys in 175 management studies published in 1975, 1985, and 1995 was 55.6% and they also found that the response rates were declining over time. Similarly, Cycyota and Harrison (2006) found in their meta-analysis of response rate data from 231 studies that surveyed executives and were published in high-level management journals between 1992 and 2003 that mean response rates tended to decline over this period, with an average rate of 34%. Tharenou, Donohue & Cooper (2007, p. 64) pointed out that "it is useful for researchers, when reporting response rates in their studies, to refer to figures in previous studies in order to assess whether the rate is consistent with expectations for a particular population". Hence, it can be concluded that response rate for present study is very good and can be used to represent the population of the study.

3.9 Data Analysis Tools and Techniques

This section of the study provides the details of tools and techniques used in the study in order to test hypotheses and analyze the collected data. The study has used the latest available tools and applied reliable and widely used statistical techniques to test unidimensionality, reliability, validity and hypotheses. The software programs (SPSS and AMOS) employed for data analyses are extensively used and widely accepted around the world. The reason of their extensive usage and acceptability is availability of advanced and accepted techniques in these tools. Structural equation modeling (SEM) has been applied using AMOS software to test the hypotheses, as it is one of the most recommended and widely used analytical techniques (Newman et al., 2012; Elstad et al., 2013; Runhaar et al., 2013). The data collected has been analyzed in two stages, i) preliminary data analysis and ii) hypothesis testing through application of SEM. The details about the techniques and procedures used for data analysis are discussed in the following sections.

3.9.1 Preliminary Data Analysis

The preliminary data analysis of the study has been performed by using SPSS, version 23.0, which is one of the highly accepted statistical analysis tools (Field, 2013; Pallant, 2016). The basic techniques included in preliminary data analyses are data coding, data editing and screening, missing data analysis and its treatment, assessment of data normality and outliers' assessment, data transformation, checking for internal consistency. The appropriate tests and techniques (e.g. frequency distributions, descriptive statistical analysis, data transformations in case of computing factor scores and item parceling, skewness and kurtosis analysis, Cronbach's alpha as a reliability estimation method) were performed in SPSS to execute the

above mentioned tasks. Correlations among variables were also tested in SPSS. The multivariate outliers were further assessed by applying Mahalanobis distance test in AMOS. Descriptive statistics and demographical profile of respondents were also handled by using SPSS. The detailed information of all of these tests is presented in next chapter of study.

3.9.2 Structural Equation Modeling (SEM)

The study has applied structural equation modeling (SEM) by using AMOS, version 23.0, in order to assess unidimensionality of constructs and to test the reliability and validity of instruments along with hypotheses testing. SEM is a statistical analysis technique which offers the facility to examine a large number of independent and dependent variables in complex models involving third variables simultaneously (Tabachnick & Fidell, 2013). It is the most extensively used and accepted mechanism of statistical analysis (Meyer et al., 2006; Homles-Smith et al., 2006; Hair et al., 2010; Byrne, 2016; Kline, 2016). Though the basic purpose of SEM is to examine the interdependence of latent (unobserved) constructs by using number of observed variables (Hair et al., 2010; Byrne, 2016), but it can also conveniently work with other analytical methods like exploratory and confirmatory factor analysis, linear regression, variance, covariance and the use of simultaneously testing all hypotheses is not only possible but also encouraged (Byrne, 2016).

Additionally, the benefits of using SEM over other techniques are manifold. It provides luxury to assess the reliability, validity and unidimensionality of the constructs (Hair et al., 2010; Byrne, 2016; Kline, 2016). The importance of SEM can be evaluated by its ability of assessing model fitness to assure the workability of model. It not only assess model fitness but also offers modification indices, by which researchers can modify their models to achieve the best workable solutions (Anderson & Gerbing, 1988; Meyers, Gamst & Guarino, 2006).

There are two different statistical techniques and approaches in which hypothesized relationships can be estimated in structural equation modeling i.e. the widely used covariance based structural equation modeling (CB-SEM) approach and recently popularized variance based structural equation modeling (VB-SEM) approach which is alternatively and more commonly known as partial least squares structural equation modeling (PLS-SEM). Which technique is better suited to a study is a decision which is totally dependent on the nature and objectives of the study (Hair, Ringle & Sarstedt, 2011; Ringle, Sarstedt, & Straub, 2012; Hair et al., 2014a; Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014b; Sarstedt, Hair, Ringle, Thiele, & Gudergan, 2016; Hair, Matthews, Matthews & Sarstedt, 2017; Kock, 2017; Rigdon, Sarstedt, & Ringle, 2017). The difference between the two approaches and guidelines for their selection is displayed in the Table 3.4.

Table 3.4: Comparison of CB-SEM and PLS-SEM

CRITERION	**CB-SEM**	**PLS-SEM**
Objective	Parametric Oriented	Prediction Oriented
Approach	Covariance Based	Variance Based
Assumption	Normal Distribution (parametric)	Predictor Specification (non-parametric)
Parameter Estimates	Consistency at low scale	Consistency at large scale
Latent Variable Scores	Indeterminate	Explicitly Estimated
Epistemic Relations (relation between latent variables and measurement items)	Can handle only reflective indicators	Can handle both formative and reflective indicators
Implication	Recommended for parameter accuracy (testing of previous theories/models)	Highly suitable for prediction accuracy
Complexity of models	Designed for small complexity models (such as less than 100 indicators)	Can handle large complexity size (more than 100 latent variables and 1000 indicators)
Sample Size	Minimum recommendation range is 200-800 cases	Minimum recommendation range is 30-100 cases

Source: Chin & Newsted, 1999, p. 314

Hair, Sarstedt, Ringle, & Mena (2012) proposed that when researchers have to decide between the use of CB-SEM and PLS-SEM, they should focus on the characteristics and objectives that separates the two statistical methods from each other. As the objective of present study is to test the hypotheses by confirming the propositions made in JD-R theory, CB-SEM was selected to test the hypothesized relationships among variables of the study because it best suits the study's nature and objectives. Moreover, this decision was based on the standpoint presented by Reinartz, Haenlein, & Henseler (2009, p. 332) who argued "that justifying the choice of PLS due to a lack of assumptions regarding indicator distribution and measurement scale is often inappropriate, as CB-SEM proves extremely robust with respect to violations of its underlying distributional assumptions. Additionally, CB-SEM clearly outperforms PLS in terms of parameter consistency and is preferable in terms of parameter accuracy as long as the sample size exceeds a certain threshold (250 observations). Nevertheless, PLS analysis should be preferred when the emphasis is on prediction and theory development, as the statistical power of PLS is always larger than or equal to that of CB-SEM; already, 100 observations can be sufficient to achieve acceptable levels of statistical power given a certain quality of the measurement model".

Furthermore, there are two basic approaches that can be followed while applying SEM, single stage approach and two-stage approach. Single-stage approach examines measurement and structural models at the same time while in two-stage approach, structural and measurement models are examined in two different stages. The present study has adopted two-stage approach of SEM, because of its high acceptability and ability of testing reliability of constructs in better way by reducing the interactional effects of structural and measurement models (Hair et al., 2010).

3.9.2.1 Measurement Model: First Stage of SEM

As discussed earlier, SEM has been applied in this study in two stages. The first stage of SEM was intended to perform confirmatory factor analysis and to assess the reliability and validity of constructs used in present study.

A. Confirmatory Factor Analysis

There are two basic steps which have been performed in stage one of SEM, first is the assessment of causal relationship of constructs with their items (observed variables) and second is to assess validity and reliability of constructs. The basic aim of first step is verification of unidimensionality of constructs, which reveals the factor loading of each observed variable (item) of the construct, proposes reliability and better predicts discriminant and convergent validity of constructs (Meyers et al., 2006; Hair et al., 2010; Byrne, 2016; Kline, 2016). In order to assess unidimensionality, factor analysis has been performed. There are two widely used methods of factor analysis i.e. exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA is suitable to apply when theoretical basis of constructs are not known (Anderson & Gerbing, 1988), while on the other hand, CFA is more suitable method of factor analysis because it tests how well theory fits with observations (Zikmund et al., 2010; Brown, 2015). CFA is more flexible and suitable method of factor analysis (Meyers et al., 2006; Hair et al., 2010) but the selection of method is dependent on the nature and objectives of the study.

As the objective of present study is rather confirmatory than exploratory in nature and all the scales of the constructs of study are adopted and well tested within the context of their respective theories, conducting CFA was a better choice for this study. Present study chose to

apply confirmatory factor analysis and eliminated those items of constructs which had low factor loadings. The most agreed benchmark for acceptance of factor loading is 0.50 or higher (Holmes-Smith, Coote & Cunningham 2006; Hair et al., 2010) so items with factor loadings lower than 0.5 were deleted from further analysis. The assessment of unidimensionality of constructs leads towards the confirmation of reliability and validity of the constructs. Maximum Likelihood Estimation (MLE) method have been used in present study to assess unidimensionality, reliability and validity of constructs (Anderson & Gerbing, 1988; Holmes-Smith et al., 2006; Byrne, 2016; Kline, 2016).

B. Reliability

It is advised to have reliable and valid instruments for data collection, in order to achieve effective and meaningful results. The reliability of an instrument refers to its ability of creating similar results in different points of time (Burns, 2000; Bonds-Raacke & Raacke, 2012). Though all the selected instruments of study are widely used and proven reliable in previous studies but in present study their reliability has been verified again in context of nurses working in private Pakistani hospitals. There are multiple techniques available to test the reliability of constructs such as split half reliability, test-retest reliability estimates, internal consistency analysis through Cronbach's alpha and alternative form etc. Cronbach's alpha is extensively used and widely accepted method to test the reliability of constructs (Nunnally, 1978; Meyers et al., 2006). It is noted that "Cronbach's alpha determines the internal consistency or average correlation of items in a survey instrument to gauge its reliability" (Santos, 1999, p.1). The higher the value of Cronbach's alpha and the closer it is to 1, the more reliable and internally consistent the scale is. There is a debate on minimum acceptable Cronbach's alpha value for considering the instrument items reliable but reliability

estimates of a scale > 0.70 are considered reliable and this benchmark is accepted by most of the researchers (Nunnally, 1978; Ruane, 2005; Hair et al., 2010). In present study, Cronbach's alpha values are used as one of the methods to test the reliability of constructs with a minimum acceptable value of 0.70.

Table 3.5: Internal Consistency of Constructs

N=382	**Cronbach's Alpha**
Emotional Demands	0.816
Physical Demands	0.933
Quantitative Demands	0.882
Self-Criticism	0.842
Neuroticism	0.900
Anxiety	0.942
Depression	0.908
Task Performance	0.886
Contextual Performance	0.861
Self-Compassion	0.959
Social Support	0.930

As shown in Table 3.5, the reliability coefficients (Cronbach alpha values) are over and above the threshold value of 0.7 with self-compassion showing the highest level of internal consistency of 0.959 while even the lowest level of internal consistency of 0.816 is considered as a very good reliability coefficient because it is way above the cutoff criteria of 0.7. These values show that the scales used for current study are confirmed reliable in our sample of nurses working in private sector hospitals of Pakistan.

Despite the fact that Cronbach's alpha is widely accepted and effectively calculates reliability, it has some limitations (Anderson & Gerbing, 1988). It is not advised to use it as sole

predictor of reliability of constructs. It is recommended to apply CFA for better estimation of reliability (Meyers et al., 2006; Hair et al., 2010; Tabachnick & Fidell, 2013; Brown, 2015; Kline, 2016). Secondly, SEM is the basic analytical tool used for hypotheses testing in this study, so reliability of constructs has also been verified through CFA by using average variance extracted (AVE) and composite reliability (CR). CR focuses on estimating internal constancy of set of constructs instead of single construct based on model parameters which increases its acceptability (Holmes-Smith et al., 2006). In contrast, AVE indicates the variance among the set of constructs (Byrne, 2016). The SEM has been used to calculate CR and AVE and minimum acceptable values have been considered 0.50 for AVE and 0.60 for CR by following the established guidelines (Hair et al., 2010). Cronbach's alpha has been calculated for reliability and then these reliability values have been further verified using average variance extracted (AVE) and composite reliability (CR). The detailed information about reliability of the constructs has been presented in next chapter of study.

C. Validity

The ability of construct to produce same results time and again is known as reliability and the ability of a scale to measure the same concept which it is supposed to measure is the validity of a construct (Bonds-Raacke & Raacke, 2012). Validity of construct is equally important as it assures that it measures "what it is supposed to measure" (Ghauri & Gronhaug, 2002, p. 134). A valid construct should have considerable number of items to measure, which are related to construct and should also be related to other constructs (Nunnally & Berstein, 1994). In order to verify these traits of constructs, two types of validity have been tested i.e., content validity (alternatively known as face validity) and construct validity which includes

convergent and discriminant validity as suggested by various notable researchers (Nunnally & Berstein, 1994; Meyers et al., 2006; Hair et al., 2010).

a. Content Validity

Content validity also known as face validity of the construct, is the quality or general understandability of the construct. Ruane (2005, p. 136) argues that content validity is the "….assurance of the content quality of an instrument and its ability to measure a phenomenon". Burns (2000) believes that expert opinion on the quality of construct is a good way to evaluate content validity of the construct. Bonds-Raacke and Raacke (2012) also argued that experts' comments on quality of content is an adequate method for content validity evaluation. These recommendations have been followed and the constructs of the study have been discussed with experts of the field. For this purpose, the constructs were discussed with various nurses employed in private hospitals of Pakistan who commented on the quality and content of constructs' measures. Furthermore, the constructs' scales were presented to a panel of experts from Pakistan Nursing Council (PNC), the governing body related to nurses welfare and promotion of their interests in Pakistan, who second the opinion of nurses on the specific scale or sets of scales.

b. Construct Validity

After confirming the content validity, construct validity was assured in this study, which promises accuracy of the scale to measure the construct (Graverrer & Wallnau, 2007). According to Burns (2000, p. 91), construct validity ---- "ensures the uniformity of operational and conceptual measurement". In simple words ---- "what an instrument is measuring?" (Ruane, 2005, p. 137). In present study, convergent and discriminant validity of scales have been tested to assure their level of accuracy for measuring the constructs (Meyers

et al., 2006; Hair et al., 2010). Convergent validity estimates the correlation among the measures of construct while discriminant validity assures that correlations among the constructs of the study are not on higher side (Hair et al., 2010).

There are multiple ways to assess convergent and discriminant validity but application of CFA for this cause is highly recommended (Hair et al., 2010; Byrne, 2016; Kline, 2016). To assure the convergent validity, factor loading of items in CFA should be higher than 0.50 (Anderson & Gerbing, 1988; Holmes-Smith et al., 2006; Hair et al., 2010). These guidelines have been followed and those items were eliminated which had lower factor loading. For assurance of discriminant validity, there are two assumptions. First, the value of AVE should be higher than correlation of any two constructs of the study and secondly, correlation among factors should not be higher than 0.85 (Fornell & Larcker, 1981; Brown, 2015; Kline, 2016). All the results of reliability and validity analysis have been discussed in next chapter of the study which shows that the scales used in this study exhibited adequate reliability and validity.

3.9.2.2 Structural Model: Second Stage of SEM

The second stage of structural equation modeling is the testing of hypotheses of study in order to investigate the relationships among constructs. In order to analyze and present the relations among variable, graphical presentation model through path diagrams has been used as it is the most extensively adopted model in social and behavioral studies (Byrne, 2016; Kline, 2016). Path diagram can present several causal relationships and test them all together (Meyers et al., 2006). It not only tests the direct causal paths but can also test all the effects like direct, indirect and total effects simultaneously which helps to identify the mediated relations of the model (Holmes-Smith et al., 2006). Considering the workability and ability to test complex

models for all types of effects, this study adopted path diagrams to test the relations of constructs.

The graphical representation makes it easy to understand the relations of constructs with each other. It presents the variables and their relations using rectangles, ellipses and arrows. Rectangles indicate observed variables, ellipses represent unobserved variables or latent and arrows are used to portray their relationships where single headed arrows are for association among independent and dependent variables while double headed arrows are for correlation or covariance. All the constructs contain at least three items that measure the construct which is compulsory for model identification, model fitness analysis and hypotheses testing in SEM (Hair et al., 2010; Kline, 2016). The structural model has been analyzed for its fitness and hypotheses testing. The statistical technique of bootstrapping was used to measure the hypothesized indirect effects in SEM. Moreover, interaction based moderation analysis were used to assess the moderating effects of both job and personal resources in job demands and job stress relationship. The models, if not found fit, have been re-specified according to theoretically motivated justifications to achieve the required model fitness. The details of model fitness indices related to every scale along with hypotheses testing results are presented in following chapter of the study.

3.9.3 Assumptions of CB-SEM

There are certain assumptions for every statistical procedure to adopt; same is the case with Structural Equation Modeling (SEM). This section explains underlying assumptions of CB-SEM as presented in Table 3.6.

Table 3.6: Assumptions of CB-SEM

Statistical Test	Assumptions
CB-SEM	Large sample size No missing data No outliers Normal distribution for endogenous variables Theoretical base of model specification Model specification

3.9.3.1 Large Sample Size

The most important assumption for CB-SEM is the sample size as sample size can affect the quality of results. Large sample size is advised for CB-SEM because the stability of covariance and correlation can be affected due to small sample size (Tabachnick & Fidell, 2013). Considering this requirement, a final sample size of 382 nurses was used so as to meet this assumption of large sample size in CB-SEM.

3.9.3.2 No Missing Data

It is common to find missing values in data (Hair et al., 2010) as respondents sometimes forget to answer some questions (Meyers et al., 2006, Sekaran & Bougie, 2013). The pattern of missing data is important as if data is missing randomly, it does not affect the results of the study but if the responses against a specific variable are missing in large number then it can affect the results of the study (Tabachnick & Fidell, 2013). In case of present study, the missing values were randomly distributed and were less than 5% against every variable, which is common and acceptable (Churchill, 1995). So the missing values were replaced with the mean scores (Hair et al., 2010). All the missing values have been treated in proper manner so the data is justified to be analyzed through CB-SEM (see Chapter 4 for more details).

3.9.3.3 No Outliers

The abnormal values which do not match with rest of the responses as they are very high or very low in comparison with others are called outliers (Pallant, 2016). It is generally advised to check the data before analysis and make sure that there are no outliers as they can have significant effect on data and results. According to Meyers et al. (2006), outliers should be detected and treated properly otherwise they can influence the results of study. Mahalanobis distance test is a well-accepted and widely used test of outliers' detection (Tabachnick & Fidell, 2013). The results of Mahalanobis distance test are presented in next chapter (p. 177) where it is shown how the influential cases were dealt with in present study.

3.9.3.4 Normal Distribution for Endogenous Variables

Many of the statistical procedures demand normally distributed data for analysis. The normal distribution of data, especially in case of endogenous variables, is one of the primary assumptions of CB-SEM as well. The data has been analyzed to confirm its normality as it is considered mandatory to have normally distributed data for both, factor analysis and structural equation modeling (Tabachnick & Fidell, 2013; Kline, 2016). There are numerous ways to test the normality of data but the normality of data in present study has assessed the normality of endogenous variables through the use of Kurtosis and Skewness estimates. The results of the tests show that data is approximately normally distributed as all the values are below the threshold values for normal data. The normality of data directs the researcher to apply CB-SEM. A detail on how this analysis was performed and its results are presented in next chapter.

3.9.3.5 Theoretical base for Model Development

Structural equation modeling is used to test causal relations among the variable of the study but these relations need to have theoretical support (Byrne, 2016). The models sometimes achieve fitness and sometime they do not but in both conditions, it is advised to have theoretical justifications (Hair et al., 2010). The research model of present study has been developed on the basis of underlying theories. The conservation of resources (COR) theory and job demands-resources (JD-R) theory are the basis of the hypothesized model employed in this study. All the associations among variables of study are backed by literature and underpinning theories discussed in second chapter. Strong theoretical and logical support allows this study to apply CB-SEM.

3.9.3.6 Model Specification

An important assumption of CB-SEM, observed through goodness of model fit indices is model specification (Anderson & Gerbing, 1988). Model fitness can be observed through many of goodness of fit indices but researchers are not agreed upon all of them (Byrne, 2016). These model fitness indices can be categorized into three categories, absolute, incremental and parsimonious fit indices. Researchers have diverse opinions regarding the usage of these fitness indices. For instance, Kline (2016) believes that GFI, NFI, NNFI and SRMR are the most important indices and should be adopted. In a relatively recent review on reporting practices of confirmatory factor analysis, Jackson, Gillaspy and Purc-Stephenson (2009) suggested that researchers should report a minimal set of fit estimates comprising of at least chi-square value along with associated degrees of freedom and probability value, CFI, TLI, and RMSEA. Byrne (2016) recommended that representation of each category of model fitness indices with at least one item from each is better for model fitness explanation. Bollen and Long (1993) and Hair et al., (2010) have also shown the support in favor of choosing at

least one dimension from each category of model fitness indices to explain model fitness. Taking into consideration of these suggestions, present study has developed such a framework to explain model fitness which has representation of parameters from each category of model fitness indices. The details of model fitness indices used in present study are presented in Table 3.7.

Table 3.7: Goodness of Fit Indices

Name of the Index	**Acceptance Level**	**Remarks**
Absolute Fit Indices		
Chi-Square (x^2)	p>0.05	It is sensitive to large sample Size
Goodness of Fit (GFI)	> .90	Value close to one shows perfect fit
Root Mean Square Error of Approximation (RMSEA)	< .080	Values less than .080 is Acceptable
Incremental Fit Indices		
Adjusted Goodness of Fit (AGFI)	> .80	Value close to one shows perfect fit
Normed Fit Index (NFI)	> .90	Value close to one shows perfect fit
Comparative Fit Index (CFI)	> .90	Value close to one shows perfect fit
Tucker-Lewis Index (TLI)	> .90	Value close to one shows perfect fit
Parsimonious Fit Index		
Normed Chi-Square (x^2/df)	< 3 (1.0 < x^2 /df < 5)	Acceptable in between 1 to 3, but should not exceed 5.

Source: Adapted from Hair et al. (2010)

3.10 Chapter Summary

This chapter presented a detailed discussion on the research methods used in present study. More specifically, the chapter started with a discussion on research philosophy adopted for present study including the researcher's decisions about ontological and epistemological stances. Then it discusses various research design elements covering the sections on research approach and purpose of the study, type of the study, researcher's interference with the study, study's setting, unit of analysis, time horizon. The details on population, sample size and sampling techniques, data collection method, operational definitions and measures used for present study, questionnaire design, response rate and finally data analysis tools and techniques adopted for present study are described. Next chapter discusses the application of these data analysis tools and techniques to test the hypothesized relationships among variables of present study.

CHAPTER 4

DATA ANALYSIS AND RESULTS

4.1 Chapter Overview

The main purpose of this chapter is to present the findings obtained during the analysis of data and while testing the hypotheses of present study. This chapter is divided into many interdependent sections namely data cleaning and screening, treatment of missing values in the collected data, assessment of data normality, treatment of influential cases and outliers, analysis of demographic profile of the sample from which the data is collected, descriptive statistical analysis, reliability and validity estimates of constructs used in this study, application of structural equation modeling (SEM) in two stages i.e. measurement model as in first stage and structural model or hypothesis testing as in second stage including the structural models for mediation and interaction based moderation. Finally the results of hypotheses testing are presented in a table showing the support or rejection for every hypothesis. All of the above mentioned data analyses and its associated techniques were computed and employed by using Statistical Package for Social Sciences (SPSS) version 23.0 (IBM, 2015) and Analysis of Moment Structures (AMOS) version 23.0 (Arbuckle, 2015).

4.2 Data Screening and Editing

Before proceeding to apply any statistical test on the data collected from the nurses working in private hospitals of Pakistan, the first step was to ensure that collected data has been screened and edited to deal with issues like data entry errors, incomplete data, to analyze if there are any missing values in data and finally to make sure the usability of the collected data (Coakes, 2006). In short, data preparation is as important as data analysis and its

interpretation itself and it involves the tasks such as “editing, dealing with missing data, coding, transformation, and entering data” (Hair et al., 2016, p. 317). Data editing is “the process of checking the completeness, consistency, and legibility of data and making the data ready for coding and transfer to storage” (Zikmund et al., 2013, p. 463). This translates into data integrity which is to make sure that researcher uses the data which is properly edited, cleaned of any mistakes or errors and properly coded so as to be meaningful in the data analysis of any sort later on. This is very important step because “fieldwork often produces data containing mistakes” (Zikmund et al., 2013).

4.3 Handling the Missing Values

It is one of the assumptions of CB-SEM that the data used for applying SEM should not contain any missing values. The notion of handling blank responses is attested by Sekaran and Bougie (2013, p. 280) who argued that “not all respondents answer every item in the questionnaire. Answers may have been left blank because the respondent did not understand the question, did not know the answer, was not willing to answer, or was simply indifferent to the need to respond to the entire questionnaire. In the last situation, the respondent is likely to have left many of the items blank. If a substantial number of questions— say, 25% of the items in the questionnaire—have been left unanswered, it may be a good idea to throw out the questionnaire and not include it in the data set for analysis.” Following this threshold, the questionnaires with 75% (64*0.75) or more of the complete responses were found useful for further analysis. Only 7 questionnaires were failed to meet the above mentioned criteria and thus were discarded from further analysis.

Hair et al. (2016) proposed a more strict approach of discarding any questionnaire or variable which has more than 15% of missing data in it because missing data often creates problems

for validity of research findings and thus should be identified and treated properly. All the other questionnaires with missing values in them where missing values are randomly distributed should be replaced with mean scores or some other appropriate number. So the present study followed the guidelines of Hair et al. (2016) and replaced the missing values with mean scores in SPSS software because the remaining missing values were randomly distributed in the data set and does not exceed the threshold of 15 % or more missing values in variables and overall items in questionnaire.

4.4 Assessment of Data Normality

It is a basic requirement and assumption of covariance based structural equation modeling (CB-SEM) that the data must be normally distributed (especially for endogenous variables) for assessment of both factor analytic and structural models (Kline, 2012; Tabachnick & Fidell, 2013; Kline, 2016). The discussion on data normality is very important because "the most fundamental assumption in multivariate analysis is normality, referring to the shape of the data distribution for an individual metric variable and its correspondence to the normal distribution, the benchmark for statistical methods. If the variation from the normal distribution is sufficiently large, all resulting statistical tests are invalid, because normality is required to use the F and t statistics" so even though fairly large sample sizes of 200 or more "tend to diminish the detrimental effects of nonnormality, the researcher should always assess the normality for all metric variables included in the analysis" (Hair et al., 2010, p. 69).

There are various ways to test for normality of data including showing the data on residual histograms and probability plots or P-Plots, various other statistical tests like checking for skewness and kurtosis of the collected data and applying the statistical tests of "Shapiro-Wilks test and a modification of the Kolmogorov-Smirnov test. Each calculates the level of

significance for the differences from a normal distribution" (Hair et al., 2010, p. 71). It is important to note here that graphical representation of normality distribution is only good in case of large samples but does not depict the true picture in case of small sample sizes. Similarly, the significance based tests of Shapiro-Wilks and Kolmogorov-Smirnov are of little to no use in small sample sizes (less than 30) and quite sensitive to large sample sizes (Hair et al., 2010).

Considering these facts, the present study opted to use the tests of Skewness and Kurtosis to assess the normality of the collected data in SPSS software. Pallant (2016, p. 100) described that "the Skewness value provides an indication of the symmetry of the distribution. Kurtosis, on the other hand, provides information about the 'peakedness' of the distribution. If the distribution is perfectly normal, you would obtain a skewness and kurtosis value of 0 (rather an uncommon occurrence in the social sciences)." The results of the test of Skewness and Kurtosis provided a clear indication that the collected data is approximately normally distributed because all the obtained values of Skewness and Kurtosis are below the accepted threshold of $\pm$ 3 in case of Skewness and $\pm$ 10 in case of Kurtosis because values exceeding this threshold indicate a major problem with the normality of the data (Kline, 2016, p.77).

4.5 Treatment of Influential Cases/Outliers

Hair et al. (2010, p. 62) defined outliers as "observations with a unique combination of characteristics identifiable as distinctly different from the other observations". It is further argued that the "outliers, or extreme responses, may unduly influence the outcome of any multivariate analysis" (Hair et al., 2010, p. 32) and due to this reason these extreme cases must be identified and dealt with properly so that they can no longer cause a problem in data

analysis. As structural equation modeling is a multivariate technique for data analysis, so Mahalanobis Distance test (Mahalanobis, 1936) was selected as it is a popular and widely accepted test for detecting multivariate outliers in the dataset. “Mahalanobis distance is the distance of a case from the centroid of the remaining cases where the centroid is the point created at the intersection of the means of all the variables” (Tabachnick & Fidell, 2013, p. 74). The result of this test indicated that only 5 such extreme cases were there which were less than the threshold value ($p<0.001$) so these cases were removed from the dataset making the total number of respondents equal to 382 for final analysis.

4.6 Respondents’ Demographic Profile

The data related to the demographics of nurses working in private hospitals of Pakistan was collected along with the main questionnaire covering all the constructs. It was the last section in the questionnaire where questions about their age, marital status, number of children, highest level of education/qualification, job title, total working experience, nature of employment, salary and job status were asked. The information which is retrieved through this section of questionnaire is presented in Table 4.1.

Table 4.1: Respondents’ Profile

		Frequency	**Percentage**
Age (years)	21-30	261	68.3
	31-40	91	23.8
	41-50	23	6.0
	51-60	7	1.8
Marital Status	Single	175	45.8
	Married	198	51.8
	Divorced	7	1.8
	Widowed	2	0.5

Table 4.1 continued

Number of Children	0	203	53.1
	1	90	23.6
	2	54	14.1
	3	24	6.3
	4	10	2.6
	5	1	0.3
Qualification	MSc. Nursing	36	9.4
	BSc. Nursing	208	54.5
	Nursing Diploma	138	36.1
Job Title	Student Nurse	39	10.2
	Staff Nurse	161	42.1
	Charge Nurse	165	43.2
	Head Nurse	15	3.9
	Matern	2	0.5
Total Experience (Years)	1-5	242	63.4
	6-10	98	25.7
	11-15	27	7.1
	16-20	11	2.9
	21-25	4	1.0
Nature of Employment	Regular	295	77.2
	Temporary	87	22.8
Salary (PKR)	11,000-20,000	21	5.5
	21,000-30,000	70	18.3
	31,000-40,000	103	27
	41,000-50,000	141	36.9
	51,000 or above	47	12.3
Job Status	Non-Managerial	149	39
	Lower Management	121	31.6
	Middle Management	99	25.9
	Top Management	13	3.4

Table 4.1 provides insight into some important and useful information about the respondents of present study. It is important to note here that this section does not cover the gender of the respondents which was due to the fact that all of the data was collected from female nurses as they constitute 98 percent of the whole population of nurses working in private hospitals of Pakistan. It is evident from the table above that most of the nurses were young and fall under the category of 21-30 years of age bracket i.e. 261 nurses (68.3%) and 91 nurses were in the age bracket of 31-40 constituting a percentage of 23.8. Moreover, 23 nurses (6%) were of the ages in between 41-50 and only 7 (1.8%) nurses were of the ages in between 51-60. In case of marital status, there were four categories of single, married, divorced and widowed. 175(45.8%) nurses reported being single while 198(51.8%) nurses reported being married. Only 7(1.8%) nurses were divorced and only 2(0.5%) were widowed. When asked about their number of children, 203(53.1%) of nurses have reported that they have no children, 90(23.6%) nurses have 1 child, 54(14.1%) have 2 children, 24(6.3%) have 3 children, 10(2.6%) have 4 children and only 1(0.3%) nurse has 5 children.

Regarding the highest level of education/qualification, 36(9.4%) nurses reported having MSc. in Nursing (Masters), 208(54.5%) nurses holds a BSc. in Nursing (Bachelors) and 138(36.1%) nurses only have a Nursing Diploma. Nurses' job title was comprised of 5 categories namely student nurse, staff nurse, charge nurse, head nurse and matern. 39(10.2%) nurses were student nurses, 161(42.1%) of the nurses holds the job title of staff nurse, 165(43.2%) nurses were charge nurses, 15(3.9%) nurses were head nurses and only 2(0.5%) of respondent nurses were matern. As in their total experience in nursing job, there were 5 categories of 1-5 years, 6-10 years, 11-15, 16-20 and 21-25 years. 242(63.4%) nurses reported having an experience in between 1-5 years, 98(25.7%) nurses have the experience in between 6-10 years, 27(7.1%) nurses were more experienced in between the range of 11-15 years, 11 (2.9%) nurses reported

having an experience in between 16-20 years, and only 4 nurses (1%) were experienced in between 21-25 years.

Respondents' nature of employment was inquired in two categories of regular or temporary. Most of the nurses 295(77.2%) were regular in their job while 87(22.8%) nurses were having the temporary nature of employment. Nurses' salary was probed through 5 categories i.e. 11,000-20,000, 21,000-30,000, 31,000-40,000, 41,000-50,000 and 51000 or above. All of these figures are in Pakistani Rupees (PKR) where 1 US Dollar (USD) =105 PKR. 21(5.1%) nurses reported only earning an amount in between 11,000-20,000 PKR, 70(18.3%) nurses reported that they have an earning from their job in between 21,000-30,000 PKR. 103(27%) nurses have their salary in between 31,000-40,000 PKR, 141(36.9%) nurses earn in between 41,000-50,000 PKR and only 47(12.3%) nurses earn 51,000 PKR or above. Most nurses i.e. 149(39%) were doing non-managerial jobs at the time of data collection, 121(31.6%) nurses reported that they are from lower level management, 99(25.8%) nurses were from middle level management in their respective hospitals and only 13(3.4%) nurses were from top management.

4.7 Descriptive Statistics

The descriptive statistics of the variables under investigation in this study have been presented in this section. These descriptive statistics include the statistics like sum, mean score and standard deviation of all the variables and are presented in Table 4.2. It is evident from the table that anxiety has the highest mean score of 4.00 while the second highest mean i.e. 3.91 is for self-criticism variable while. The only mean closest to these variables is that of neuroticism i.e. 3.81. It is observed that the lowest mean score of 2.07 is for task performance. Similarly, the highest sum value (the product of mean and number of respondents) of 1528.00

is for anxiety and second highest sum value is again for self-criticism (1495.00) and third highest for neuroticism (1458.20). Looking at these numbers, we can safely assume that job stress in the form is anxiety and depression is prevalent in the nurses working in private hospitals of Pakistan and that their job performance (task and contextual performance) is impaired due to that. The table also shows that most of the values of standard deviation of variables are below or around 1 meaning that there is no large dispersion in the data (Meyers, Gamst & Guarino, 2006

Table 4.2: Descriptive Statistics

N=382	Sum	Mean	Std. Deviation
Emotional Demands	1059.25	2.772	.7944
Physical Demands	876.40	2.294	.8070
Quantitative Demands	1080.25	2.827	.7465
Self-Criticism	1495.00	3.913	.5376
Neuroticism	1458.20	3.817	.6227
Anxiety	1528.00	4.000	.6429
Depression	1357.50	3.553	.7970
Task Performance	793.75	2.077	.9009
Contextual Performance	795.40	2.082	.7172
Self-Compassion	863.50	2.260	1.2568
Social Support	1283.00	3.358	1.2409

4.8 Correlations among Variables

This section describes the correlation analysis among the variables of this study as shown in Table 4.3.

Table 4.3: Correlations Analysis

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Emotional Demands	**1**										
2. Physical Demands	.380**	**1**									
3. Quantitative Demands	.335**	.388**	**1**								
4. Self-Criticism	.254**	.185**	.348**	**1**							
5. Neuroticism	.176**	.218**	.284**	.645**	**1**						
6. Anxiety	.266**	.225**	.322**	.502**	.528**	**1**					
7. Depression	.268**	.224**	.463**	.464**	.415**	.474**	**1**				
8. Task Performance	-.182**	-.131*	-.236**	-.300**	-.300**	-.451**	-.495**	**1**			
9. Contextual Performance	-.122*	-.179**	-.160**	-.189**	-.226**	-.321**	-.345**	.523**	**1**		
10. Self-Compassion	-.212**	-.262**	-.373**	-.277**	-.320**	-.388**	-.533**	.484**	.287**	**1**	
11. Social Support	-.121*	-.150**	-.167**	-.039	-.088	-.127*	-.158**	.065	.373**	.144**	**1**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The results of correlation analysis indicated that the coefficients of correlation are in the direction they are supposed to be in proposed hypotheses of this study and also it can be seen that most variables have significant correlations with other variables as hypothesized.

4.9 Structural Equation Modeling (SEM)

The conceptual framework hypothesized in this study has been tested and analyzed through the use of SEM. Hair et al. (2010, p. 590) observed that "SEM has become the most prominent multivariate tool for testing behavioral theory. SEM's history grows out of the desire to test causal models". Kline (2016, p. 9) argued that "the term structural equation modeling (SEM) does not designate a single statistical technique but instead refers to a family of related procedures. Other terms such as covariance structure analysis, covariance structure modeling, or analysis of covariance structures are also used in the literature to classify these

techniques under a single label." Similarly, Schumacker and Lomax (2004, p. 2) pointed out that "structural equation modeling (SEM) uses various types of models to depict relationships among observed variables, with the same basic goal of providing a quantitative test of a theoretical model hypothesized by a researcher" and that "the goal of SEM analysis is to determine the extent to which the theoretical model is supported by sample data".

Hoyle (2012, p. 3) noted that "structural equation modeling (SEM) is a growing family of statistical methods for modeling the relations between variables. Although the data from which these relations are modeled and estimated are observed, models may include variables that are unobserved, or latent. For this reason, SEM has been referred to as latent variable modeling". Hair et al. (2010, p.19) argued that "structural equation modeling provides the appropriate and most efficient estimation technique for a series of separate multiple regression equations estimated simultaneously. It is characterized by two basic components: (1) the measurement model and (2) the structural model. The measurement model enables the researcher to use several variables (indicators) for a single independent or dependent variable. The structural model is the path model, which relates independent to dependent variables."

Present study has also adopted the two stage approach of SEM. Both measurement and structural models have been tested and analyzed in SEM by using the software of IBM Amos, version 23.0 (Arbuckle, 2015). The selection of Amos over other covariance based SEM softwares like LISREL is because of the fact that Amos is very user friendly as opposed to LISREL which uses certain Greek notations and jargons by advanced SEM users who also happens to have the command over complex coding in the software as compared to more novice researchers and due to this reason, the usage of Amos for CB-SEM is gaining momentum and popularity (Hair, Gabriel & Patel, 2014a). Byrne (2016, p. 16) described that

"the program name, Amos, is actually an acronym for "Analysis of Moment Structures" or, in other words, the analysis of mean and covariance structures, the essence of SEM analyses". Amos is becoming overwhelmingly popular among researchers applying CB-SEM in their studies because besides of being user-friendly, it offers a better graphical interface than other statistical programs for CB-SEM (Kline, 1998, Hair et al., 2014a; Byrne, 2016).

The details and results of the analysis from both the stages of SEM are presented in next sections of this chapter. In the first stage of SEM i.e. measurement model assessment, confirmatory factor analysis (CFA) has been performed which is an analysis designed to investigate the causal relationships between observed variables (items in scales) and latent variables (theoretical constructs) for assessing the unidimensionality of all the constructs along with estimating the reliability and validity of the constructs under investigation while assessing and accounting for common method bias present due to some variable(s) external to the measures used for the study (Meyers et al., 2006; Hair et al, 2010). It is then followed by the second stage of SEM i.e. structural model assessment in which the relationships between exogenous and endogenous variables are analyzed for possible causal relationships as hypothesized in the study (Hair et al., 2010).

4.10 Measurement Model Assessment: First Stage of SEM

This particular section describes the assessment of first stage of SEM analysis i.e. measurement model. Hair et al. (2010, p. 544) defined measurement model as "an SEM model that (1) specifies the indicators for each construct and (2) enables an assessment of construct validity. The first of the two major steps in a complete structural model analysis." Hair et al. (2010, p. 601) provided further explanation for measurement model and described it as "specification of the measurement theory that shows how constructs are operationalized

by sets of measured variables. The specification is similar to an EFA by factor analysis, but differs in that the number of factors and the items loading on each factor must be known and specified before the analysis can be conducted". Hair and colleagues (2010, p. 545) further argued that "it represents the theory showing how measured variables come together to represent constructs".

As described above, the assessment of measurement model is divided into two main parts i.e. checking unidimensionality of constructs via CFA as in how the data fits the measurement model of each construct and for overall model followed by estimating the reliability and validity of constructs. Considering this, measurement model of all the constructs of the study i.e. emotional job demands, physical job demands, quantitative job demands, self-criticism, neuroticism, anxiety, depression, task performance, contextual performance, self-compassion and social support have been assessed separately and then a pooled measurement model was tested for overall model including all the variables simultaneously. Model fitness was checked for all the variables and for overall model and if it was not found adequate, the models are then re-specified to achieve a better fit (Hair et al., 2010; Tabachnick & Fidell, 2013; Byrne, 2016; Kline, 2016). There were some cases in which model did not perfectly fit the data so some re-specifications were made to achieve best model fit estimates. After evaluating all variables independently and together, the variables and scales are further examined for reliability and validity. The detailed investigation of all the measurement models, scales' reliability and validity are presented in next sections.

4.10.1 Confirmatory Factor Analysis (Unidimensionality of Constructs)

This section is dedicated to describing the relationship between items and their constructs showing the unidimensionality of constructs under study using the graphical interface of IBM

Amos. This also shows how many items do a scale have and how well these items are fitted on the respective construct so as to confirm the factor structure of a particular scale. The modification process of re-specifying a model for achieving better fit has also been described in this section. As mentioned above, all of the scales adopted for the study have been assessed separately and also together as one model.

It is important to note here that these constructs will be assessed to find out if they can serve as first order factors for a second order higher construct specially in case of emotional, physical and quantitative demands to find out if they can be first order reflective factors for a second order higher latent construct of job demands and also in case of self-criticism and neuroticism to find out if they can also prove to be first order factors for a second order higher latent construct of "personal demands". Moreover, a second order CFA for anxiety and depression was conducted to see if these two constructs are better represented by a higher order construct of job stress and same applies for the construct wise second order CFA for task performance and contextual performance showing if they can be first order factors under the umbrella of a higher order reflective construct of job performance.

The relationships between measured (observed) variables and their latent (unobserved) constructs in Amos graphics have been displayed by single headed arrows, the direction for which is from latent construct to its items. Similarly, single headed arrows are used to show the relationships between error terms and the items in the scale and the direction of these arrows are from error terms to the items (indicators). Constructs or factors are linked with each other by using double headed arrows showing the covariance among these constructs. The standardized regression weight or factor loading of every item is displayed on the single headed arrows pointing towards those items from their respective latent construct and the

values shown on double headed arrows shows the covariance among those latent constructs. Amos graphics program mainly uses the Maximum Likelihood Estimation (MLE) approach to structural equation modeling however researchers can select other estimation options such as Generalized Least Squares (GLS) and Unweighted Least Squares (ULS) from estimation section of analysis properties in the software. ML estimation is preferred over other estimation techniques in present study because the data has no missing values and is fairly normally distributed and because sample size is large (Tabachnick & Fidell, 2013).

4.10.1.1 Emotional Demands

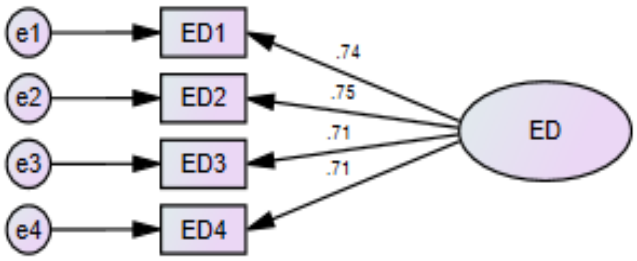
The variable of emotional demands was measured using 4 items scale specifically intend to measure the emotional demands of nurses in hospital settings. Items used in the scale, their factor loading (standardized regression weight) and decision about their retention or deletion is presented in Table 4.4.

Table 4.4: The description of Emotional Demands Scale

Item	Coding	Loading	Status
Illness or any other human suffering.	ED1	.74	Retained
Aggressive patients.	ED2	.75	Retained
Troublesome patients in your work.	ED3	.71	Retained
Death.	ED4	.71	Retained

As shown in the Table 4.4., the factor loadings for all 4 items of emotional demands are acceptable as "standardized loading estimates should be .5 or higher, and ideally .7 or higher" (Hair et al., 2010, p. 605) and hence these items should all be retained for further analysis. It was further noted that "factor loadings are the correlation of each variable and the factor. Loadings indicate the degree of correspondence between the variable and the factor, with higher loadings making the variable representative of the factor. Factor loadings are the

means of interpreting the role each variable plays in defining each factor" (Hair et al. 2010, p. 110).The model fitness estimates resulting from CFA for emotional demands brought values which are all acceptable and shows very good fit (x^2=3.949, df=2, x^2/df=1.974, p=0.139, GFI=0.995, AGFI=0.974, NFI=0.992, TLI=0.988, CFI=0.996, RMSEA= 0.051). The insignificant chi-square value of 0.139 shows that the model fits the data well and there was no need for any modification/re-specification through modification indices.



Model Fitness Indices
x2=3.949, df=2, p=0.139, GFI=0.995, AGFI=0.974, NFI=0.992, TLI=0.988, CFI=0.996,RMSEA=0.051, x2/df=1.974

Figure 4.1: CFA: Measurement model for Emotional Demands

4.10.1.2 Physical Demands

Nurses' physical job demands were measured through a scale of five items to check if the sample data for these items fits the model and whether factor loading of each item is acceptable for further analysis. The scale can be identified in the questionnaire from the coding of PD1-PD5. Details regarding the factor loadings and decision whether to retain or to delete the item based on its factor loading are displayed in Table 4.5. Similar to emotional demands, the CFA for physical job demands was conducted independently from other constructs to assess its model fitness and unidimensionality. The model fitness values (x^2=13.812, df=5, x^2/df=2.762, p=0.017, GFI=0.985, AGFI=0.956, NFI=0.991, TLI=0.989, CFI=0.994, RMSEA= 0.068) indicated that the model can be further improved by using

modification indices. A quick look at the modification indices revealed that there was reasonably high correlation between e1 and e2, so these error terms are then allowed to correlate using double headed arrow and the model was run again to check if this helped improved the model fitness values. This time the model fitness values (x^2=6.538, df=4, x^2/df=1.634, p=0.162, GFI=0.993, AGFI=0.973, NFI=0.996, TLI=0.996, CFI=0.998, RMSEA= 0.041) improved significantly and shows a much better fit. All of the model fit estimates have shown a considerable improvement from the previous model fitness estimates and this time chi-square value became insignificant which shows that the model under investigation is a good fit. Factor loadings for items ranges from 0.79-0.91 which shows that all of the factor loadings are ideal and all items must be retained for further analysis.

Table 4.5: The description of Physical Demands Scale

Item	Coding	Loading	Status
I have to perform a lot of physically strenuous tasks to carry out my job.	PD1	.79	Retained
I have to bend and/or to stretch a lot at work.	PD2	.84	Retained
I have to work in uncomfortable or impractical postures to do my work.	PD3	.91	Retained
I have to lift or move heavy persons or objects (more than 10 kg).	PD4	.88	Retained
I have to perform physical activity in a quick and continuous fashion.	PD5	.87	Retained

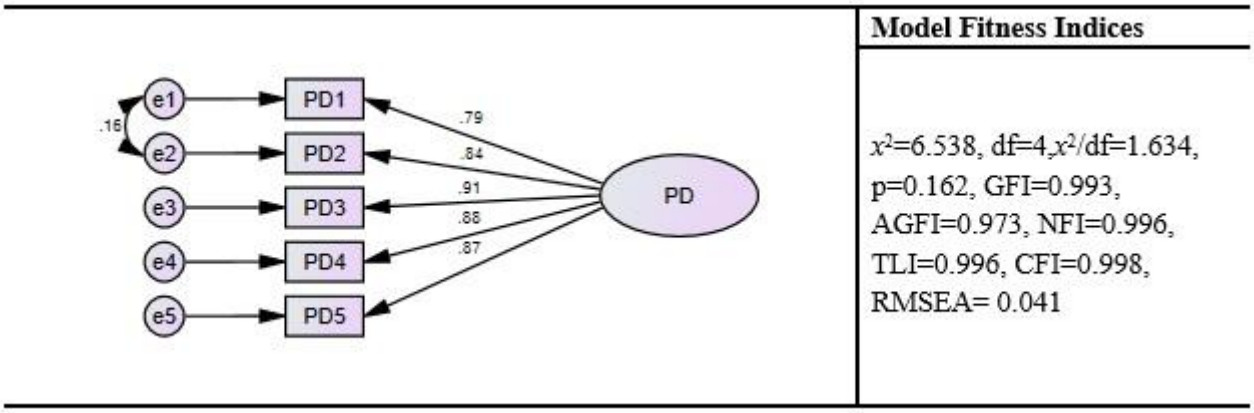


Figure 4.2: CFA: Measurement model for Physical Demands

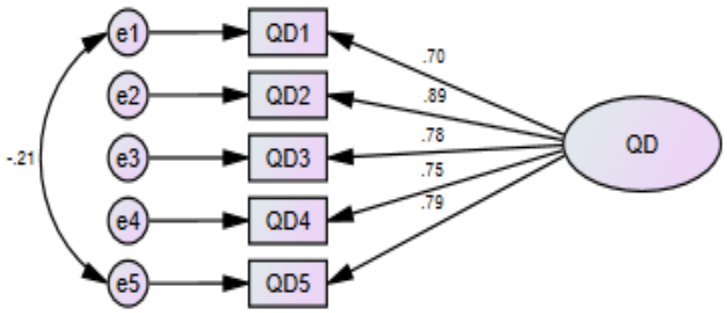
4.10.1.3 Quantitative Demands

The scale for quantitative job demands was comprised of five items assessing the workload, work and time pressure related to nurses' jobs. It was also evaluated by using the independent measurement model for these five items. The description about this scale including the items, their coding and factor loading is presented in Table 4.6. The model fitness estimates (x^2=16.708, df=5, x^2/df=3.342, p=0.005, GFI=0.983, AGFI=0.949, NFI=0.983, TLI=0.976, CFI=0.988, RMSEA= 0.078) revealed that chi-square value is significant and the model fitness of this model can be improved by re-specification using modification indices. A quick glance at modification indices revealed that the error terms namely e1 and e5 can be correlated to improve the model fitness. After correlating these error terms, the model was run again and resulted in model fitness estimates (x^2=6.150, df=4, x^2/df=1.537, p=0.188, GFI=0.994, AGFI=0.976, NFI=0.994, TLI=0.995, CFI=0.998, RMSEA= 0.038) which were significantly improved as compared to the model fitness estimates from the previously estimated model. All values have shown improvement and chi-square value became insignificant which shows the model is good fit. By looking at factor loading of all items, all

five loadings ranged from 0.70-0.89 which is equal to or greater than the ideal threshold of 0.7 or higher (Hair et al., 2010) suggesting that they should all be retained for further analysis.

Table 4.6: The description of Quantitative Demands Scale

Item	Coding	Loading	Status
How often do you lack time to complete all your work tasks?	QD1	.70	Retained
Can you pause in your work whenever you want?	QD2	.89	Retained
Do you have to work very fast?	QD3	.78	Retained
Is your workload unevenly distributed so that things pile up?	QD4	.75	Retained
Do you have enough time to talk to patients?	QD5	.79	Retained



Model Fitness Indices

x^2=6.150, df=4, x^2/df=1.537, p=0.188, GFI=0.994, AGFI=0.976, NFI=0.994, TLI=0.995, CFI=0.998, RMSEA= 0.038

Figure 4.3: CFA: Measurement model for Quantitative Demands

4.10.1.4 Job Demands

In previous studies on job demands-resources theory, the construct of job demands (JD) is always treated as a second order reflective construct under whose umbrella many different types of job demands such as emotional, physical and quantitative job demands serve as a single order reflective constructs. So in this section, a measurement model showing a second order CFA for a higher order construct of job demands is presented and evaluated to prove if job demands can act as second order reflective construct having the first order factors of

emotional, physical and quantitative job demands. Job demands were indirectly measured through these three first order factors and thus does not have its own items in the questionnaire.

This type of CFA is different from previously presented first order reflective models in that it contains all the types of job demands in one model and these first order factors become dependent variables because job demands is a second order reflective construct so the single headed arrows pointing from job demands towards these three demands were drawn and one such arrow needed to be constrained to 1 similar to one item being constrained to 1 in every single order CFA. This is a requirement of IBM Amos for identifying the model without which the model results in not being identified and the model could not run. Moreover, all of the first order factors are now endogenous constructs that is why they must have their own error terms in second order CFA. Single headed arrows drawn from job demands towards three first order demand variables will have their own factor loadings similar to the factor loadings of items in the scale in terms of first order CFA (Byrne, 2016).

The second order CFA for job demands was run without first correlating the error terms that were correlated in their respective first order CFA to check if they also need to be correlated in terms of a higher order CFA or the results were different from previous models. The model fitness estimates (x^2=107.690, df=74, x^2/df=1.455, p=0.006, GFI=0.962, AGFI=0.946, NFI=0.967, TLI=0.987, CFI=0.989, RMSEA= 0.035) have shown a reasonable fit except for the chi-square value being significant. Upon having a look at the modification indices, the same error terms are found to be correlated which were correlated in the respective first order CFA of physical and quantitative demands. So the model was run again after correlating those same error terms and this time model fitness values (x^2=89.753, df=72, x^2/df=1.247, p=0.077,

GFI=0.968, AGFI=0.953, NFI=0.973, TLI=0.993, CFI=0.994, RMSEA= 0.025) have shown significant improvement from the previous model with no correlated error terms and now the chi-square value also became insignificant showing a better and acceptable model fitness. The standardized regression weights from JD→ED (0.65), JD→PD (0.65) and JD→QD(0.62) shows that job demands is proved to be a second order reflective construct with all factor loadings above 0.5 and all model fitness values meets the criteria for calling a model good fit for sample data. Figure 4.4 shows the second order CFA for the higher order reflective construct of job demands.

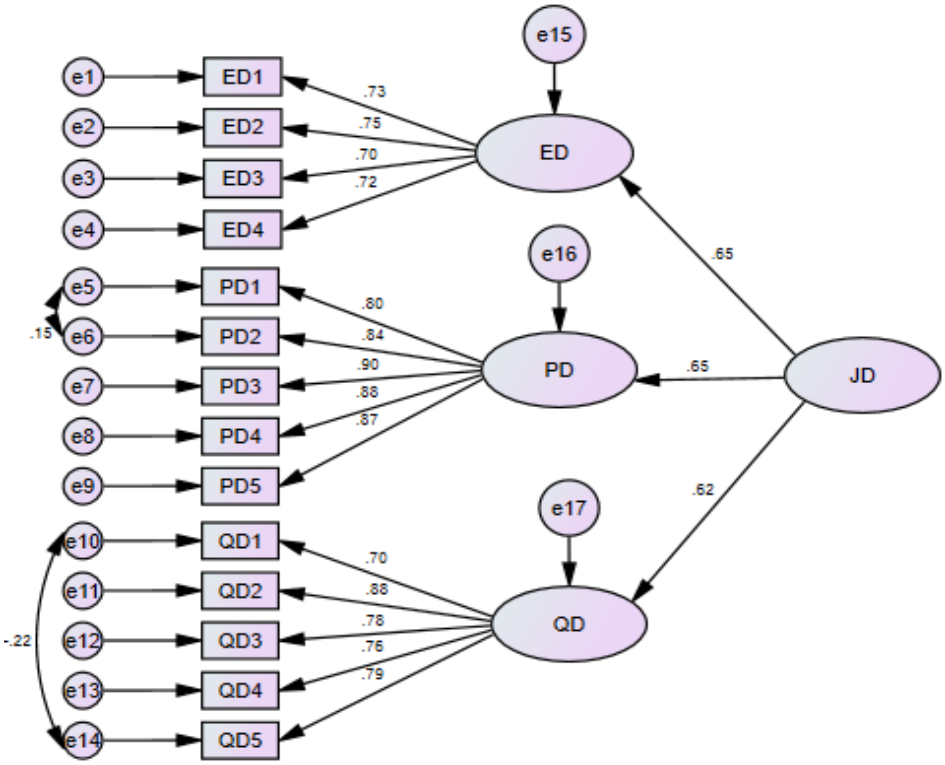


Figure 4.4: Second order CFA: Measurement model for job demands

4.10.1.5 Self-Criticism

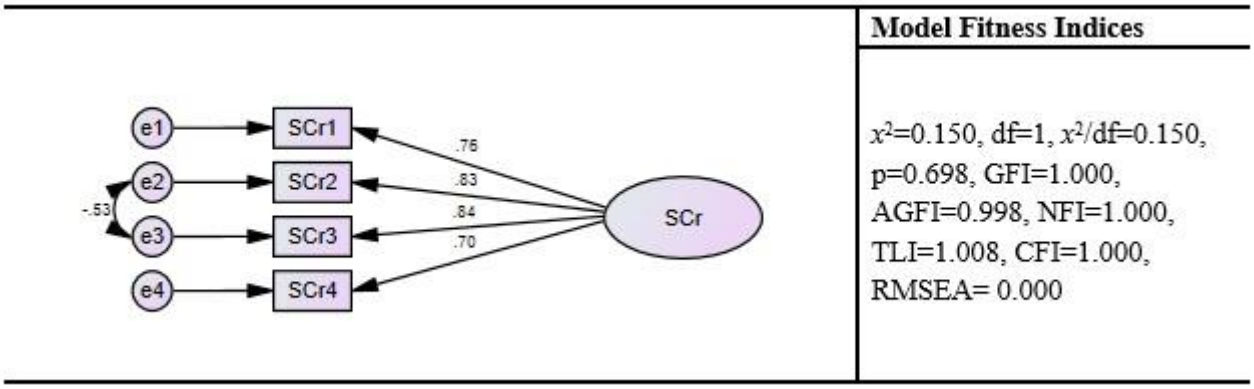
The construct of self-criticism was measured using a 6 items scale in present study. The independent measurement model for these 6 items was assessed for model fitness and unidimensionality. The description about this particular scale including which items were used, how they were coded and what are the factor loadings for each item has been displayed in Table 4.7.

The measurement model was estimated and results indicated that there were two items with factor loadings less than 0.5 i.e. SCr5 (0.42) and SCr6 (0.33) so they were dropped from further analysis and model was estimated again with remaining four items. Even this time, the model fitness estimates (x^2=18.497, df=2, x^2/df=9.248, p=0.000, GFI=0.978, AGFI=0.892, NFI=0.971, TLI=0.921, CFI=0.974, RMSEA= 0.147) have shown a poor fit. Upon inspecting modification indices, it was observed that two error terms e2 and e3 are highly correlated and can be correlated in the Amos graphics to achieve an overall better fit. After correlating these error terms, model was estimated again and this time, the model fit values (x^2=0.150, df=1, x^2/df=0.150, p=0.698, GFI=1.000, AGFI=0.998, NFI=1.000, TLI=1.008, CFI=1.000, RMSEA= 0.000) improved significantly and model was a very good fit. All 4 remaining items have good factor loading ranging from 0.7-0.84 as shown in the Table 4.7.

Table 4.7: The description of Self-Criticism Scale

Item	Coding	Loading	Status
Often I find that I do not live according to my standards or ideals.	SCr1	.76	Retained
There is a significant gap between who I am today and who I would like to be.	SCr2	.83	Retained
I tend not to be content with what I have.	SCr3	.84	Retained
I find it hard to accept my weaknesses.	SCr4	.70	Retained
I have a tendency to be very self-critical.	SCr5	.42	Deleted
I compare myself often to standards or goals.	SCr6	.33	Deleted

Figure 4.5: CFA: Measurement model for Self-Criticism



4.10.1.6 Neuroticism

The scale for assessing neuroticism comprised of 8 items in questionnaire. The measurement model to evaluate the model fitness and unidimensionality of this scale was evaluated independently from the rest of the constructs. Items used in this scale, their coding in questionnaire, their standardized loading estimates and the decision whether to retain or to delete an item is presented in Table 4.8. When the model was estimated for these 8 items, the model fit estimates (x^2=153.65, df=20, x^2/df=7.683, p=0.000, GFI=0.903, AGFI=0.826, NFI=0.915, TLI=0.894, CFI=0.925, RMSEA= 0.132) have shown that the model poorly fits the data. Also, it was observed that two items NEU6 and NEU8 have factor loadings below the threshold value of 0.70 i.e. 0.57 and 0.53 respectively. However, it was decided to have a closer look on these items after re-specifying the model to see if these values improve because they were over 0.5 which is the minimum acceptable threshold value for a factor loading (Hair et al., 2010).

In this case, often the solution to improve model fit lies in checking the modification indices and correlating the error terms to modify the model. After looking at the modification indices, the highest value was in between e6-e7 so these two error terms were correlated and the model was estimated again. This time again, the model failed to improve significantly as the chi-square value was significant and RMSEA value also did not improve much from the

previous model. Upon looking at modification indices again, this time the highest value was in between e4-e5 so these error terms were correlated and model was tested again to see if the model fitness values improve. Even this time, the chi-square value remain significant and RMSEA value was out of threshold value. So for one last time, modification indices were observed and this time around, the value for e2-e5 was highest so these error terms were correlated and model was estimated once again. By looking at the model fit values, this time the values improved a lot but as described earlier, the items of NEU6 and NEU8 was observed closely after every iteration of model evaluation and both of these items' factor loading dropped with each iteration with NEU6 value being 0.51 and NEU8 value being 0.44 which was below the minimum acceptable criteria of 0.5 so it was decided to remove the NEU8 item first to see if the model fitness values improve. As expected, the values did improve and so does in the case of removing NEU6 from further analysis because it also got below the threshold value in next iteration. The model fitness values (x^2=16.839, df=7, x^2/df=2.406, p=0.018, GFI=0.986, AGFI=0.957, NFI=0.988, TLI=0.985, CFI=0.993, RMSEA= 0.061) indicated that the model is a good fit. Remaining six items for further analysis have acceptable factor loadings ranging from 0.68 to 0.90 as shown in Table 4.8.

Table 4.8: The description of Neuroticism Scale

Item	**Coding**	**Loading**	**Status**
I see myself as someone who…			
…Is depressed, Blue.	NEU1	.70	Retained
…Is relaxed, handles stress well.	NEU2	.88	Retained
…Can be tense.	NEU3	.90	Retained
…Worries a lot.	NEU4	.72	Retained
…Is emotionally stable, not easily upset.	NEU5	.80	Retained
…Can be moody.	NEU6	.49	Deleted
…Remains calm in tense situations.	NEU7	.68	Retained
…Gets nervous easily.	NEU8	.44	Deleted

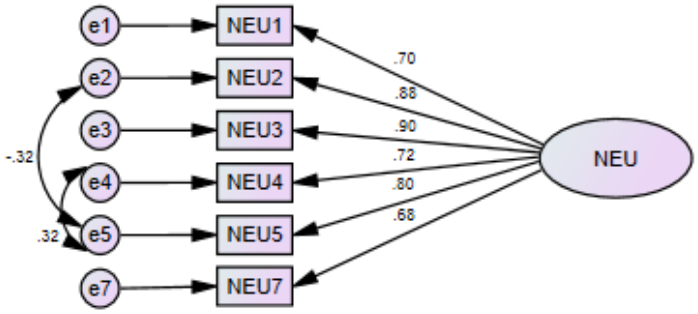
	Model Fitness Indices
	x^2=16.839, df=7, x^2/df=2.406, p=0.018, GFI=0.986, AGFI=0.957, NFI=0.988, TLI=0.985, CFI=0.993, RMSEA= 0.061

Figure 4.6: CFA: Measurement model for Neuroticism

4.10.1.7 Personal Demands

Present study has hypothesized that similar to the second order construct of job demands, the construct of personal demands can also function in the same way if it is proven that the constructs of self-criticism and neuroticism can serve as first order reflective factors for a higher order construct namely personal demands. The construct of personal demands was assessed indirectly by asking questions about self-criticism and neuroticism so there were no items for personal demands in the questionnaire. A second order CFA was set up in a similar way explained in the case of job demands in a previous section where the two first order factors of self-criticism and neuroticism were treated as endogenous constructs so they needed their own error terms (Byrne, 2016). The single headed arrows pointing from the latent construct of personal demands towards self-criticism and neuroticism were drawn to prove the causal relationship.

The model was run for the first time without any error term being correlated as in the first order factors' independent measurement model but the model fitness values (x^2=171.505, df=34, x^2/df=5.044, p=0.000, GFI=0.919, AGFI=0.870, NFI=0.928, TLI=0.922, CFI=0.941, RMSEA= 0.103) revealed a poor fit. Modification indices were observed to find out if the same modification indices show up in the second order CFA. Upon inspection, e1-e4 were the terms with highest value so these error terms were correlated and the model was evaluated again to see any improvement in the model fit values. Even this time, the model fitness values have shown a poor fit so modification indices were observed again to find out that now the highest value is between e8-e9 so these error terms were correlated and model was run again to find out that some of the values increased and became par with the standards but others like chi-square value was still significant and RMSEA value was still showing a problem. So modification indices were observed for one last time and this time e6-e9 was the highest value so it was decided to covary/correlate these error terms and then the model was saved and evaluated yet again.

This time the model fitness estimates (x^2=88.086, df=31, x^2/df=2.841, p=0.000, GFI=0.957, AGFI=0.923, NFI=0.963, TLI=0.964, CFI=0.976, RMSEA= 0.070) have shown significant improvement from all previously tested models in this case but chi-square value still remained significant but it "is well known in the SEM literature and as you will also readily recognize by now, the chi-square value for the hypothesized model, particularly when the sample size is large, will typically always suggest rejection of the model" (Byrne, 2016, p. 389). And as Hair et al. (2010, p. 578) noted that "although the χ^2 test provides a test of statistical significance, these mathematical properties present trade-offs for the researcher. Although larger sample sizes are often desirable, just the increase in sample size itself will make it more difficult for those models to achieve a statistically insignificant GOF. Moreover, as more indicators are

added to the model, because of either more constructs or better measurement of constructs, this will make it more difficult in using chi-square to assess model fit. For this reason, the χ^2 GOF test is often not used as the sole GOF measure. Researchers have developed many alternative measures of fit to correct for the bias against large samples and increased model complexity."

In case of second order CFA for personal demands, all other fitness indices have shown reasonably good fit because all of these indices displayed that they meet the standard values. Moreover, the factor loadings for all items and for both first order factors of self-criticism (0.88) and neuroticism (0.82) are above the threshold value of 0.7 or above (Hair et al., 2010). So, it can safely be concluded that personal demands is a second order reflective construct (just like job demands) with two first order reflective constructs of self-criticism and neuroticism.

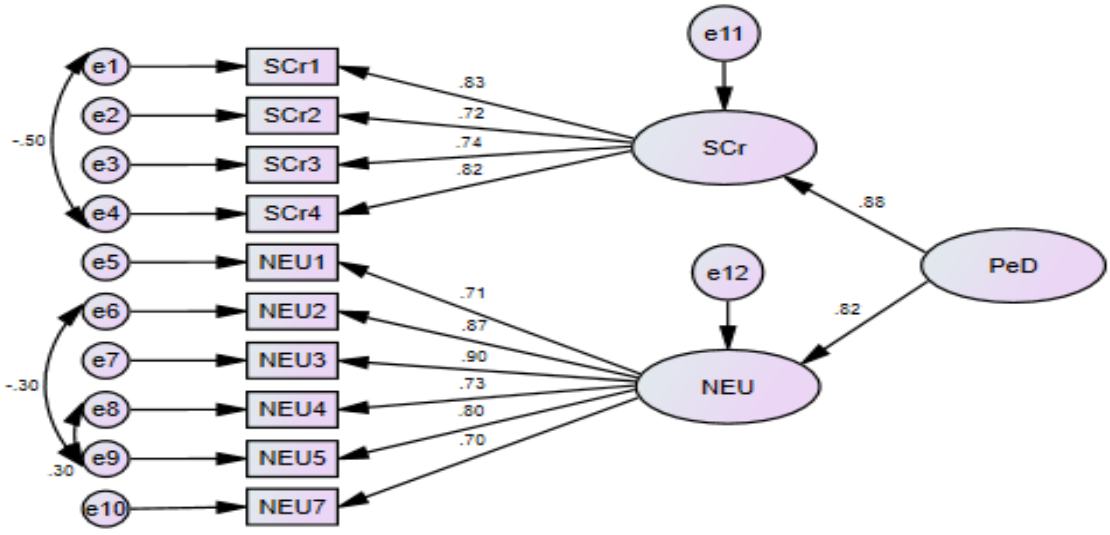


Figure 4.7: Second order CFA for the construct of Personal Demands

4.10.1.8 Anxiety

The scale for anxiety contained five items in the questionnaire. The detailed description of the scale i.e. items, coding, loadings and decision about their inclusion or deletion from further analysis can be found in Table 4.9. Independent measurement model to assess the factor loadings and model fitness estimates for anxiety scale's five items was set up and analyzed. The results revealed that all the factor loadings ranged between 0.76 to 0.95 which are all meeting the standards of ideal factor loading of 0.7 or above (Hair et al., 2010). But the model fitness indices (x^2=73.369, df=5, x^2/df=14.674, p=0.000, GFI=0.927, AGFI=0.728, NFI=0.960, TLI=0.925, CFI=0.962, RMSEA= 0.189) revealed the model is poor fit.

Modification indices were observed to see where the problem lies. It was detected that few error terms have large number of co-variances so in order to improve the model, the highest value between e1-e2 was chosen to be correlated in order to improve the model fitness. The model was reanalyzed and it was found that while the model fit estimates were improved but still the model could not be called a good fit so modification indices were observed again and this time the error terms of e1-e5 were correlated to check if doing so would improve the model fitness. This time, the model fitness estimates (x^2=6.621, df=3, x^2/df=2.207, p=0.085, GFI=0.993, AGFI=0.966, NFI=0.996, TLI=0.993, CFI=0.998, RMSEA= 0.056) improved significantly as all the estimates used for estimating model fitness indicated that model can now be called a good fit.

Table 4.9: The description of Anxiety Scale

Item	Coding	Loading	Status
Because of your work, have you recently…			
… Lost much sleep over worry?	Anx1	.76	Retained
… Felt constantly under strain?	Anx2	.86	Retained
… Been getting scared or panicky for no good reason?	Anx3	.93	Retained
… Found everything getting on top of you?	Anx4	.95	Retained
…Been feeling nervous and strung-up all the time?	Anx5	.81	Retained

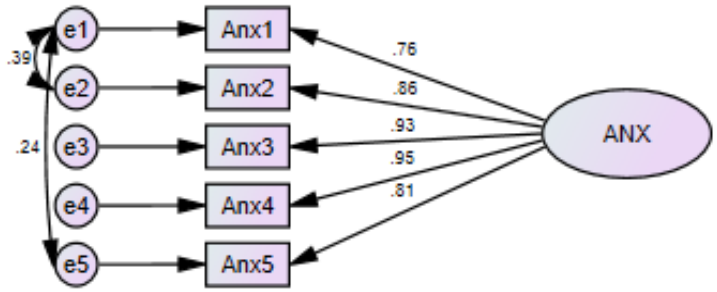
	Model Fitness Indices
	x^2=6.621, df=3, x^2/df=2.207, p=0.085, GFI=0.993, AGFI=0.966, NFI=0.996, TLI=0.993, CFI=0.998, RMSEA= 0.056

Figure 4.8: CFA: Measurement model for Anxiety

4.10.1.9 Depression

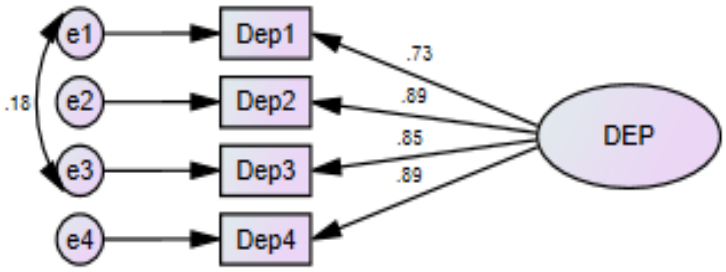
Four items were used to assess the prevalence of depression in nurses working in private sector hospitals of Pakistan. These four items, how they were coded in questionnaire and their factor loadings as a result of independent measurement model are displayed in Table 4.10. The model was analyzed for these four items to assess the model fitness and results have shown that model fit values (x^2=8.232, df=2, x^2/df=4.116, p=0.016, GFI=0.989, AGFI=0.945, NFI=0.992, TLI=0.982, CFI=0.994, RMSEA= 0.090) were not adequate to call the model a good fit because the value for chi-square was significant and RMSEA value was just over the required minimum acceptable standard of 0.08 (Hair et al., 2010).

Modification indices were observed to see if the model fitness can improve. It was found that the error terms of e1-e3 can be correlated to improve the model fitness. After correlating these error terms, model was reanalyzed and this time, it has brought huge improvements in the model fitness estimates (x^2=0.581, df=1, x^2/df=0.581, p=0.446, GFI=0.999, AGFI=0.992, NFI=0.999, TLI=1.002, CFI=1.000, RMSEA= 0.000) and now the model can be called a good fit for sample data. All the four items were retained for further analysis because the

factor loadings of these items ranged from 0.73 to 0.89 and hence are over the threshold of 0.70 or above (Hair et al., 2010).

Table 4.10: The description of Depression Scale

Item	Coding	Loading	Status
Because of your work, have you recently…			
… Been thinking of yourself as a worthless person?	Dep1	.73	Retained
… Felt that life is entirely hopeless?	Dep2	.89	Retained
… Felt that life isn't worth living?	Dep3	.85	Retained
… Found at times you couldn't do anything because your nerves were too bad?	Dep4	.89	Retained



Model Fitness Indices

x^2=0.581, df=1,
x^2/df=0.581, p=0.446,
GFI=0.999, AGFI=0.992,
NFI=0.999, TLI=1.002,
CFI=1.000, RMSEA=
0.000

Figure 4.9: CFA: Measurement model for Depression

4.10.1.10 Job Stress

Similar to the case of job and personal demands, a second order CFA was conducted for job stress to check if the first order factor of anxiety and depression can be represented by a higher order latent construct. Job stress was measured indirectly through anxiety and depression items in the questionnaire and thus it does not have its own items in the questionnaire. First order factors of anxiety and depression are in this case endogenous variables and thus they were given their own error terms and two single headed arrows

pointing from job stress to anxiety and depression were drawn to test the causal relationship and for factor loadings from the second order construct to first order constructs so as to prove it a higher order construct (Byrne, 2016).

The model was first analyzed by ignoring the covariances among error terms that were present in the respective first order CFA of anxiety and depression to check if the second order CFA was good enough without them, it was observed that the model fitness estimates (x^2=112.108, df=26, x^2/df=4.312, p=0.000, GFI=0.939, AGFI=0.894, NFI=0.963, TLI=0.960, CFI=0.971, RMSEA= 0.093) have shown a poor fit mainly due to chi-square value being significant and because RMSEA value also did not meet the required threshold. By looking at the modification indices, it was discovered that the same covariances can still be found between the error terms that were originally drawn in the first order factors of anxiety and depression. After correlating the error terms of e1-e2, e1-e5 and e6-e8, the model was reanalyzed and this time the model fitness indices (x^2=41.734, df=23, x^2/df=1.815, p=0.010, GFI=0.976, AGFI=0.954, NFI=0.986, TLI=0.990, CFI=0.994, RMSEA= 0.046) have shown a significant improvement from previous iteration except for the significance of chi-square value but as stated earlier this value is sensitive to large sample sizes and if other fit indices are adequate a model to call a good fit then we can ignore the significant value of chi-square (Hair et al., 2010; Byrne, 2016).

The factor loadings from the second order reflective construct of job stress to anxiety and depression was 0.79 and 0.61 respectively which shows that both anxiety and depression can be represented by a higher order construct of job stress.

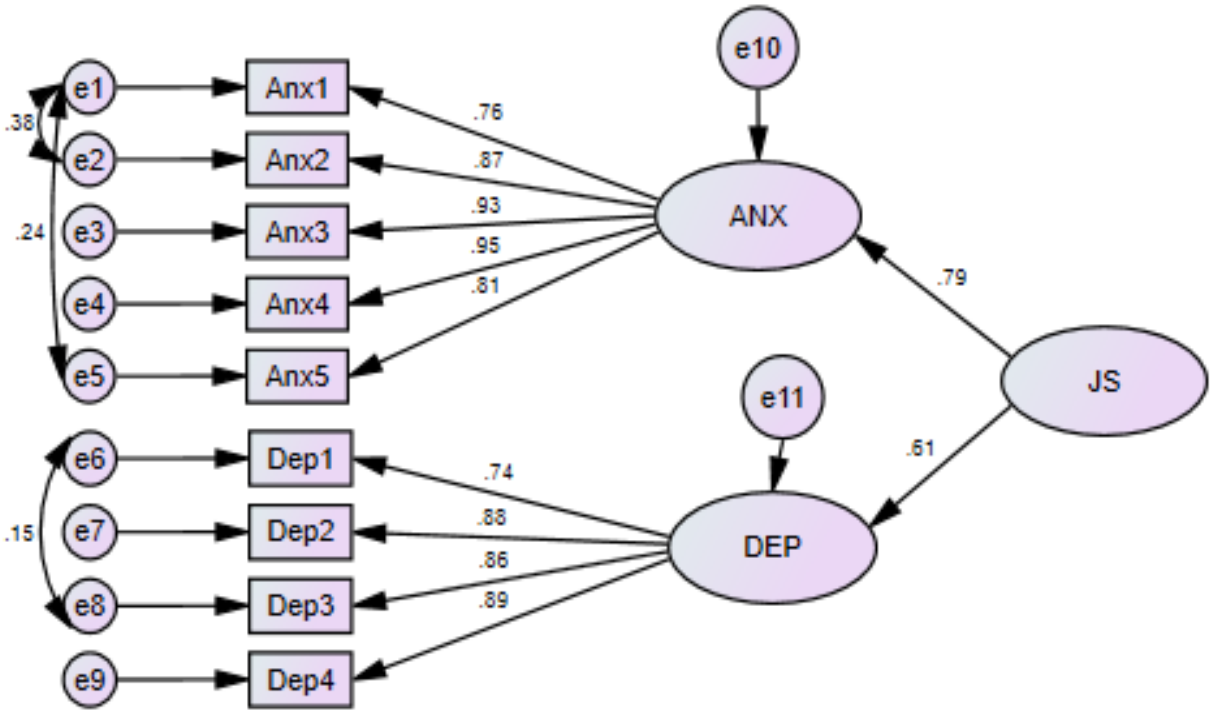


Figure 4.10: Second Order CFA: Measurement model for Job Stress

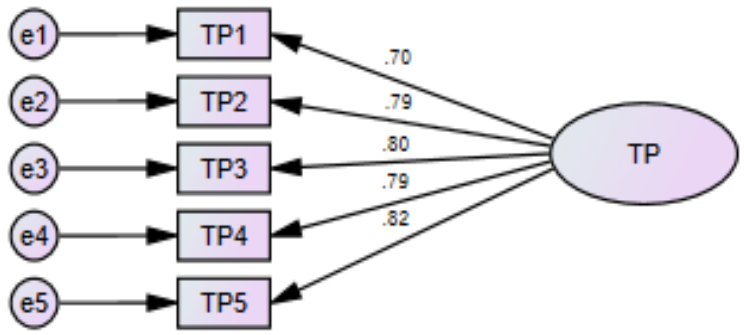
4.10.1.11 Task Performance

The scale to measure nurses' task performance was comprised of five items so an independent measurement model to assess how well these items performs in context of this scale was analyzed to check the factor loadings for each item and overall model fitness for this scale. The details about the scale and item loadings are presented in Table 4.11. The analysis revealed that the factor loadings of all items ranged from 0.70 to 0.82 which are all equal to or above the threshold value (Hair et al., 2010). Moreover, model fitness estimates (x^2=9.573,

df=5, x^2/df=1.915, p=0.088, GFI=0.990, AGFI=0.970, NFI=0.990, TLI=0.991, CFI=0.995, RMSEA= 0.049) are all indicating that the model is a good fit and no re-specification or modification is needed.

Table 4.11: The description of Task Performance Scale

Item	Coding	Loading	Status
I meet criteria for the performance.	TP1	.70	Retained
I fulfill all the requirements of the job.	TP2	.79	Retained
I am competent in all areas of the job, handle tasks with proficiency.	TP3	.80	Retained
I plan and organize to achieve objectives of the job and meet deadlines.	TP4	.79	Retained
I perform well in the overall job by carrying out tasks as expected.	TP5	.82	Retained



Model Fitness Indices
x^2=9.573, df=5, x^2/df=1.915, p=0.088, GFI=0.990, AGFI=0.970, NFI=0.990, TLI=0.991, CFI=0.995, RMSEA= 0.049

Figure 4.11: CFA: Measurement model for Task Performance

4.10.1.12 Contextual Performance

The scale for contextual performance originally contained six items in the questionnaire. The first order CFA for these six items comprising the scale for contextual performance was conducted to assess the factor loadings and model fitness estimates for the model in Amos graphics. The detailed description about the contextual performance scale including the coding and factor loadings for each item is presented in Table 4.12. The result of the CFA revealed that only one item i.e. CP1 has a factor loading lower than 0.70 but it was still under the minimum threshold of 0.50 so it was decided to observe this item closely with each iteration of the model estimation. All other factor loadings were acceptable and ranged from 0.69 to 0.80.

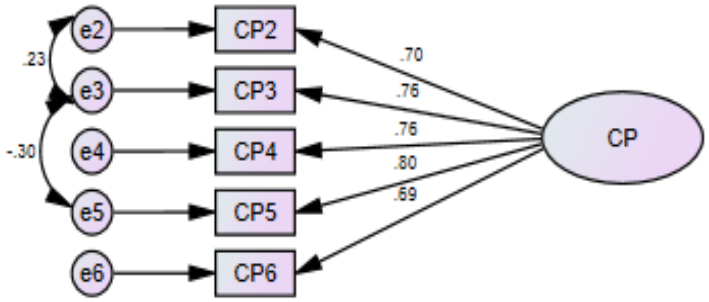
The model fitness estimates (x^2=46.597, df=9, x^2/df=5.177, p=0.000, GFI=0.962, AGFI=0.911, NFI=0.951, TLI=0.933, CFI=0.960, RMSEA= 0.105) indicated a poor fit and thus modification indices were observed and found that there were few error terms that can be correlated and model fitness can be improved so initially the error terms of e2-e3 were correlated and model was re-analyzed. This time, the model fitness estimates brought better values but still the chi-square value was significant and from modification indices, it was discovered that model can further be improved if error terms of e3-e5 were correlated. So after doing that, the model was re-analyzed and this time all the model fit indices (x^2=15.310, df=7, x^2/df=2.187, p=0.032, GFI=0.987, AGFI=0.961, NFI=0.984, TLI=0.981, CFI=0.991, RMSEA= 0.056) have shown improvement but chi-square value was still significant.

In the meanwhile, it was observed that with each iteration the factor loading of CP1 was dropping and it dropped even below the minimum acceptable value 0.5 so it was decided to delete this item to check if it improves the model fitness. As expected, all model fit values

(x^2=6.829, df=3, x^2/df=2.276, p=0.078, GFI=0.993, AGFI=0.963, NFI=0.992, TLI=0.984, CFI=0.995, RMSEA= 0.058) have shown significant improvement and moreover the chi-square value was now insignificant at 0.078 so the model was now considered a good fit.

Table 4.12: The description of Contextual Performance Scale

Item	Coding	Loading	Status
I cooperate fully with others by willingly sacrificing my own personal interests for the good of the team.	CP1	.46	Deleted
I go out of my way to congratulate others for their achievements.	CP2	.70	Retained
I know and follow both the letter and the spirit of organizational rules and procedures, even when the rules seem personally inconvenient.	CP3	.76	Retained
I avoid performing any tasks that are not normally a part of my own duties by arguing that they are somebody else's responsibility.	CP4	.76	Retained
I consistently take the initiative to pitch in and do anything that might be necessary to help accomplish team or organizational objectives, even if such actions are not normally part of my own duties.	CP5	.80	Retained
I look for opportunities to learn new knowledge and skills from others at work and from new and challenging job assignments.	CP6	.69	Retained



Model Fitness Indices
x^2=6.829, df=3, x^2/df=2.276, p=0.078, GFI=0.993, AGFI=0.963, NFI=0.992, TLI=0.984, CFI=0.995, RMSEA= 0.058

Figure 4.12: CFA: Measurement model for Contextual Performance

4.10.1.13 Job Performance

A second order CFA was conducted for the construct of job performance in order to find out that the first order reflective factors of task performance and contextual performance can be reflected by a higher order construct i.e. job performance. Similar to the case of job demands, personal demands and job stress, the construct of job performance was indirectly measured through the constructs of task and contextual performance so there were no items for job performance in the questionnaire. In case of second order CFA, the first order factors become endogenous constructs and thus they needed to have their own error terms. Single headed arrows pointing from job performance to task and contextual performance were drawn so that causal relationship can be assessed and to see if job performance can really become a second order construct. In order to identify the model, the Amos graphics requires that at least one path is constrained to 1 as a regression weight (Byrne, 2016).

The model was analyzed without correlating any error terms as they were correlated in their respective first order CFAs to check if those error terms still needs to be correlated in case of higher order CFA or the model can be a good fit without them. After running the model, the model fitness estimates (x^2=68.780, df=34, x^2/df=2.023, p=0.000, GFI=0.966, AGFI=0.946, NFI=0.965, TLI=0.976, CFI=0.982, RMSEA= 0.052) revealed that all the fit indices except one were indicative of a good fit model and one exception was for chi-square value because it was significant. So modification indices were observed to find out if model can be improved. It was discovered that the same suggestions for modification indices were there as in case of first order CFAs. First the error terms of e6-e7 were correlated, the model fit indices improved but the chi-square value was still significant. In next iteration, the error terms of e7-e9 were correlated and this time the model fitness (x^2=36.442, df=32, x^2/df=1.139, p=0.270,

GFI=0.982, AGFI=0.969, NFI=0.981, TLI=0.997, CFI=0.998, RMSEA= 0.019) was improved significantly and now chi-square value became insignificant and the model can now be declared as a good fit. Job performance acts as a second order reflective construct because the factor loadings were all above the threshold value i.e. 0.66 for task performance and 0.89 for contextual performance.

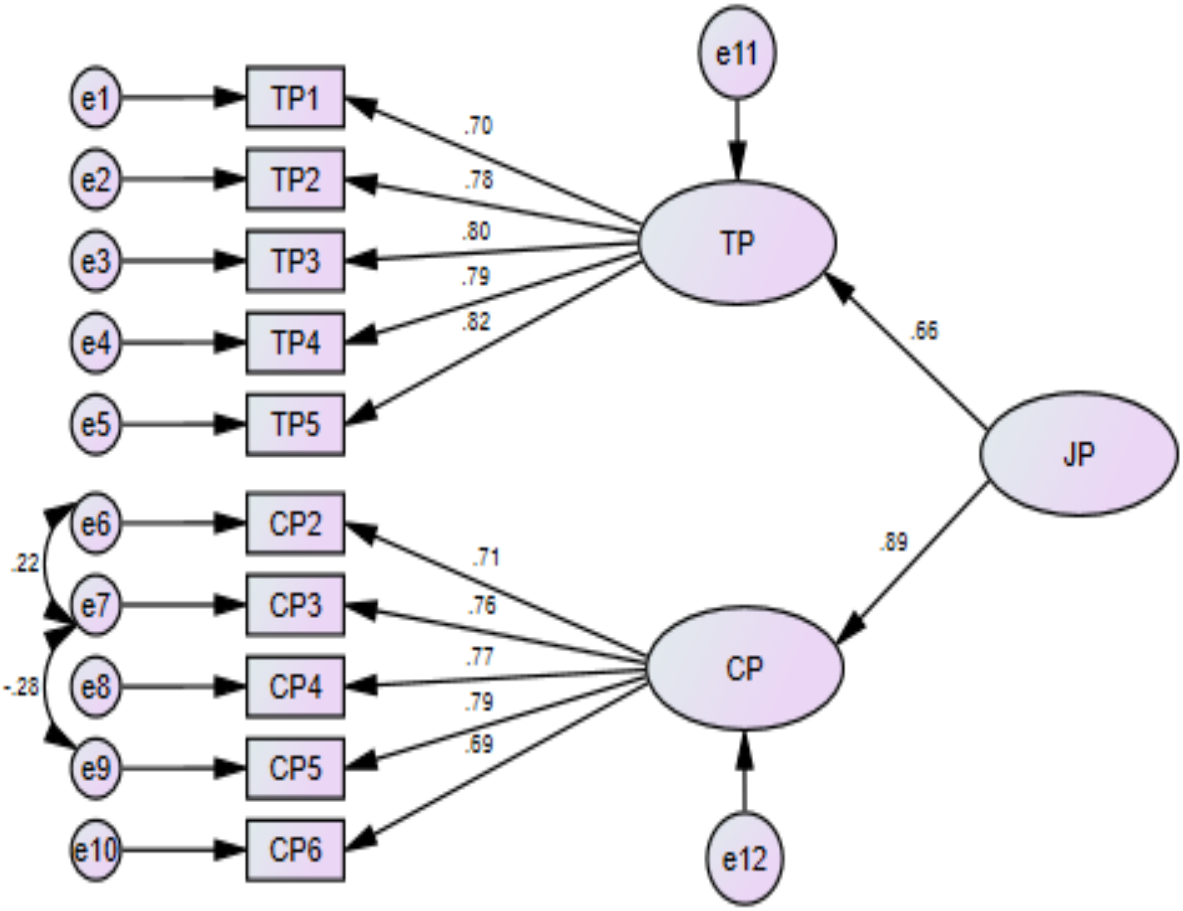


Figure 4.13: Second Order CFA: Measurement Model for Job Performance

4.10.1.14 Self-Compassion

The construct of self-compassion was operationalized as a personal resource in the context of present study. Initially, the scale for self-compassion was comprised of 12 items but after using item parceling approach, the items were reduced to 6 as it was a reflective measure and thus items can be used interchangeably and because all items flow in the same direction so the items in the same factor were averaged to make a single item out of two items (Matsunaga, 2008). It was also done because all the other factors have lower number of items in their respective scales so in order to achieve the best parsimonious model it was found appropriate to use item parceling approach (Bandalos & Finney, 2001; Little, Cunningham, Shahar & Widaman, 2002; Williams & O'Boyle, 2008). So an independent measurement model to assess the factor loadings and model fitness for these six items was set up and analyzed in Amos graphics. The description of this scale is presented in Table 4.13. All the factor loadings were in the range of 0.85 to 0.93 which shows that they are all good factor loadings and are all well above the ideal threshold value of 0.7 or above (Hair et al., 2010).

However, the model fit indices (x^2=36.735, df=9, x^2/df=4.082, p=0.000, GFI=0.968, AGFI=0.925, NFI=0.986, TLI=0.982, CFI=0.989, RMSEA= 0.090) were indicative of a poor fit and thus modification indices were observed and it was found that the highest covariance was between the error terms of e5-6. So it was decided to correlate these error terms in order to improve the model fitness. By doing so, the model fit estimates (x^2=20.938, df=8, x^2/df=2.617, p=0.007, GFI=0.983, AGFI=0.955, NFI=0.992, TLI=0.990, CFI=0.995, RMSEA= 0.065) improved but the chi-square value was still significant. As stated earlier, it is common to get a significant chi-square value if the sample size is large and so we cannot just reject a model based on a significant chi-square value as it is sensitive to large sample sizes (Hair et al., 2010; Byrne, 2016). All other estimates show that the model is a good fit.

Table 4.13: The description of Self-Compassion Scale

Coding	Loading	Status
SC1	.87	Retained
SC2	.89	Retained
SC3	.93	Retained
SC4	.93	Retained
SC5	.89	Retained
SC6	.85	Retained



Model Fitness Indices
x^2=20.938, df=8, x^2/df=2.617, p=0.007, GFI=0.983, AGFI=0.955, NFI=0.992, TLI=0.990, CFI=0.995, RMSEA= 0.065

Figure 4.14: CFA: Measurement model for Self-Compassion

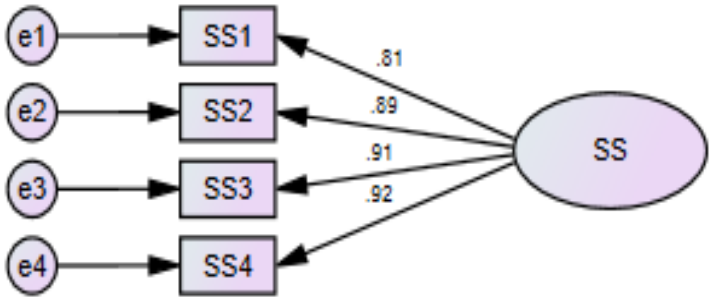
4.10.1.15 Social Support

Only one job resource of social support has been selected to study moderating effect in the positive relationship of job demands and job stress. Four items were used to measure the concept. An independent measurement model for these four items was evaluated to assess the items' factor loadings and to analyze the model fitness. The description about this scale is presented in Table 4.14. The analysis revealed that all the factor loadings of these four items were ranging from 0.81 to 0.92 and are all well above the minimum threshold of ideal factor

loading i.e. 0.70 (Hair et al., 2010). Moreover, the model fitness indices (x^2=0.165, df=2, x^2/df=0.083, p=0.921, GFI=1.000, AGFI=0.999, NFI=1.000, TLI=1.004, CFI=1.000, RMSEA= 0.000) also indicated that all of these estimates are meeting the criteria of calling a model good fit.

Table 4.14: The description of Social Support Scale

Item	Coding	Loading	Status
How often do you get help and support from your colleagues?	SS1	.81	Retained
How often are your colleagues willing to listen to your work related problems?	SS2	.89	Retained
How often do you get help and support from your immediate superior?	SS3	.91	Retained
How often is your immediate superior willing to listen to your work related problems?	SS4	.92	Retained



Model Fitness Indices
x^2=0.165, df=2, x^2/df=0.083, p=0.921, GFI=1.000, AGFI=0.999, NFI=1.000, TLI=1.004, CFI=1.000, RMSEA= 0.000

Figure 4.15: CFA: Measurement model for Social Support

4.10.1.16 Pooled CFA (Measurement Model for the Study)

In previous sections, the scale wise and construct wise first order and second order CFAs were evaluated and their model fit estimates were reported and improved in some cases. In this section however, the pooled CFA will be conducted to analyze how well the variables do

in overall measurement model along with all other variables. As observed earlier, the constructs of job demands, personal demands, job stress and job performance can all be used as a second order reflective constructs and reflect their respective first order variables but it will finally be checked in overall measurement model because the independent and separate measurement models are a good tool to assess the variables and constructs' model fitness but it is imperative that they perform equally or more good when tested with other variables in overall measurement model. This is also important because we have to check the reliability and validity of these variables after assessing overall CFA's model fitness. So an overall model was set up including all four second order reflective factors and their respective first order variables to check the unidimensionality, factor loadings and pooled CFA's model fit estimates. This model was before any error terms are correlated unlike in their respective independent first and second order measurement models. The items which were deleted in the individual CFA's were also absent in this model.

It was found that the model fit estimates were indicative of poor fit along with some variables showing higher correlations with each other which should not be the case (Kline, 2016). Correlations equal to or higher than 0.85 "is often used as the cutoff criterion for problematic discriminant validity" (Brown, 2015, p. 146). In order to tackle this problem, the constructs of job stress and job performance were dropped as second order factors and instead their first order variables were used in the pooled CFA. This was also considered the best solution because Amos graphics output was showing that the covariance matrix is not positive definite and such solution is said to be inadmissible and is called an improper solution while using Amos for CB-SEM (Wothke, 1993). This has helped solved both of these problems and new pooled CFA with first order factors of job stress and job performance was tested for its model fitness and unidimensionality. This overall measurement model is presented in Figure 4.16.

The model fitness indices (x^2=1232.834, df=840, x^2/df=1.468, p=0.000, GFI=0.870, AGFI=0.854, NFI=0.896, TLI=0.961, CFI=0.964, RMSEA= 0.035) indicated a poor fit and modification indices were observed to improve the overall fitness of the model.

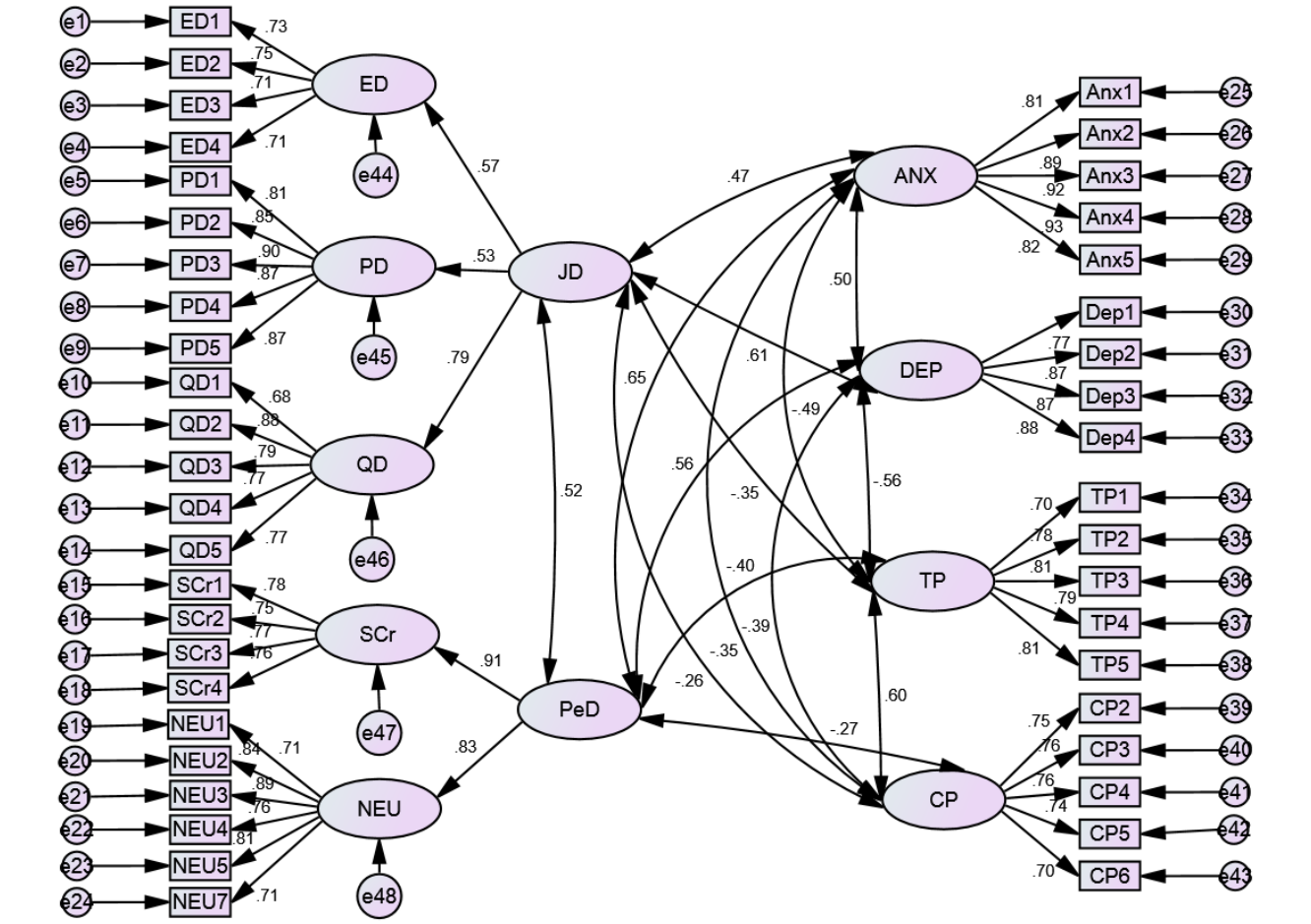


Figure 4.16: Measurement Model of the study

Modification indices have shown that some of the same error terms needs to be correlated and some new error terms covariances popped up. The values of modification indices higher than 3.84 may affect the chi-square value significantly (Meyers et al., 2006; Hair et al., 2010). Few

values were above this cut-off value and thus by correlating the error terms of e5-e6, e10-e14, e15-e18, e20-e21, e20-e23, e20-e24, e25-e26, e25-e29, e31-e33, e39-e41, e40-e42 in each iteration one by one, the model fitness estimates (x^2=1026.717, df=829, x^2/df=1.239, p=0.000, GFI=0.891, AGFI=0.876, NFI=0.913, TLI=0.980, CFI=0.982, RMSEA= 0.025, PCLOSE=1.000) improved significantly and are mostly meeting the standards or are very close to them. The chi-square value remained significant but as observed earlier, the chi-square value is sensitive to large samples and it may never be possible to achieve insignificant chi-square value in complex models and with large sample sizes (Hair et al., 2010; Byrne, 2016). If the majority of fit estimates meet the required threshold values, the model will be considered a good fit as it is very difficult to get a perfect fit estimates while analyzing large sample size (Hair et al., 2010). Besides these estimates, all the factor loadings of the items and first order factors are meeting and even exceeding the required standards. Moreover, all correlations between the variables are way under the threshold value of 0.85 or higher (Brown, 2015). Considering all of the above mentioned factors, the model fulfills the requirements to be called a good fit model for the sample data. Final measurement model of the study is presented in Figure 4.17.

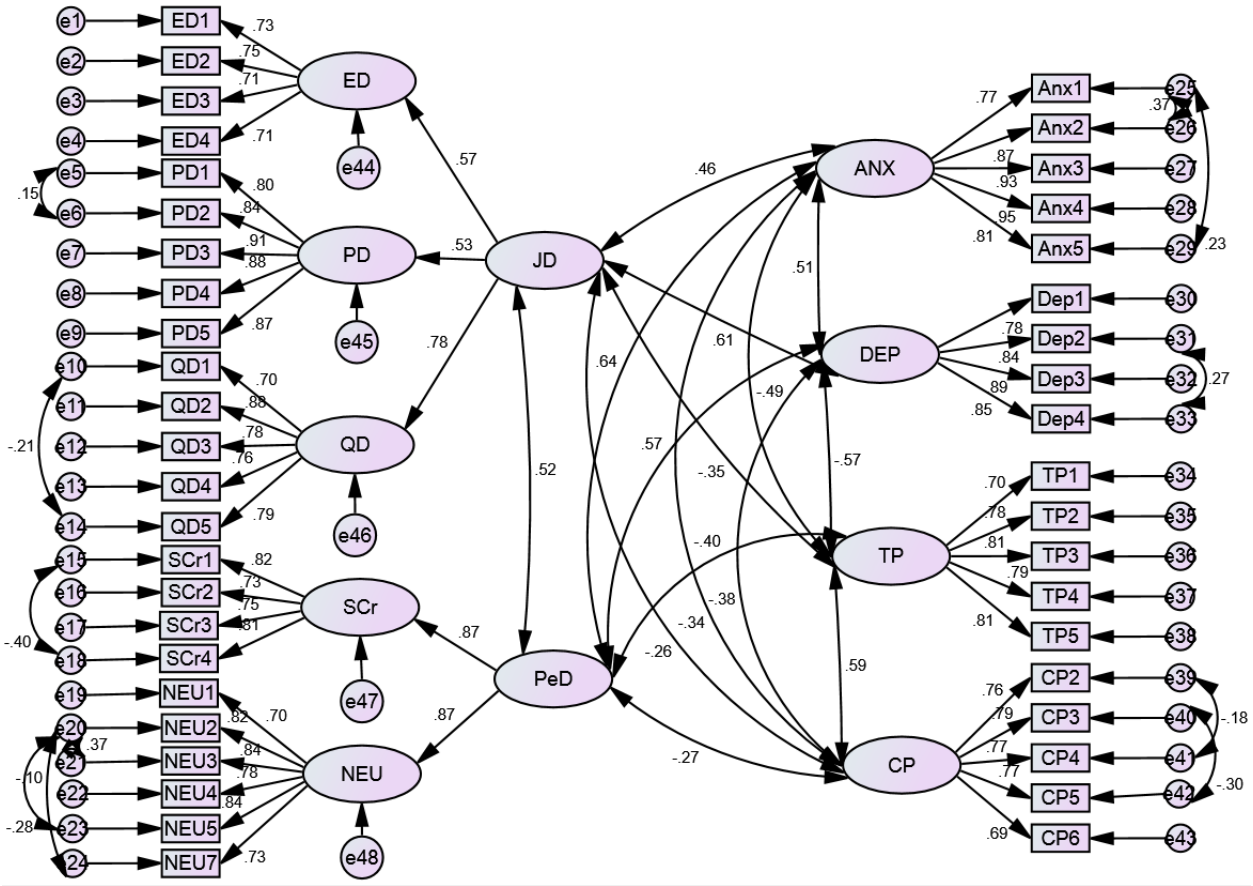


Figure 4.17: Pooled CFA: Final Measurement Model of the study

4.10.2 Reliability and Validity Assessment

After the assessment of unidimensionality in measurement models via CFA, the very next step is to evaluate all the constructs for their reliability and validity (Byrne, 2016). As defined by Hair et al. (2010, p.2), reliability is an "extent to which a variable or set of variables is consistent in what it is intended to measure. If multiple measurements are taken, the reliable measures will all be consistent in their values". Validity on the other hand is defined as an "extent to which a measure or set of measures correctly represents the concept of study—the degree to which it is free from any systematic or nonrandom error. Validity is concerned with how well the concept is defined by the measure(s)" (Hair et al., 2010, p.3). The assessment of

reliability in present study was carried out by using different estimates of Cronbach's alpha (Cronbach, 1951), composite reliability (CR) and average variance extracted (AVE) while constructs' validity was estimated by using two different types of validity i.e. convergent validity and discriminant validity.

Both the reliability and validity estimates can be measured via confirmatory factor analysis after the model is said to be fit and necessary model re-specifications are made (Hair et al., 2010; Byrne, 2016). The formula of Fornell and Larcker (1981) was used to calculate composite reliability (CR) and average variance extracted (AVE) while Cronbach's alpha coefficients were estimated in SPSS software. Nunnally (1978) believed that the value for Cronbach's alpha should be 0.7 or higher in order to call a scale reliable. Similarly, the values for composite reliability should be 0.6 or higher and values for AVE should be 0.5 or higher (Hair et al., 2010, Kline, 2016). Each construct's coefficient alpha, composite reliability and its average variance extracted is displayed in Table 4.15. It is quite evident from the results presented in this table that all values of Cronbach's alpha are above the standard value of 0.7 and thus are all acceptable (Nunnaly, 1978). Results from CFA also show that the composite reliability (CR) are also all above the threshold value and same is the case with AVE where all the values are above 0.5 (Fornell & Larcker, 1981; Hair et al., 2010; Byrne, 2016; Kline, 2016). Moreover, the results also revealed that the values of Cronbach's alpha and composite reliability are almost the same further cementing the fact that the scales used for this study are highly reliable and show excellent internal consistency.

Table 4.15: Evaluation of Measurement Model

Item	Standardized loading	Alpha	CR.	AVE.
Emotional Demands				
ED1	0.74			
ED2	0.75	0.816	0.816	0.527
ED3	0.71			
ED4	0.71			
Physical Demands				
PD1	0.79			
PD2	0.84	0.933	0.934	0.738
PD3	0.91			
PD4	0.88			
PD5	0.87			
Quantitative Demands				
QD1	0.70			
QD2	0.89	0.882	0.888	0.614
QD3	0.78			
QD4	0.75			
QD5	0.79			
Self-Criticism				
SCr1	0.76			
SCr2	0.83	0.845	0.861	0.608
SCr3	0.84			
SCr4	0.70			
Neuroticism				
NEU1	0.70			
NEU2	0.88			
NEU3	0.90	0.905	0.908	0.622
NEU4	0.72			
NEU5	0.80			
NEU7	0.68			
Anxiety				
Anx1	0.76			
Anx2	0.86	0.942	0.938	0.752
Anx3	0.93			
Anx4	0.95			
Anx5	0.81			

Table 4.15 continued

Depression				
Dep1	0.73			
Dep2	0.89	0.908	0.906	0.707
Dep3	0.85			
Dep4	0.89			
Task Performance				
TP1	0.70			
TP2	0.79	0.886	0.887	0.611
TP3	0.80			
TP4	0.79			
TP5	0.82			
Contextual Performance				
CP2	0.70			
CP3	0.76	0.859	0.869	0.571
CP4	0.76			
CP5	0.80			
CP6	0.69			
Self-Compassion				
SC1	0.87			
SC2	0.89			
SC3	0.93	0.959	0.959	0.798
SC4	0.93			
SC5	0.89			
SC6	0.85			
Social Support				
SS1	0.81			
SS2	0.89	0.930	0.933	0.778
SS3	0.91			
SS4	0.92			

Similar to reliability, convergent and discriminant validity can also be estimated by using the CFA (Hair et al., 2010; Byrne, 2016). Convergent validity is the "extent to which indicators of a specific construct converge or share a high proportion of variance in common" (Hair et al., 2010, p. 601). One way to assess the convergent validity is to observe the factor loadings of the statistically significant items in each scale. It can be noted that all the scales used in present study have good convergent validity as it can be observed from Table 4.15 that all the factor loadings are acceptable and are >0.5 with significant values < 0.001 (Holmes-Smith,

Coote & Cunningham, 2006). The values of AVE which are >0.5 also indicate good convergent validity of each scale as can be in seen in both Table 4.15 and Table 4.16.

Discriminant validity, on the other hand, is the "extent to which a construct is truly distinct from other constructs both in terms of how much it correlates with other constructs and how distinctly measured variables represent only this single construct." (Hair et al., 2010, p. 601). It was assessed by using two approaches. First is to assess inter-variable correlations and value of correlation coefficient in this case should be lower than 0.85 to avoid any problems of discriminant validity (Brown, 2015; Kline, 2016). Second way is to assess it by checking if the average variance extracted for each construct is greater than the square of correlations between any two constructs (Fornell & Larcker, 1981). It is evident from Table 4.16 that each construct has good discriminant validity as no correlation between any two construct is equal to or higher than 0.85 and the AVE values are all greater than the square of correlations among any two variables.

Table 4.16: Analysis of Constructs' Validity

	AVE	ED	PD	QD	SCr	NEU	ANX	DEP	TP	CP	SS	SC
ED	0.527	**0.726**										
PD	0.738	0.423***	**0.859**									
QD	0.614	0.404***	0.406***	**0.784**								
SCr	0.608	0.283***	0.229***	0.395***	**0.780**							
NEU	0.622	0.200**	0.234***	0.325***	0.749***	**0.789**						
ANX	0.752	0.291***	0.235***	0.358***	0.533***	0.569***	**0.867**					
DEP	0.707	0.311***	0.241***	0.527***	0.506***	0.472***	0.506***	**0.841**				
TP	0.611	-0.215***	-0.147*	-0.280***	- 0.341***	-0.357***	-0.485***	-0.567***	**0.782**			
CP	0.571	-0.151*	-0.197***	-0.178**	-0.201***	-0.259***	-0.340***	-0.384***	0.591***	**0.756**		
SS	0.778	-0.143*	-0.164**	-0.167**	-0.042	-0.099†	-0.142*	-0.180**	0.089	0.400***	**0.882**	
SC	0.798	-0.238***	-0.274***	-0.411***	-0.304***	-0.346***	-0.400***	-0.558***	0.515***	0.308***	0.156**	**0.893**

Significance of correlations: † p < 0.100, * p < 0.050, ** p < 0.010, *** p < 0.001

4.11 Structural Model Assessment: Second Stage of SEM

After proving unidimensionality, reliability and validity along with model fitness of all constructs and overall measurement model, the second stage of structural equation modeling which is used to test the hypotheses of the study was carried out. Because "once it is known that the measurement model is operating adequately, one can then have more confidence in findings related to the assessment of the hypothesized structural model" (Byrne, 2016, p. 189). Before moving to the second stage, the multivariate assumptions have been tested including multicollinearity and to test if the data contains multivariate outliers. Upon testing, there was no issue of multicollinearity among the independent variables to predict the dependent variable. Moreover, the issue of multivariate outliers was addressed prior to conducting CFA via Mahalanobis distance test.

Byrne (2016, p. 13) described that "the structural model defines relations among the unobserved variables. Accordingly, it specifies the manner by which particular latent variables directly or indirectly influence (i.e., "cause") changes in the values of certain other latent variables in the model". Present study has also hypothesized many direct and indirect relationships between the latent constructs and thus it is proper to apply the second stage of SEM to assess the causality of the relationships among latent variables (Hair et al., 2010). The model was developed based on the theory and is then tested for model fitness using fitness indices like it was done for measurement model(s). It is one of the many rules of thumb that "multiple fit indices should be used to assess a model's goodness-of-fit and should include: The $\chi 2$ value and the associated df, one absolute fit index (i.e., GFI, RMSEA, or SRMR), one incremental fit index (i.e., CFI or TLI), one goodness-of-fit index (GFI, CFI, TLI, etc.) and one badness-of-fit index (RMSEA, SRMR, etc.)" (Hair et al., 2010, p. 589).

4.11.1 Hypothesized Structural Model

The structural model of the present study contained eleven variables in total including two exogenous and nine endogenous variables. The relationship i.e. causal paths between the latent constructs are shown by a single headed arrow pointing from exogenous variables to endogenous variables. It is important to note here that the single headed arrows which are drawn to depict the causal paths have their standardized regression weights displayed on them to show the strength of the relationship (Figure 4.18). The model was tested for its fitness but the model fitness estimates (x2=1299.583, df=842, x2/df=1.543, p=0.000, GFI=0.864, AGFI=0.847, NFI=0.890, TLI=0.955, CFI=0.958, RMSEA= 0.038) revealed that model is not perfectly fit and can be improved if some re-specifications are made (Hair et al., 2010; Byrne, 2016). In case of structural model assessment, one way to improve the model fitness is by removing all the insignificant paths from the model (Byrne, 2016). However, this approach is only ideal if the theory is in its early stages and thus it is not adopted in present study as the structural model of the study is based on a strong theory and the objective of the study is to confirm the theory and its assumptions in context of nurses working in private hospitals of Pakistan.

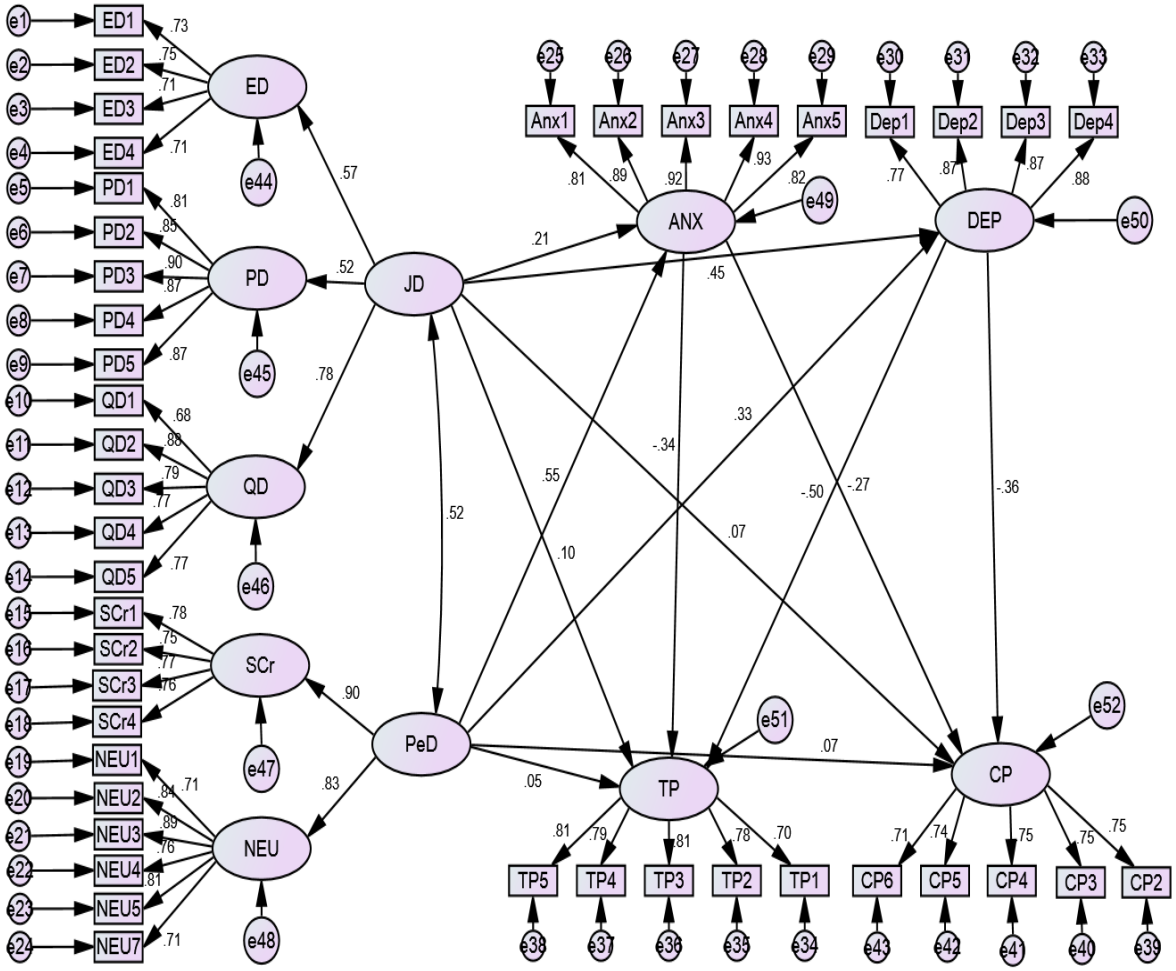


Figure 4.18: Hypothesized Structural Model

x^2=1299.583, df=842, x^2/df=1.543, p=0.000, GFI=0.864, AGFI=0.847, NFI=0.890, TLI=0.955, CFI=0.958, RMSEA= 0.038, PCLOSE=1.000

There were 12 causal relations that were hypothesized for direct effects in present study and Table 4.17 displays the results of this hypothesis testing. It is evident from the results that four out of 12 causal paths were insignificant while all others are significant. The results of these insignificant paths (H2a, H2b, H4a, H4b) are highlighted as bold in the table. The details

about the standardized regression weights, critical ratios, significance of all paths along with the decision of hypotheses being supported or rejected is presented in Table 4.17.

Table 4.17: Results of Hypotheses Testing (Direct Effects)

Hypotheses	Path	*B*	C.R.	*P*	Supported
H1a	JD-ANX	.208	2.961	.003**	Yes
H1b	JD-DEP	.453	5.122	***	Yes
H2a	JD-TP	.105	1.189	.234	No
H2b	JD-CP	.071	.725	.468	No
H3a	PeD-ANX	.552	7.455	***	Yes
H3b	PeD-DEP	.333	4.690	***	Yes
H4a	PeD-TP	.047	.556	.578	No
H4b	PeD-CP	.074	.780	.435	No
H5a	ANX-TP	-.338	-4.628	***	Yes
H5b	ANX-CP	-.267	-3.324	***	Yes
H5c	DEP-TP	-.499	-6.088	***	Yes
H5d	DEP-CP	-.365	-4.209	***	Yes

***p<.001, **p<.01, *p<.05

4.11.2 Re-specified Hypothesized Structural Model

As observed earlier, the model fitness estimates were not indicative of a perfect fit so model re-specification was needed to improve the model fit estimates and for this purpose, both standardized residual covariances and modification indices were observed (Hair et al., 2010; Byrne, 2016). This time, the model was easy to re-specify as this practice has already been done in case of measurement model. It was observed that there is no standardized residual value that exceeds the threshold of 4 because "residuals greater than |4.0| raise a red flag and suggest a potentially unacceptable degree of error" (Hair et al., 2010, p. 621). On the other hand, there were few modification indices which are similar to the suggestions in measurement model. Due to higher covariance among them, the error terms of e5-e6, e10-e14,

e15-e18, e20-e21, e20-e23, e20-e24, e25-e26, e25-e29, e31-e33, e39-e41, e40-e42 were correlated and model was estimated once again.

This time, the model fit indices (x^2=1094.798, df=831, x^2/df=1.317, p=0.000, GFI=0.885, AGFI=0.869, NFI=0.907, TLI=0.974, CFI=0.976, RMSEA= 0.029, PCLOSE=1.000) improved significantly and most of these fit indices were indicative of good model fit. Though chi-square value was still significant but it is to be expected in case of studies having large sample sizes (Hair et al., 2010; Byrne, 2016). It is rightly argued that "the quality of fit depends heavily on model characteristics, including sample size and model complexity: More complex models with larger samples should not be held to the same strict standards, and so when samples are large and the model contains a large number of measured variables and parameter estimates, cutoff values of .95 on key GOF measures are unrealistic" (Hair et al., 2010, p. 589). So, it can be concluded that the structural model presented in Figure 4.19 is best possible parsimonious structural model for the present study having the acceptable fitness indices.

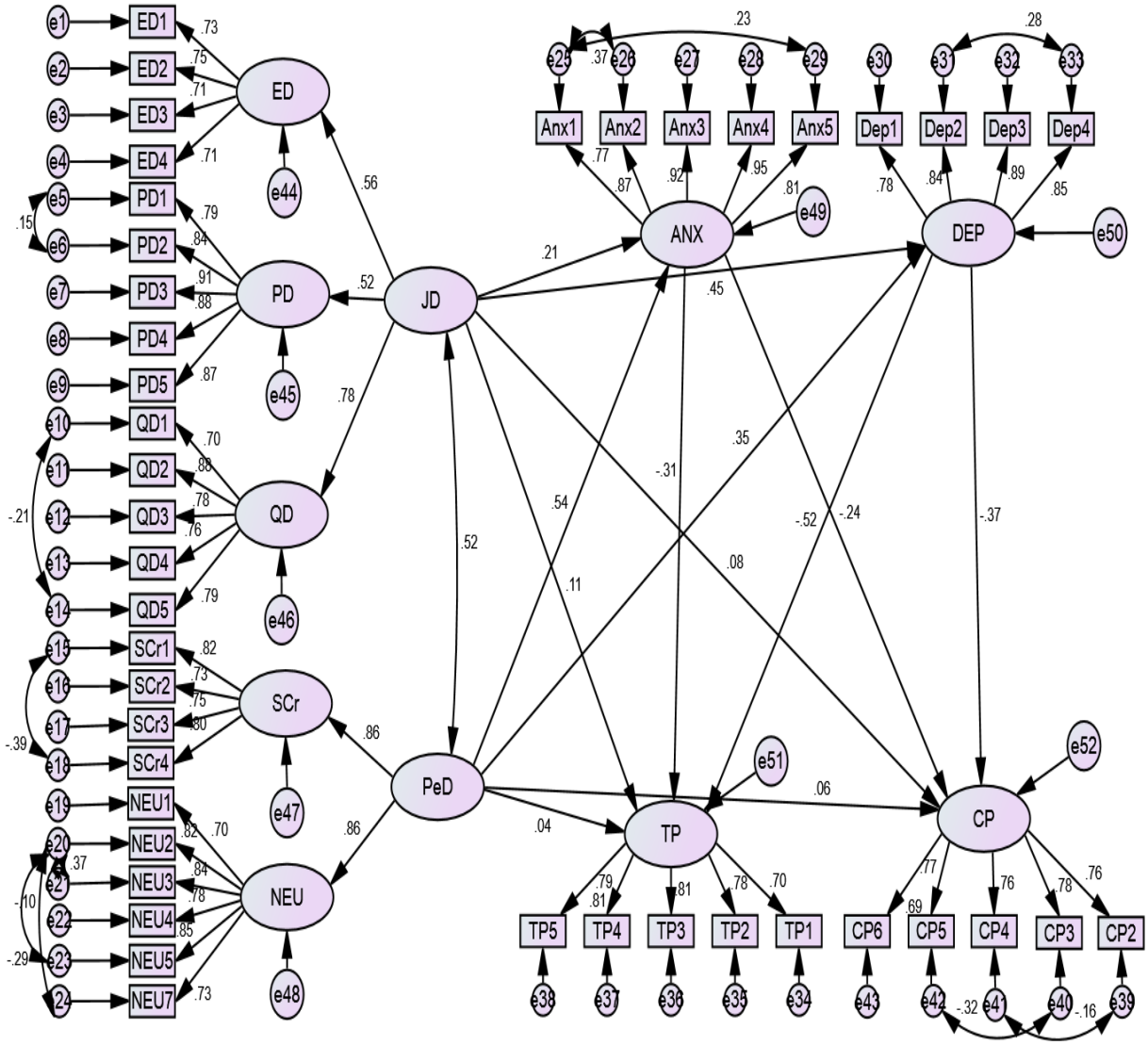


Figure 4.19: Final Hypothesized Structural Model

x^2=1094798., df=831, x^2/df=1.317, p=0.000, GFI=0.885, AGFI=0.869, NFI=0.907, TLI=0.974, CFI=0.976, RMSEA= 0.029, PCLOSE=1.000

The results of this re-specified structural model however suggested no significant changes in hypothesis testing results as the results are similar to what have been obtained for initial structural model. Eight out of twelve causal paths are significant and thus their respective hypothesis is accepted and the same four causal paths (H2a, H2b, H4a, H4b) are still

insignificant like before and are displayed bold in the Table 4.18. These insignificant paths are indicative of indirect paths as supported by theory and as hypothesized in the present study. It is important to note here that "indirect effects are always part of mediation, but they are not synonymous" (Kline, 2016, p. 134) and thus it is imperative that these paths must further be investigated to find out if they are the cause of the reduced effect of certain relationship and qualify for mediation because "without evidence for change, the only effects that could be supported are indirect effects, not mediation. In other words, mediation always involves indirect effects, but not all indirect effects automatically signal mediation" (Kline, 2016, p. 134). Next section is dedicated to discuss the structural models associated with mediation analysis.

Table 4.18: Results of Hypotheses Testing (Final Hypothesized Model)

Hypotheses	**Path**	***B***	**C.R.**	***P***	**Supported**
H1a	JD-ANX	.214	3.046	.002**	Yes
H1b	JD-DEP	.447	5.103	***	Yes
H2a	JD-TP	.114	1.291	.197	No
H2b	JD-CP	.076	.791	.429	No
H3a	PeD-ANX	.537	7.387	***	Yes
H3b	PeD-DEP	.351	4.985	***	Yes
H4a	PeD-TP	.038	.459	.646	No
H12	PeD-CP	.061	.675	.500	No
H5a	ANX-TP	-.314	-4.387	***	Yes
H5b	ANX-CP	-.239	-3.105	.002**	Yes
H5c	DEP-TP	-.524	-6.213	***	Yes
H5d	DEP-CP	-.375	-4.301	***	Yes

***p<.001, **p<.01 *p<.05

4.11.3 Mediation Analysis

After assessing the structural model for the study, this section sheds light on the process of mediation and why it is necessary to test mediation in complex models. In their seminal work on mediation, Baron and Kenny (1986) defined mediation process as a statistical process in which "a variable has mediated the relationship between two other variables when the basic relationship is reduced when the mediating variable is included in the regression equation" (as cited in Jose, 2013, p. 49). Similarly, the mediation process was defined as "the effect of some independent variable X on outcome variable Y is mediated by M if M is causally situated between X and Y such that changes in X cause changes in M, which in turn cause changes in Y" (Hayes, Preacher & Myers, 2011 p. 435). It is observed that "mediation refers to a causal pathway through which effects are conducted from a source through a conduit—the mediator—to the final outcome" Kline (2016, p. 134).

It is important to test mediation in complex models because more often than not, the mechanism through which a variable affects the other is explained by a third variable i.e. mediator (Little et al., 2007). There are numerous ways to test the statistical mediation but "the most widely used method to assess mediation was described by David Kenny and colleagues (Judd & Kenny, 1981b; Baron & Kenny, 1986; Kenny, Kashy, & Bolger, 1998). The Baron and Kenny (1986) article is one of the most cited articles in the social sciences, largely because of its guidance regarding testing for mediation" (MacKinnon, 2008, p. 68). The causal steps strategy proposed by Baron and Kenny (1986) contained three conditions which have to be met to prove that there is an existence of mediated effects:

1. There must be significant relationship between independent variable (X) and mediating variable (M) (Path a's significance)

2. There must be significant relationship between mediating variable (M) and dependent variable (Y) (Path b's significance)
3. There must be a decrease in the extent of the direct relationship between the independent variable (X) and dependent variable (Y) when the mediating variable (M) is introduced in the model (Path c's value decreased).

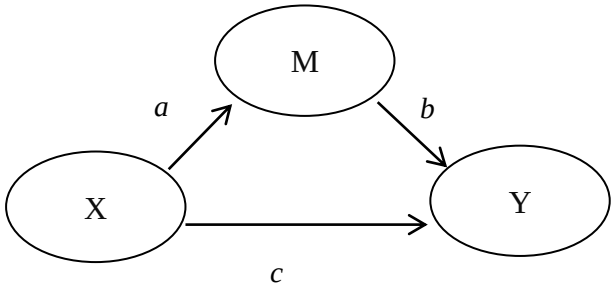


Figure 4.20: Simple Mediation Model

Although this causal steps approach by Baron and Kenny (1986) is widely popular and most used method for estimating mediation effects but it is only effective when there is large sample size involved (Preacher & Hayes, 2008). Besides the issue of sample size, this approach is now considered flawed because of a couple of problems. Firstly, it does not allow to measure the significance of indirect path between independent and dependent variable (Preacher & Hayes, 2004). Secondly, the causal steps approach does not account for some important effects such as that of type II errors (Mackinnon, Fairchild & Fritz, 2007). To address these problems, it was proposed to analyze the indirect effects (Preacher & Hayes, 2004; Muthen, 2011). Kenny (2016) noted that "in contemporary mediational analyses, the indirect effect or ab is the measure of the amount of mediation".

The two main approaches to assess the indirect effect are that of (i) taking the difference of the two regression weights (Judd & Kenny, 1981) and (ii) multiplication of regression weights

of both regression equations (Sobel, 1982). Both of these approaches offer almost the same results (Mackinnon et al., 2002). The Sobel test is however very conservative (MacKinnon, Warsi, & Dwyer, 1995) and thus has a very low power. It was argued that "the main reason for the test being conservative is that the sampling distribution of ab is highly skewed. If ab is positive, there is positive skew with many small estimates of ab and few very large ones. Because the Sobel test uses a normal approximation which presumes a symmetric distribution, it falsely presumes symmetry which leads to a conservative test" (Kenny, 2016).

Bootstrapping is another method which is becoming increasingly popular to calculate the indirect effects (Bollen & Stine, 1990; Shrout & Bolger, 2002). "Bootstrapping is a non-parametric method based on resampling with replacement which is done many times, e.g., 5000 times. From each of these samples the indirect effect is computed and a sampling distribution can be empirically generated. Because the mean of the bootstrapped distribution will not exactly equal the indirect effect a correction for bias can be made. With the distribution, a confidence interval, a p value, or a standard error can be determined. Very typically a confidence interval is computed and it is checked to determine if zero is in the interval. If zero is not in the interval, then the researcher can be confident that the indirect effect is different from zero. Also a Z value can be determined by dividing the bootstrapped estimate by its standard error, but bootstrapped standard errors suffer the same problem as the Sobel standard errors and are not recommended. (Bootstrapping does not require the assumption that a and b are uncorrelated)" (Kenny, 2016). The mediation by bootstrapping can be done in SPSS and SAS PROCESS Macros (Hayes, 2012; Hayes, 2013) or in any SEM program like Amos graphics (Arbuckle, 2015).

The use of structural equation modeling to test the indirect effects has been widely advocated and broadly adopted strategy to test for mediation effects (James, Mulaik & Brett, 2006; Preacher, Zhang, & Zyphur, 2011; Gunzler et al., 2013; Leth-Steensen & Gallitto, 2016). The use of structural equation modeling to conduct mediation analysis is preferred over the use of several multiple regression equations because "there are considerable advantages to estimate the mediation using a Structural Equation Modeling (SEM) program, such as Amos or Mplus. First, all the coefficients are estimated in a single run. Second, most SEM programs provide estimates of indirect effects and bootstrapping. Third, SEM with FIML estimation can allow for a more complex model of missing data. Fourth, it is relatively easy to conduct sensitivity analyses with an SEM program" (Kenny, 2016). Furthermore, SEM has been considered a very good tool to analyze mediation effects in complex models because of its ability to test both direct and indirect effects (Little et al., 2007). For these reasons, the indirect effects in this study will be computed via bootstrapping in structural equation modeling by using Amos graphics.

As the paths from independent variable to mediator, mediator to dependent variable and from independent variable to dependent variable is represented as path a, b and c in Figure 4.20. SEM analysis convert these three paths into two distinct categories of direct and indirect paths where independent path is the combination of two paths (a) and (b) and bootstrapping depicts the significance of this indirect path (MacKinnon, Krull, & Lockwood, 2000; Muthén, 2011). These paths and the values they contain also reveal the type of mediation effects as shown in Table 4.19.

Table 4.19: Type of Mediations

Types	X-M(a)	M-Y(b)	X-Y(c)
Full Mediation	Sig.	Sig.	Insig.
Partial Mediation	Sig.	Sig.	Sig.
No Mediation	Sig. /Insig.	Insig.	Sig. /Insig.
Inconsistent Mediation	Sig.	Sig.	Sig. (Different Sign)

Where X-M is the direct path between independent variable (X) and mediating variable (M), M-Y is the direct path between mediating variable (M) and dependent variable (Y), X-Y is the direct path between independent variable (X) and dependent variable (Y). Also, Sig. represents 'significant' and Insig. means 'insignificant' here.

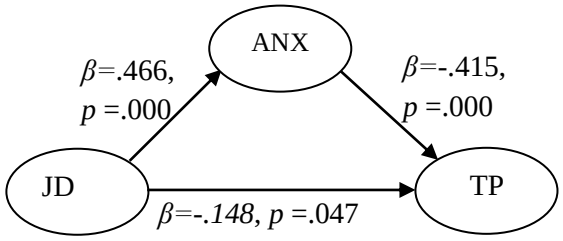
The state of full mediation occurs when M explains all the variance between the relationship of X and Y and thus making this path insignificant. On the other hand, partial mediation occurs when all three paths in the model are significant but the inclusion of M significantly reduces the strength of the relationship between X and Y. No mediation is the situation when the association of X and Y is not at all explained by the inclusion of mediating variable M in the model (Mackinnon et al., 2002). Inconsistent mediation occurs when the inclusion of mediator in the model results in the difference of sign between the relationship of X and Y (James et al., 2006). There were total 8 mediations to be tested in present study and results of this hypotheses testing is displayed in Table 4.20.

Table 4.20: Results of Hypothesized Mediation Effects

Hypotheses	Paths	Result
H6a	JD-ANX-TP	Partial Mediation
H6b	JD-ANX-CP	Full Mediation
H6c	JD-DEP-TP	Full Mediation
H6d	JD-DEP-CP	Full Mediation
H7a	PeD-ANX-TP	Partial Mediation
H7b	PeD-ANX-CP	Full Mediation
H7c	PeD-DEP-TP	Full Mediation
H7d	PeD-DEP-CP	Full Mediation

4.11.3.1 Assessment of Mediation (JD-ANX-TP)

The results obtained from the assessment of mediation of anxiety in the relationship of job demands and task performance are displayed in Figure 4.21 and Table 4.21. These results indicate that the model fitness indices (x2= 254.809, df= 242, x2/df= 1.053, p=.273, GFI=.948, AGFI=.936, NFI=.960, TLI=.998, CFI=.998, RMSEA=.012, PCLOSE= 1.000) show a good model fit and R square for both anxiety and task performance was considered adequate to proceed with reporting the local test of significance in case of indirect effect which is the combination of path a and path b of the mediation model. It is quite evident from the analysis that the path *a* (the relationship of job demands and anxiety) and path *b* (the relationship of anxiety and task performance) are significant (*β=.466*, *p*=.000<.001; *β=-.415*, *p*=.000<.001 respectively). Furthermore, the direct path between job demands and task performance is also significant (*β= -.148*, *p*=.047<.05). Similarly, bootstrapping was conducted in Amos graphics by using 2000 samples with 0.90 confidence interval and results of the model show that indirect effect of job demands on task performance is significant (*β=.-.194*, *p*=.000<.001) and thus all significant paths show that partial mediation of anxiety exists between the relationship of job demands and task performance.



	Model Fitness Indices
	x^2= 254.809, df= 242, x^2/df= 1.053, *p*=.273, GFI=.948, AGFI=.936, NFI=.960, TLI=.998, CFI=.998, RMSEA=.012, PCLOSE= 1.000

Figure 4.21: Mediation Analysis (JD-ANX-TP)

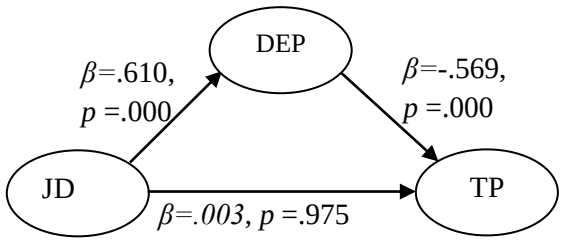
Table 4.21: Path Analysis and Bootstrapping results of JD-ANX-TP

Path	Std. Reg.	CR	*P*	Effects/Result		
JD-ANX (*a*)	.466	5.793	.000	**Direct**	**Indirect**	**Result**
ANX-TP (*b*)	-.415	-6.211	.000	-.148*	-.194**	PM
JD-TP (*c*)	-.148	-1.985	.047			

Where PM= Partial Mediation **=p<.001, *=p<.05

4.11.3.2 Assessment of Mediation (JD-DEP-TP)

The next hypothesized mediation model having depression as a mediator in the relationship between job demands and task performance was tested for model fitness and indirect effects using structural equation modeling. The analysis revealed that the model fitness estimates (x^2= 260.125, df= 221, x^2/df= 1.177, p=.037, GFI=.946, AGFI=.932, NFI=.954, TLI=.992, CFI=.993, RMSEA=.022, PCLOSE= 1.000) are all indicative of good fit and R square for both depression and task performance was adequate so both of these global fit tests met the standards and thus the local fit of significance of indirect effects was tested using the bootstrapping sample of 2000 by setting up the confidence interval to 0.90. It can be seen from Figure 4.22 and Table 4.22 that path a (the relationship between job demands and depression) and path b (relationship between depression and task performance) are significant (*β=.610*, *p*=.000<.001; *β=-.569*, *p*=.000<.001 respectively) while the path c (relationship between job demands and task performance) is highly insignificant (*β=.003*, *p*=.975>.50). The results of bootstrapping also indicated that the indirect effect between job demands and task performance is significant (*β*=-.347, *p*=.000<.001) and is quite stronger than the direct effect suggesting that there is a full mediation of depression between the relationship of job demands and task performance or in other words, the relationship between job demands and task performance is fully explained by depression.



Model Fitness Indices
x^2= 260.125, df= 221, x^2/df= 1.177, p=.037, GFI=.946, AGFI=.932, NFI=.954, TLI=.992, CFI=.993, RMSEA=.022, PCLOSE= 1.000

Figure 4.22: Mediation Analysis (JD-DEP-TP)

Table 4.22: Path Analysis and Bootstrapping results of JD-DEP-TP

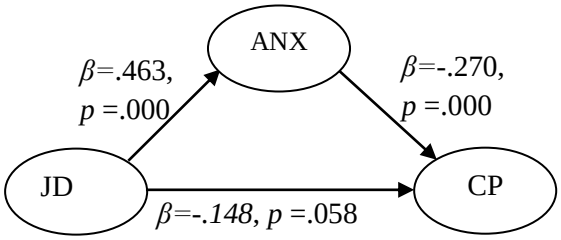
Path	**Std. Reg.**	**CR**	***P***	**Effects/Result**		
JD-DEP (*a*)	.610	6.634	.000	Direct	Indirect	Result
DEP-TP (*b*)	-.569	-7.029	.000	.003	-.347**	FM
JD-TP (*c*)	.003	.032	.975			

Where FM= Full Mediation **=p<.001, *=p<.05

4.11.3.3 Assessment of Mediation (JD-ANX-CP)

Mediation for anxiety was also tested in the relationship between job demands and contextual performance to calculate the indirect effects and for model fitness. The analysis revealed that all model fit estimates (x2= 280.129, df= 240, x2/df= 1.167, p=.038, GFI=.944, AGFI=.930, NFI=.955, TLI=.992, CFI=.993, RMSEA=.021, PCLOSE= 1.000) meet the standards and moreover the R square value of both anxiety and contextual performance was adequate enough. The results of this analysis are presented in Figure 4.23 and Table 4.23. It can be observed that path a (the relationship between job demands and anxiety) and path b (the relationship between anxiety and contextual performance) are both significant with values (*β=.463*, *p*=.000<.001; *β=-.270*, *p*=.000<.001 respectively) while the path c (the relationship between job demands and contextual performance is slightly out of the significance range

with value (*β*=-*.148*, *p*=.058>.05) and thus considered as insignificant. Moreover the results from bootstrapping revealed that the indirect relationship between job demands and contextual performance is clearly significant (*β*=-*.125*, *p*=.000<.001) and this effect is stronger than the direct effect so it can be concluded that anxiety fully explains the relationship between job demands and contextual performance and that this is a case of full mediation.



Model Fitness Indices

x^2= 280.129, df= 240, x^2/df= 1.167, *p*=.038, GFI=.944, AGFI=.930, NFI=.955, TLI=.992, CFI=.993, RMSEA=.021, PCLOSE= 1.000

Figure 4.23: Mediation Analysis (JD-ANX-CP)

Table 4.23: Path Analysis and Bootstrapping results of JD-ANX-CP

Path	**Std. Reg.**	**CR**	***P***	**Effects/Result**		
JD-ANX (*a*)	.463	5.800	.000	**Direct**	**Indirect**	**Result**
ANX-CP (*b*)	-.270	-4.081	.000	-.148	-.125**	FM
JD-CP (*c*)	-.148	-1.892	.058			

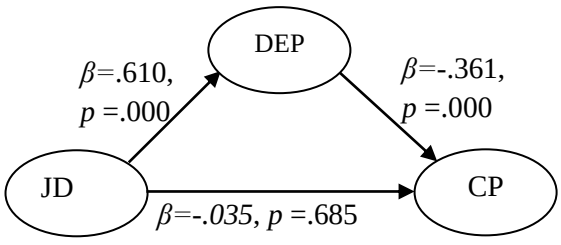
Where FM= Full Mediation **=p<.001, *=p<.05

4.11.3.4 Assessment of Mediation (JD-DEP-CP)

The next analysis of mediation was for depression mediating the negative relationship between job demands and contextual performance. The model was set up in Amos and tested for its model fitness and indirect effects. The results revealed that other than chi-square value being significant all other model fit indices (x2= 291.438, df= 219, x2/df= 1.331, p=.001, GFI=.939, AGFI=.923, NFI=.947, TLI=.984, CFI=.986, RMSEA=.029, PCLOSE= 1.000)

were indicative of an adequate fit. We noted in previous sections that the value of chi-square is sensitive to large samples and it is very difficult to get an insignificant chi-square value in complex models with large samples (Hair et al., 2010; Byrne, 2016). R square values for both depression and contextual performance were reasonable and thus global test has been cleared and now local test will be assessed for significance of indirect effects. The results of this analysis can be found in Figure 4.24 and Table 4.24.

From this figure and table, it is evident that the path a (the relationship between job demands and depression) and path b (the relationship between depression and contextual performance) are both significant (*β=.610*, *p*=.000<.001; *β=-.361*, *p*=.000<.001 respectively) while the path c (the relationship between job demands and contextual performance) is highly insignificant (*β=-.035*, *p*=.685>.05). Moreover, the results of bootstrapping indicate that the indirect effect between job demands and contextual performance is very significant (*β=-.220*, *p*=.000<.001) and is quite stronger than that of direct effect. Thus it can be concluded that depression fully mediates the negative relationship between job demands and contextual performance.



Model Fitness Indices
x^2= 291.438, df= 219, x^2/df= 1.331, *p*=.001, GFI=.939, AGFI=.923, NFI=.947, TLI=.984, CFI=.986, RMSEA=.029, PCLOSE= 1.000

Figure 4.24: Mediation Analysis (JD-DEP-CP)

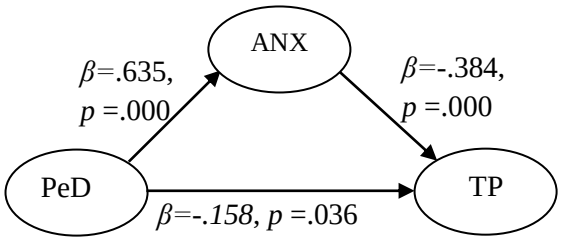
Table 4.24: Path Analysis and Bootstrapping results of JD-DEP-CP

Path	Std. Reg.	CR	*P*	Effects/Result		
JD-DEP (*a*)	.610	6.648	.000	**Direct**	**Indirect**	**Result**
DEP-CP (*b*)	-.361	-4.481	.000	-.035	-.220**	FM
JD-CP (*c*)	-.035	-.405	.685			

Where FM= Full Mediation **=p<.001, *=p<.05

4.11.3.5 Assessment of Mediation (PeD-ANX-TP)

It was hypothesized that anxiety mediates the negative relationship between personal demands and task performance. To test this hypothesis, the model was set up in Amos and tested for its fitness and indirect effects using the statistical technique of bootstrapping in SEM. The model fitness indices (x2= 237.112, df= 159, x2/df= 1.491, p=.000, GFI=.942, AGFI=.923, NFI=.957, TLI=.983, CFI=.985, RMSEA=.036, PCLOSE= .995) revealed that they are adequate for the model to be called a good fit. R square for both anxiety and task performance was adequate. The results of this analysis are reported in Figure 4.25 and Table 4.25. It is apparent that path a (relationship between personal demands and anxiety) and path b (relationship between anxiety and task performance) is significant (β=*.635*, *p*=.000<.001; β=*-.384*, *p*=.000<.001 respectively). Moreover, in this case, the path c (relationship between personal demands and task performance) is also significant (β=-.158, *p*=.036<.05). Furthermore, the results of bootstrapping showed that the indirect effect between personal demands is significant (β=-.244, *p*=.000<.001). So it can be concluded that while personal demands and task performance has a direct relationship but anxiety explains this relationship partially and thus anxiety partially mediates the negative relationship between personal demands and task performance.



Model Fitness Indices
x^2= 237.112, df= 159, x^2/df= 1.491, p=.000, GFI=.942, AGFI=.923, NFI=.957, TLI=.983, CFI=.985, RMSEA=.036, PCLOSE= .995

)

Figure 4.25: Mediation Analysis (PeD-ANX-TP)

Table 4.25: Path Analysis and Bootstrapping results of PeD-ANX-TP

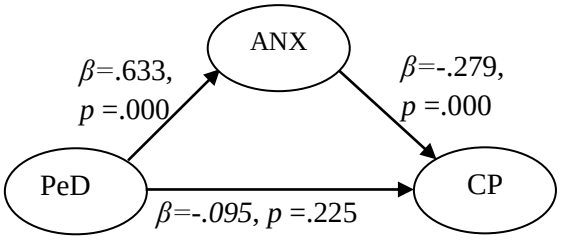
Path	**Std. Reg.**	**CR**	***P***	**Effects/Result**		
JD-ANX (*a*)	.635	9.537	.000	**Direct**	**Indirect**	**Result**
ANX-TP (*b*)	-.384	-5.181	.000	-.158*	-.244**	PM
PeD-TP (*c*)	-.158	-2.102	.036			

Where PM= Partial Mediation **=p<.001, *=p<.05

4.11.3.6 Assessment of Mediation (PeD-ANX-CP)

The mediation of anxiety is also tested in the relationship of personal demands and contextual performance. The same procedure has also been applied for this analysis and model was tested for its fitness and significance of indirect effects. The model fit estimates (x2= 262.318, df= 157, x2/df= 1.671, p=.000, GFI=.937, AGFI=.915, NFI=.951, TLI=.975, CFI=.980, RMSEA=.042, PCLOSE= .934) are all above the minimum benchmark values except for the significance of chi-square value the reason for which is the presence of large sample size in present study (Byrne, 2016). R square for both anxiety and contextual performance was satisfactory for further analysis. The results of this mediation analysis are shown in Figure 4.26 and Table 4.26. It can be observed that both path a (relationship between personal demands and anxiety) and path b (relationship between anxiety and contextual performance) are significant (*β=.633*, *p*=.000<.001; *β=-.279*, *p*=.000<.001 respectively) but path c

(relationship between personal demands and contextual performance is insignificant (*β*=*-.095*, *p*=.225>.05). Moreover, the result of bootstrapping indicated that the indirect effect between personal demands and contextual performance is significant (*β*=*-.176*, *p*=.003<.05) and stronger from that of direct effect and hence it can be concluded that the relationship between personal demands and contextual performance is fully mediated by anxiety.



Model Fitness Indices

x^2= 262.318, df= 157, x^2/df= 1.671, *p*=.000, GFI=.937, AGFI=.915, NFI=.951, TLI=.975, CFI=.980, RMSEA=.042, PCLOSE= .934

Figure 4.26: Mediation Analysis (PeD-ANX-CP)

Table 4.26: Path Analysis and Bootstrapping results of PeD-ANX-CP

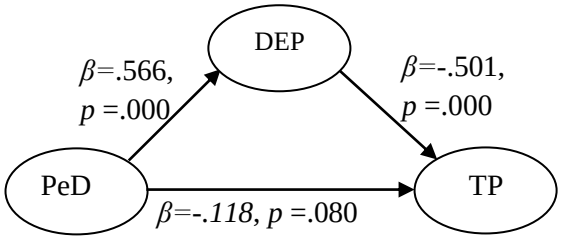
Path	**Std. Reg.**	**CR**	***P***	**Effects/Result**		
PeD-ANX (*a*)	.633	9.519	.000	**Direct**	**Indirect**	**Result**
ANX-CP (*b*)	-.279	-3.686	.000	-.095	-.176*	FM
PeD-CP (*c*)	-.095	-1.213	.225			

Where FM= Full Mediation **=p<.001, *=p<.05

4.11.3.7 Assessment of Mediation (PeD-DEP-TP)

The hypothesized mediation model of PeD-DEP-TP has been tested for model fitness and indirect effects via bootstrapping in Amos graphics. The result of this mediation analysis shows that the model fitness estimates (x2= 210.629, df= 142, x2/df= 1.483, p=.000, GFI=.945, AGFI=.927, NFI=.956, TLI=.982, CFI=.985, RMSEA=.036, PCLOSE= .993) are all meeting the standards except for significance of chi-square value due to large sample size

in present study (Byrne, 2016; Hair et al., 2010). R square of depression and task performance was inspected and found adequate to proceed for further analysis. The results of this mediation analysis are displayed in Figure 4.27 and Table 4.27. The results indicate that path a (relationship between personal demands and depression) and path b (relationship between depression and task performance) is significant with values (*β=.566, p*=.000<.001; *β=-.501, p*=.000<.001 respectively) while path c (relationship between personal demands and task performance) is not significant (*β=-.118, p*=.080>.05). The results of bootstrapping analysis revealed that the standardized indirect effect of personal demands on task performance is also significant (*β=-.283, p*=.000<.001) and stronger than that of direct effect between the two variables suggesting that depression fully mediates the negative relationship between personal demands and task performance.



Model Fitness Indices

x^2= 210.629, df= 142, x^2/df= 1.483, *p*=.000, GFI=.945, AGFI=.927, NFI=.956, TLI=.982, CFI=.985, RMSEA=.036, PCLOSE= .993

Figure 4.27: Mediation Analysis (PeD-DEP-TP)

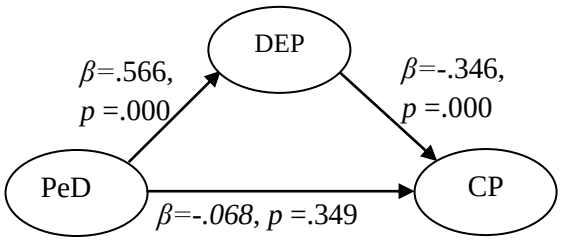
Table 4.27: Path Analysis and Bootstrapping results of PeD-DEP-TP

Path	**Std. Reg.**	**CR**	***P***	**Effects/Result**		
PeD-DEP (*a*)	.566	8.321	.000	**Direct**	**Indirect**	**Result**
DEP-TP (*b*)	-.501	-6.990	.000	-.118	-.283**	FM
PeD-TP (*c*)	-.118	-1.751	.080			

Where FM= Full Mediation **=p<.001, *=p<.05

4.11.3.8 Assessment of Mediation (PeD-DEP-CP)

It was also hypothesized that depression mediates the negative relationship between personal demands and contextual performance. To test this hypothesis, same procedure of setting up a mediation model in Amos graphics was carried out and the model was tested for its fitness and for any possible indirect effects suggesting the existence of mediation in this model. The results indicated that the model fit indices (x2= 235.245, df= 140, x2/df= 1.680, p=.000, GFI=.939, AGFI=.917, NFI=.948, TLI=.973, CFI=.978, RMSEA=.042, PCLOSE= .914) have shown an adequate fit. R square for both depression and contextual performance was adequate to proceed towards the local test of significance of indirect effect. The results of this mediation analysis are presented in Figure 4.28 and Table 4.28. It is evident from the results that path a (relationship between personal demands and depression) and path b (relationship between depression and contextual performance) are both significant (β=*.566*, *p*=.000<.001; β=*-.346*, *p*=.000<.001 respectively) but path c (relationship between personal demands and contextual performance) is highly insignificant (β=*-.068*, *p*=.349>.05). The results obtained from bootstrapping analysis has shown that the indirect effect of personal demands on contextual performance is also significant (β=*-.195*, *p*=.001=.001) and stronger than the direct effect suggesting that depression fully explains the relationship between personal demands and contextual performance and thus it can be concluded that full mediation exists in this model.



Model Fitness Indices
x^2= 235.245, df= 140, x^2/df= 1.680, p=.000, GFI=.939, AGFI=.917, NFI=.948, TLI=.973, CFI=.978, RMSEA=.042, PCLOSE= .914

Figure 4.28: Mediation Analysis (PeD-DEP-CP)

Table 4.28: Path Analysis and Bootstrapping results of PeD-DEP-CP

Path	**Std. Reg.**	**CR**	***P***	**Effects/Result**		
PeD-DEP (*a*)	.566	8.292	.000	**Direct**	**Indirect**	**Result**
DEP-CP (*b*)	-.346	-4.771	.000	-.068	-.195**	FM
PeD-CP (*c*)	-.068	-0.935	.349			

Where FM= Full Mediation **=p<.001, *=p<.05

4.11.4 Moderation Analysis

It is noted that "in general terms, a moderator is any variable that affects the association between two or more other variables; moderation is the effect the moderator has on this association". Moreover, "life is rarely straightforward" and "management research, like many other disciplines, is replete with theories suggesting that the relationship between two variables is dependent on a third variable" (Dawson, 2014, p.1). Pointing out the complexity among relationships between different variables and possible existence of indirect effects, Little et al. (2007, p. 270) also argued that "researchers must often consider that an observed relationship may be part of a more complex, qualified system. These relationships are described using concepts such as interactions, subgroup differences, and shocks; all of which share the concept of moderation. Generally speaking, a mediator can be thought of as the carrier or transporter of information along the causal chain of effects. A moderator, on the

other hand, is the changer of a relationship in a system." The moderator variable can change or affect the relationships in two possible ways; i) it may further strengthen the relationship i.e. boost effect or ii) it may dampens the relationship i.e. buffer effect. Thus, it is both pertinent and critical to test the moderating effects given a model is complex because it may change the relationship between any two variables.

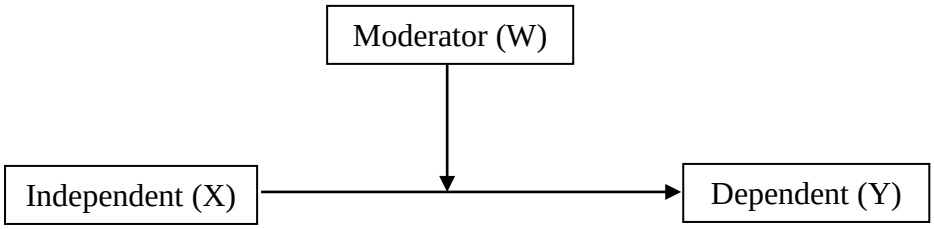


Figure 4.29: Simple Moderation Model

As with mediation or any other statistical test, there are numerous ways to test moderating effects such as Ordinary Least Squares Regression (OLS), the use of Logistic Regression (LR), Poisson Regression (PoR), Moderated Multiple Regression (MMR) and Structural Equation Modeling (SEM). Among these approaches, SEM has the ability to better handle complex models involving both mediation and moderation and should be preferred over traditional regression based approaches involving multiple regression equations (Little et al., 2007). They further noted that "the basic tests of mediation and moderation in SEM are handled in a way that provides strong empirical evidence for or against a mediation or moderation hypothesis, particularly because effects are corrected for measurement error. With the added ability to directly estimate indirect relationships (as opposed to inferring them from a series of sequentially estimated regressions) and make direct statistical tests of the significance of any of the pathways modeled, SEM approaches to testing such complex hypotheses are very powerful" (Little et al., 2007, p. 226).

Moreover, as structural equation modeling (SEM) has been used to analyze the data and testing for other hypotheses in present study, so hypotheses involving moderation have also been analyzed using SEM. It should be noted however that "estimation of interactive effects of continuous observed variables in SEM uses the same method as in moderated multiple regression. It involves product terms that represent interaction effects. A product term is literally the product of the scores from two different variables, such as XW = X × W" (Kline, 2016, p. 424). The significant value of interaction term (XW) indicates that the relationship between independent variable (X) and dependent variable (Y) depends on the level of moderator (W) and whether it boost or buffer the relationship between two variables depends on the positive or negative sign associated with coefficient of interaction term where a positive sign (if significant) indicates boosting effect whereas the negative sign (if significant) is indicative of a buffering effect (Dawson, 2014).

It was further observed that, positive or negative, "the size and precise nature of this effect is not easy to divine from examination of the coefficients alone, and becomes even more so when one or more of the coefficients are negative, or the standard deviations of X and Z are very different. To overcome this and enable easier interpretation, we usually plot the effect so we can interpret it visually." (Dawson, 2014, p. 3). There were two hypotheses involving two moderators for the same relationship. It was hypothesized that self-compassion would buffer the relationship between job demands and job stress such that when self-compassion would be higher, the relationship between job demands and job stress weakens. The other hypothesis was to test the moderating effect of social support in the same relationship of job demands and job stress such that higher level of social support would weaken the positive relationship between job demands and job stress. It is important to note here that the composites of job

demands and job stress have been used as observed variable in order to test interaction based moderation. Both of these moderated effects are discussed next.

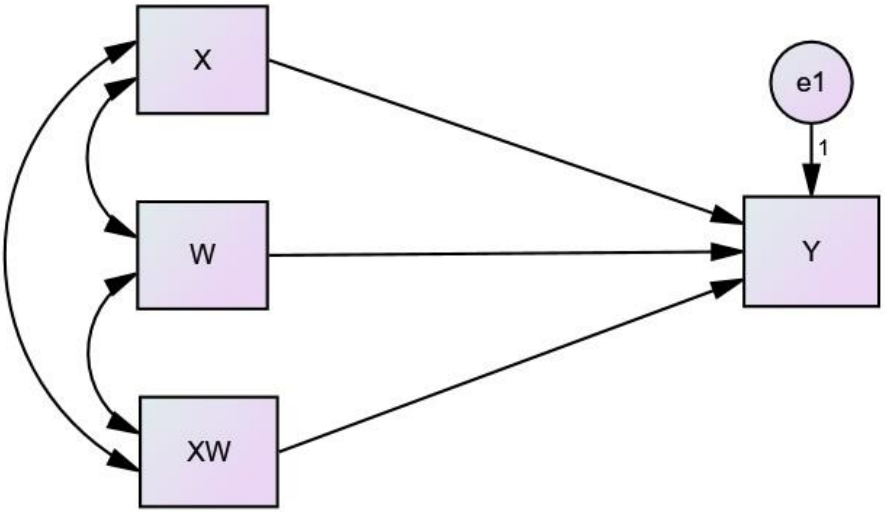


Figure 4.30: Path analytic representation of an interactive effect in AMOS

4.11.4.1 Moderating Effect of Social Support in JD-JS Relationship

The first hypothesis of moderation posited that social support could moderate the relationship of job demands and job stress. So the interaction based moderation model was set up in Amos graphics which contained the independent variable of job demands and moderator variable of social support along with the product term of independent variable and moderator (JD_x_SS) and dependent variable of job stress. The independent and moderating variable was standardized and then the product term was computed in SPSS program. The model was estimated for fitness and moderation effects. The model fitness estimates indicated that the model was an adequate fit and R square for job stress was also satisfactory. The analysis revealed that only one path from job demands and job stress was significant but the other two paths from moderator to dependent variable i.e. social support and job stress and the path

between the interaction term and dependent variable i.e. JD_x_SS and job stress is also insignificant. The insignificance of the product term (p=.334>0.05) rejects the hypothesis and the notion that social support can successfully moderate the relationship of job demands and job stress. The results of this moderation analysis are displayed in Table 4.29. This effect is not plotted because no moderating effect was found.

Table 4.29: Result of path analysis (moderation of social support)

Relation	Path	Reg.	C.R.	Result
β1	JD-JS	.452**	9.374	
β2	SS-JS	-.045	-1.933	No Moderation
β3	(JD×SS)-JS	.026	.947	

**p<.001 , *p<.05

4.11.4.2 Moderating Effect of Self-Compassion in JD-JS Relationship

The hypothesized moderating effect of continuous variable of self-compassion in the relationship of job demands and job stress was evaluated in Amos graphics. More specifically, it was hypothesized that high self-compassion would weaken the positive relationship between job demands and job stress. The model which contained the variables of job demands (JD), self-compassion (SC), job stress (JS) and an interaction term which is literally the product term of job demands and self-compassion (JD_x_SC) has been set up and tested for its fitness and for finding out significant moderation/interaction effect. Before this interaction was computed in SPSS, the variables of job demands and self-compassion were standardized. The model fitness estimates indicated a good fit and moreover the R square value for the observed variable of job stress which is a composite of anxiety and depression was found to be adequate. Upon inspection, it was found that all three paths of JD-JS, SC-JS

and from interaction term i.e. JD_x_SC to JS were significant. The significance of path between JD_x_SC and JS indicates that self-compassion is a moderator in the relationship between job demands and job stress and negative sign associated with the coefficient of interaction term revealed that self-compassion dampens the positive relationship between job demands and job stress. Although the effect is not that great but it is still significant (p=0.003<0.50). The results of this analysis are displayed in Table 4.30 and Figure 4.31.

Table 4.30: Path Analysis results of SC moderation

Relation	Path	Reg.	C.R.	Result
β1	JD-JS	.334**	7.185	Partial Moderation
β2	SC-JS	-.192**	-8.422	
β3	(JD×SC)-JS	-.081*	-2.944	

**p<.001 , *p<.05

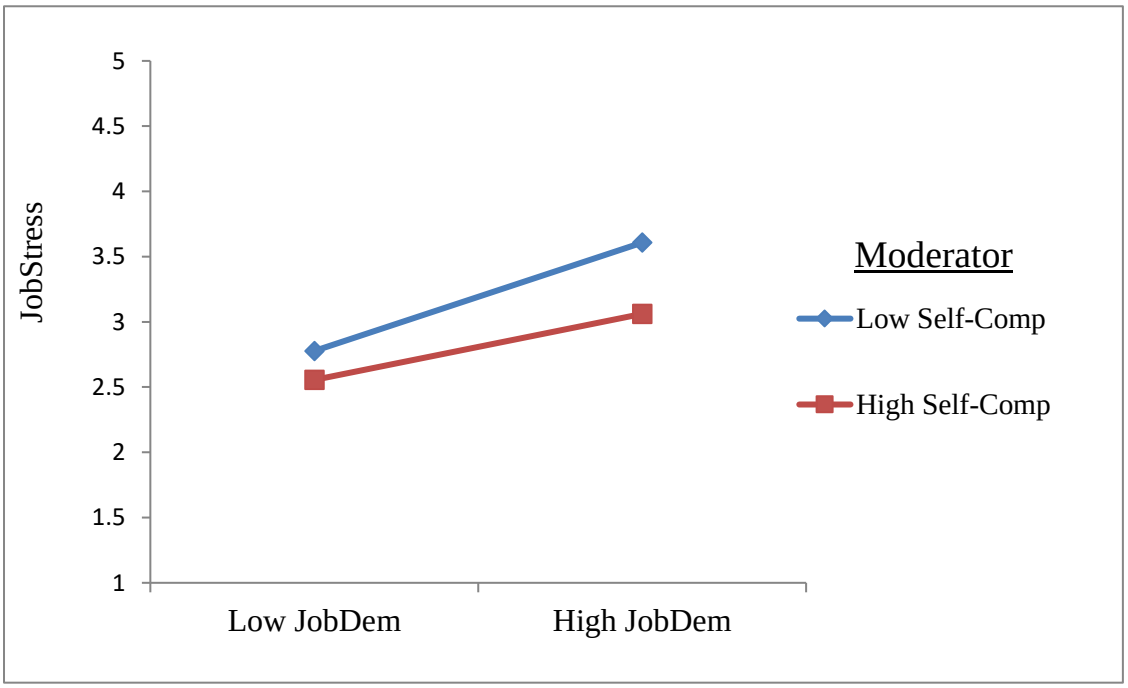


Figure 4.31: Plotting the interaction of self-compassion in JD-JS relationship

4.12 Results of Hypotheses Testing

There are 22 hypothesized relationships which were tested and analyzed in present study. 12 hypotheses out of these 22 were used to measure the direct relationships between the constructs while 8 indirect effects were hypothesized and tested as mediation using bootstrapping technique in SEM. Moderation of both social support and self-compassion was tested using 2 hypotheses. Results of all the hypothesized relationships for present study are displayed in Table 4.31.

Table 4.31: Results of Hypotheses Testing

Hypotheses	Hypothesized Path	Supported	Rejected
H1a	JD-ANX	✓	
H1b	JD-DEP	✓	
H2a	JD-TP		✓
H2b	JD-CP		✓
H3a	PeD-ANX	✓	
H3b	PeD-DEP	✓	
H4a	PeD-TP		✓
H4b	PeD-CP		✓
H5a	ANX-TP	✓	
H5b	ANX-CP	✓	
H5c	DEP-TP	✓	
H5d	DEP-CP	✓	
H6a	JD-ANX-TP	✓	
H6b	JD-ANX-CP	✓	
H6c	JD-DEP-TP	✓	
H6d	JD-DEP-CP	✓	
H7a	PeD-ANX-TP	✓	

Table 4.31 continued

H7b	PeD-ANX-CP	✓		
H7c	PeD-DEP-TP	✓		
H7d	PeD-DEP-CP	✓		
H8	JD-SS-JS		✓	
H9	JD-SC-JS	✓		

Where JD=Job Demands, PeD=Personal Demands, JS=Job Stress, ANX=Anxiety, DEP=Depression, SS=Social Support, SC=Self-Compassion, TP=Task performance, CP=Contextual Performance

As depicted in Table 4.31, the results of hypotheses testing show that 17 out of 22 hypotheses have been supported in present study which shows that majority of the hypothesized relations were proven in this study. Among these 17 are 8 direct relationships, 6 mediated relationships and 1 moderated relationship that was supported by the results of the study. More specifically, the hypotheses for direct relationships that were supported in present study are that of H1a, H1b, H3a, H3b, H5a, H5b, H5c, H5d. The supported hypotheses for mediated relationships are H6a, H6b, H6c, H6d, H7a, H7b, H7c, H7d. One supported hypothesis for moderation is H9. The findings of present study has rejected four hypotheses for direct relationships (H2a, H2b, H4a, H4b) and one hypothesis (H8) was rejected for moderation of social support. These findings show that in order to combat job and personal stressors, employees need job and personal resources in order to remain less stressed and perform well in their jobs.

4.13 Chapter Summary

This chapter covered all the details on the application of data analysis tools and techniques so as to eventually test the hypotheses and achieve the objectives of the research. The data was cleaned and edited prior to applying the statistical tests. Missing value analysis was performed along with identifying and treating multivariate outliers. Normality of variables was assessed

before the application of SEM. Preliminary data analysis also covered the sections on descriptive statistics, respondents' profile and correlations among variables. Structural equation modeling was applied in two stages of measurement and structural model assessments. In first stage of SEM, CFA for every scale and construct was conducted along with a pooled CFA for all the variables in the study. This was followed by estimating the analysis of reliability and validity of constructs via CFA. The details about model fitness, factor loadings, and modification indices for every model was presented with the help of tables and figures. The second stage of SEM was applied to test the hypothesized direct and indirect relationships among variables of the study by drawing structural models of direct and indirect effects. The details on interaction based moderation analysis was also covered for the two variables (social support and self-compassion). Finally the results of hypotheses testing for these direct, mediated and moderated effects were depicted so as to show if the study has met its objectives and answered the raised questions.

CHAPTER 5

DISCUSSION, RECOMMENDATIONS AND CONCLUSION

5.1 Chapter Overview

The main purpose of this chapter is to present a summary of the findings obtained after analyzing the data, discussion of those findings and to draw conclusion on the basis of these findings. More specifically, this chapter contains a detailed discussion on the findings based on the results obtained in data analysis, compare the results with previous studies based on the acceptance or rejection of hypotheses, discusses the limitations of the present study, provides recommendations for future research, describes theoretical and practical implications of the study and finally the conclusion based on the findings is presented.

5.2 Summary of the Findings

The current study has been designed to confirm the main assumptions of job demands-resources (JD-R) theory along with addition of new paths and variables that contributes in better understanding of the theory and opens up the new avenues for further research on JD-R theory. This study was specially designed in the context of nursing staff working in private hospitals of Punjab province of Pakistan. A comprehensive model involving three relevant job demands, job stress as measured by anxiety and depression and job performance operationalized as task and contextual performance has been developed. The inclusion of a new concept of personal demands as measured by neuroticism and self-criticism has made this study even more unique, novel and one of its kind. Moreover, both type of resources i.e. job and personal resources were used as moderators in the relationship between job demands and job stress so as to assess the relative importance of these resources in demanding

situations on job. Social support, in form of support from both superiors and colleagues, was used to measure job resources and a new variable, in the realm of JD-R theory, of self-compassion has been conceptualized as a personal resource in present study.

This study aimed to investigate if the newly added concept of personal demands function as a second order reflective construct and act in a similar way to the already well established concept of job demands in predicting job stress (anxiety and depression). Furthermore, one of the aims of this study was to assess if job stress in form of anxiety and depression can be used as a mediator in the relationship of both job-personal demands and job performance. To test this and other hypothesis, first a CFA was conducted for every single scale, then for every (higher order) construct and finally for whole model involving every variable before proceeding to the structural model assessment. The results of the CFA suggested that personal demands can be a second order higher construct similar to job demands because of the standardized loading estimates of both of its single order constructs are over and above the established minimum benchmark. Similarly, it was found that when tested alone, the construct of job stress and job performance can also be second order reflective constructs but when tested in the pooled CFA, they were causing troubles as a second order construct and thus for further analysis, it was deemed appropriate to test them by their first order factors. Along with unidimensionality, all the scales used were found to be reliable and assessment of validity indicated that all the variables for the study are distinct from each other.

As for structural model assessment and hypothesis testing, the direct and indirect effects were tested between various sets of variables. It was found that job demands as a higher order construct (reflecting three single order factors of quantitative, physical and emotional demands) was significantly related directly and positively with both first order factors of job

stress i.e. anxiety and depression. Similarly, personal demands as a second order construct (reflecting two single order factors of neuroticism and self-criticism) was also found to be a strong and significant predictor of both job related anxiety and depression. The relationship between personal demands and the two factors of job stress was direct, significant and positive. Furthermore, it was found that both the factors of job stress i.e. anxiety and depression are directly, significantly and negatively related to both task and contextual performance as hypothesized. However, there was no direct and significant relationship found between job demands and both task and contextual performance and same holds true for the relationship between personal demands and both task and contextual performance suggesting that there might be indirect effects involved.

To investigate the indirect effects or mediating effects, statistical technique of bootstrapping was applied in SEM using the statistical program of Amos graphics. A total of eight hypotheses and sub-hypotheses were dedicated to examine these indirect effects. The result of bootstrapping indicated that anxiety partially mediated or explained the relationship between job demands and task performance. However, full mediation was observed in case of depression as it fully explained the relationship between job demands and task performance. When tested anxiety as a mediator between job demands and contextual performance, it was found that job related anxiety fully mediated the relationship as the direct path between job demands and contextual performance was just over the benchmark of 0.05 in terms of statistical significance (i.e. p=0.058). Similarly, depression also fully mediated the relationship between job demands and contextual performance. Partial mediation was observed in case of anxiety explaining the relationship between personal demands and task performance. However, depression fully mediated the relationship between personal demands and task performance. Full mediations were observed for both anxiety and depression in

personal demands and contextual performance relationship. As for interactions, it was found that while self-compassion as a personal resource weakens the positive relationship between job demands and job stress but social support as a job resource failed to moderate this relationship.

5.3 Discussion of the Findings

A detailed discussion of the findings obtained as a result of data analysis in previous chapter are presented here in this section. These findings would be discussed in light of the postulated research objectives of the present study and a comparison between the findings obtained in this study with the previous studies on JD-R theory will be made to offer insights as to whether the findings are consistent with the literature in the field and if some findings are not consistent with previous research, it is discussed with probable explanation and justification of why it did not go the way it should have gone in light of the underpinning theories and context of present study. There are five research objectives which were based on the research questions derived from the existing literature on the JD-R theory.

5.3.1 Job Demands as Predictors of Job Stress and Job Performance

RO1: To examine the direct effect of job demands on job stress (anxiety and depression) and job performance (task and contextual performance).

The very first research objective of present study was to confirm the long proven direct relationship between job demands and job stress. The difference between the previous studies and this study is the operationalization of stress. For over a decade and half, job demands-resources (JD-R) model have used burnout and its three dimensions as an outcome of job demands in the stress process of the model. In this study, job stress has been operationalized

and measured by the two often neglected but very important factors of job related anxiety and depression. Moreover job demands were measured by using three demands relevant to nursing job i.e. quantitative job demands, physical job demands and emotional job demands. Although every single one of these demands were found to be directly and positively related to both factors of job stress i.e. anxiety and depression but in this study and many previous studies, job demands was treated as a second order reflective latent variable representing the underlying concepts of three job demands. The concepts of job stress and job performance were measured through their respective first order factors and are treated as first order factors as shown in final hypothesized structural model in previous chapter.

Four hypotheses were developed in order to investigate these direct effects between job demands and both job stress and job performance. The details about these direct relations are: the direct relationship between job demands and anxiety, the direct relation between job demands and depression, the direct relationship between job demands and task performance and direct relationship between job demands and contextual performance. The direct relations between job demands and two factors of job stress were hypothesized to be positive in direction but the direct relationships between job demands and both task and contextual performance were hypothesized to be negative in nature. The findings of the study suggested that not all the direct relationships that were hypothesized are proven in this study.

The results indicated that there was direct, positive and significant relationship between job demands as a second order construct and both first order factors of job stress i.e. anxiety and depression but on the contrary, the findings of the study failed to prove the direct, negative and significant relationship between job demands as a second order factor and both task and contextual performance suggesting that there might be indirect effects in this case. These

findings of direct relationship between job demands and job stress are consistent with many previous studies on JD-R theory (Demerouti et al., 2001; Bakker, Demerouti, & Schaufeli, 2003; Bakker, Demerouti & Verbeke, 2004; Bakker, Demerouti, & Euwema, 2005; Bakker & Demerouti, 2007; Tremblay & Messervey, 2011). However, the findings were inconsistent with the general notion that job stressors reduce the employees' ability to perform well in their jobs (McGrath, 1976; Fried, Ben-David, Tiegs, Avital, & Yeverechyahu, 1998) but "while plausible, this notion has received little empirical support. The apparent inconsistencies in the obtained associations between stressors and job performance have led researchers to search for mediators and moderators of these relationships" (Bakker, Demerouti & Verbeke, 2004, p. 85). The findings of this study suggests that due to the high job demands, nurses feel stressed out on their jobs by having experienced anxiety and depression, a result that is well supported by the main assumption of JD-R theory that job demands initiate the stress process of the model.

5.3.2 Personal Demands as Predictors of Job Stress and Job Performance

RO2: To investigate the direct influence of personal demands on job stress (anxiety and depression) and job performance (task and contextual performance).

The main contribution of present study is to study the concept of personal demands and to find out if this concept related to personal vulnerability functions in the same way as job demands in predicting job stress and job performance. Previously, personal characteristics were only treated as resources in JD-R theory but this study goes a step further and investigated that if personal characteristics can be termed as demands and can they also be initiators of the stress process of JD-R theory. In present study, two personal factors i.e. neuroticism and self-criticism were chosen to represent the concept of personal demands

based on the literature review. Similar to job demands, the concept of personal demands was treated and proven as a second order reflective construct during CFA and structural model assessment.

Present study has used four hypotheses to measure the direct effect of personal demands on both factors of job stress i.e. anxiety and depression and on both facets of job performance i.e. task and contextual performance to find out if personal demands can function the same way as job demands. The details of these direct effects are: the investigation of direct effects of personal demands on anxiety, the direct effect of personal demands on depression, the direct effect of personal demands on task performance and finally the direct effect of personal demands on contextual performance. Similar to job demands, it was hypothesized that the direct relationships between personal demands and both anxiety and depression will be positive and the direct effect of personal demands on both task and contextual performance will be negative. The results indicated that only two of these four hypothesized direct effects were verified during hypotheses testing.

The findings of the study revealed that there was a direct, positive and significant relationship between personal demands as a higher order factor and both anxiety and depression. The magnitude of this direct effect is even stronger than that of the direct relationship of job demands with the factors of job stress. This supports the assumption and hypotheses of present study but on the contrary, there was no direct, negative and significant relationship between personal demands and both task and contextual performance similar to the case of job demands and both facets of job performance pointing out to the probable existence of indirect effects. The findings that personal demands of neuroticism and self-criticism is positively associated with both anxiety and depression are consistent with many previous

studies (Blatt et al., 1982; Gruen et al., 1997; Cox et al., 2000; Al-Mashaan, 2001; Mongrain & Leather, 2006; Abbasi, 2011; Gramstad, Gjestad, & Haver, 2013; Desa et al., 2014; Ehret, Joormann & Berking, 2015).

As for the case of direct relationship between personal demands and both task and contextual performance, it can be argued that similar to job related stressors, the personal stressors are also believed to be negatively related to job performance but the contrary evidence in present study suggest that there is an indirect effect involved in this relationship of stressors and job performance (Bakker, Demerouti & Verbeke, 2004). The results are mostly consistent with JD-R theory in which it was posited that besides personal resources, personal demands can also be integrated in the model (Bakker & Demerouti, 2017). Present study has proven that personal demands can act in a similar way to job demands in predicting job stress and also act as initiator of the stress process of JD-R theory.

5.3.3 Job Stress as a Predictor of Job Performance

RO3: To measure the direct effect of job stress (anxiety and depression) on job performance (task and contextual performance).

One of the research objectives of current study was to study the direct effect of both factors of job stress i.e. anxiety and depression on both facets of job performance i.e. task and contextual performance. The total of four hypotheses were devised to test this assumption of direct relationship between job stress and job performance. The details of these direct effects are: the direct effect of anxiety on task performance, the direct effect of anxiety on contextual performance, the direct effect of depression on task performance and the direct effect of depression on contextual performance. The direction of these relationships was hypothesized to be negative.

The findings of the study revealed that all of these four hypotheses were supported such that there is a direct, negative and significant effect of the two factors of job stress on the two factors of job performance. These findings are consistent with JD-R theory in which it is a proposition that "job strain has a negative impact on job performance" (Bakker & Demerouti, 2017, p. 275). These findings are in line with many other previous studies (Jamal, 1984; Taris, 2006; Jamal, 2007; Bakker, Van Emmerik & Van Riet, 2008; Arshadi & Damiri, 2013; Yozgat, Yurtkoru & Bilginoğlu, 2013) which suggest that both anxiety and depression negatively effects task and contextual performance of nurses working in private hospitals of Pakistan.

5.3.4 Mediating Role of Job Stress in Stressors-Strain Relationship

RO4: To examine the mediating effects of job stress (anxiety and depression) in the relationship between both (job and personal) demands and job performance (task and contextual performance).

As can be found in previous sections, the direct relationships between both job and personal demands and both task and contextual performance did not materialize in structural model assessment so the indirect effects of job stress (anxiety and depression) have been evaluated in the relationship between (job and personal) demands and job performance (task and contextual performance) using the statistical technique of bootstrapping in SEM. It is important to note here that only the concept of job demands and personal demands were treated as second order reflective latent constructs. The first order factors for both job stress i.e. anxiety and depression and job performance i.e. task performance and contextual performance were used in this analysis.

A total of eight hypotheses were designed to examine these mediating effects. The details for these indirect effects are: the mediating effect of anxiety in job demands and task performance relationship, the mediating effect of anxiety in job demands and contextual performance relationship, the mediating effect of depression in job demands and task performance relationship, the mediating effect of depression in job demands and contextual performance relationship, the mediating effect of anxiety in the relationship between personal demands and task performance, the mediating effect of anxiety in the relationship between personal demands and contextual performance, the mediating effect of depression in the relationship between personal demands and task performance and the mediating effect of depression in the relationship between personal demands and contextual performance.

The results of the bootstrapping revealed that all of the eight hypotheses were supported such that there were two partial mediations and six full mediations. The only two partial mediations were observed in case of anxiety mediating the relationship of job demands and task performance and anxiety mediating the relationship between personal demands and task performance. All other hypothesized mediated/indirect effects of anxiety and depression were turned out to be full mediations in the relationships between job demands and job performance along with personal demands and job performance i.e. task and contextual performance. In previous studies, burnout was one of the most frequently used mediators in the stress process of JD-R theory (Bakker, Demerouti & Verbeke, 2004; Bakker & Demerouti, 2017). Present study is also different from previous studies in a way that it has used job stress in form of anxiety and depression as mediators in the stress process of the model. The findings of the study are consistent with the findings of previous studies in which many different forms of strain mediates the relationship between stressors and job performance (Al-Homayan et al., 2013a; Al-Homayan et al., 2013b; Falco et al., 2013; Hood

et al., 2015). Thus this becomes one of the contributions of present study to study the rather neglected mediating effects of anxiety and depression in stressors-performance relationship.

5.3.5 Moderating effect of Job and Personal Resources

RO4: To test the moderating effects of job resources (social support) and personal resources (self-compassion) in the positive relationship between job demands and job stress.

The final objective of present study was to investigate if both job and personal resources can buffer the positive relationship between job demands and job stress. For this reason, the most important and frequently used variable in stress buffering hypothesis i.e. social support was used as a job resource and a relatively new concept in organizational behavior i.e. self-compassion is conceptualized as a personal resource in present study. It is important to note here that, to the best of researcher's knowledge, the variable of self-compassion has never been used in any previous study on JD-R theory and moreover no previous study has used both job resources and personal resources as moderators in stress process of JD-R theory. In order to achieve this objective, two hypotheses were formulated to test the interactions of both job and personal resources in a strong and positive relationship between job demands and job stress. It is also important to note here that for this analysis in SEM, the composite score of job demands and job stress has been used (as observed variables). Moreover, the moderating variables were also converted into observed variables from latent variables. All the relevant variables were standardized prior to computing a product terms between independent variable i.e. job demands and both (job and personal) resources.

Findings of the study revealed support for one hypothesis but no support for the other hypothesized buffering effect. More specifically, self-compassion (as a personal resource) successfully moderated the positive relationship between job demands and job stress such that

higher levels of self-compassion weakens this positive relationship as hypothesized in present study. The significance of interaction term between job demands and self-compassion has proven that the relationship is moderated although the effect size is not very strong but it is to be expected in case of a complex model involving so many other variables.

This finding is a step forward in the realm of JD-R theory research because many prior studies failed to find any moderating effects for personal resources in stress process of JD-R theory so this finding is contradictory to the seminal study on the role of personal resources in JD-R theory by Xanthopoulou et al. (2007) but is consistent with the findings of many prior studies (Brenninkmeijer et al., 2010; Tremblay & Messervey, 2011; Van den Broeck et al., 2011; Tuckey & Dormann, 2012; Brouze, 2014; Van Doorn & Hülsheger, 2015; Dollard, Mayerl et al., 2017; Rhee, Hur & Kim, 2017) and is well within the propositions of JD-R theory in which it is suggested numerous times that personal resources can act the similar way as job resources and that it can play role in buffering the relationship between stressors and strain (Demerouti & Bakker, 2011; Van den Broeck et al., 2013; Bakker & Demerouti, 2014; Schaufeli & Taris, 2014; Bakker & Demerouti, 2017).

Contrary to what has been hypothesized in present study, social support (as a job resource) could not successfully moderate the positive relationship between job demands and job stress. In this case, not only the composite score of job demands and job stress have been used in SEM analysis but also the separate job demands were used in relation with both factors of job stress but the results were the same. The interaction term was found to be insignificant and thus no moderating effect was found. This finding is contradictory to many previous studies (Bakker, Demerouti & Euwema, 2005; Hakanen, Bakker & Demerouti, 2005; Xanthopoulou et al., 2007; Åslund et al., 2014; Shantz & Alfes, 2015, Tadić, Bakker & Oerlemans, 2015;

Viotti & Converso, 2016) and propositions of JD-R theory (Bakker & Demerouti, 2007; Bakker & Demerouti, 2014; Bakker & Demerouti, 2017) but is consistent with the findings of some studies on the moderating role of social support in stressors-strain relationship (Koniarek & Dudek, 1996; Salonna et al., 2012). This shows that when there is not enough social support in private hospitals, nurses will continue to suffer and experience more job stress as a result and that there should be other job resources present in working environment to collectively serve as protective factors against the high job demands.

5.4 Implications of Research

This study aimed to investigate the role of job and personal characteristics in predicting job stress and job performance of nursing staff working in private hospitals of Pakistan. Moreover, it was aimed to study if the concept of job stress can explain the relationship between job and personal stressors and job performance along with studying the moderating effect of job and personal resources in stressors-strain relationship. For this purpose, Job Demands-Resources (JD-R) model was used as a torch bearer in understanding the stress process more effectively. A comprehensive conceptual model based on JD-R theory was developed to achieve these aims and objectives. While constituting the conceptual model, special care has been given to address both theoretical and contextual gaps identified through extensive and critical literature review. The results of present study obtained on the basis of this developed conceptual model have both theoretical and practical implications such that there are new variables, concepts and paths which have been tested in present study and contribute to the JD-R theory along with presenting practical and possible solutions for policy makers and hospitals' administration so that they could address the important issues such as

the prevalence of heightened job stress and impaired job performance of nurses in private hospitals of Pakistan. These implications are discussed in next sections.

5.4.1 Theoretical Implications

This study confirms the main assumptions of JD-R theory and expands the body of knowledge surrounding the research around JD-R theory by testing new variables, adding and clarifying the new concepts and adding certain paths and interaction which were not tested before in this model. The findings of present study helped connect some missing dots in previous literature on the model and add new avenues for further research on the topic. Moreover, contextual gaps were also addressed by designing a comprehensive conceptual model which was not previously studied or tested in the context of private hospitals and nursing staff working in those hospitals.

Extensive and critical literature review has revealed many theoretical gaps in the realm of JD-R theory research and this study planned to address some of the very important theoretical gaps found in existing literature as suggested by leading authors of the theory and many other influential research studies. The first and foremost theoretical contribution of present study was to include the concept of personal demands in JD-R theory. When JD-R theory (Demerouti et al., 2001) was first introduced some 16 years ago in organizational behavior literature, it was only considered a model of job characteristics and how they were related to job burnout and other important outcomes. These job characteristics were divided into two global categories of job demands and job resources. It was only after 6 years, Xanthopoulou et al. (2007) addressed this limitation of the model and introduced the concept of personal resources in the JD-R theory.

After the inclusion of personal resources, Prieto et al. (2008) have suggested that it would be interesting to include personal demands as predictors of stress and motivation in both energy depleting and motivational process. Building on this suggestion, Guglielmi et al. (2012) have conceptualized workaholism as a personal demand and their findings suggested that workaholism is only indirectly linked to burnout via job demands and moreover, only one personal demand was used and thus it could not be considered a second order construct like job demands. Similar suggestions to include personal demands were also given in other critical reviews on the model (Van den Broeck et al., 2013; Schaufeli & Taris, 2014).

As for motivational process of JD-R theory, Barbier et al. (2013) have operationalized performance expectations as a personal demand and thus again, it could not be termed as a second order construct similar to job demands. Recently, Bakker and Demerouti (2017) emphasized that other personal demands could be integrated in both stress and motivational processes of the JD-R theory. Addressing these concerns and gaining insights provided in these previous studies, present study has operationalized two variables of neuroticism and self-criticism as personal demands and they were hypothesized to be predictors of job stress i.e. anxiety and depression. It is important to note here that findings of present study have proven that personal demands can be used as a second order reflective construct whereby neuroticism and self-criticism can serve as its two first order factors. This newly added second order construct was related directly and positively to job stress and thus it opens up the possibilities and new avenues for future research in this area.

One of the contributions of this study is to test the moderating effect of personal resources in stress process of JD-R theory. Although in their seminal study on the inclusion of personal resources in JD-R theory research, Xanthopoulo et al. (2007) could not find the buffering

effect of personal resources in the relationship of job demands and burnout but it is rightly argued that “although we do have evidence that personal resources can be conceptualized as mediator or outcome in the JD-R theory, we expect that they might have an even more complex role in modifying the impact of the work environment into positive or negative outcomes” and thus “future research should therefore examine whether the complex interaction of individual resources with the work environment” may occur to reduce the effect of job demands on job stress (Demerouti & Bakker, 2011).

Moreover, it is one the propositions of JD-R theory that personal resources can function in a similar way as does job resources and because of the reason that “the definition of personal resources implies that they may buffer negative effects of job demands on burnout and exacerbate positive effects of job resources on engagement” (Schaufeli & Taris, 2014), present study has hypothesized that personal resources moderate the relationship between job demands and job stress. For this reason, self-compassion has been operationalized as a personal resource and findings revealed that indeed self-compassion weakened the positive effect of job demands on job stress.

It is also important to note here that, to the best of researcher’s knowledge, no previous study has used both job and personal resources as moderators in stress process of JD-R theory and thus this is also a contribution of present study. Most previous studies on JD-R theory suggested that burnout is the most widely used mediator in stress process (Bakker, Demerouti & Verbeke, 2004; Bakker & Demerouti, 2017) and thus investigating the mediating role of job stress in form of anxiety and depression in the said process is also a contribution to the JD-R theory. Moreover, it is important to point out here that, to the best of researcher’s knowledge, both the variables of self-criticism and self-compassion conceptualized as a

personal demand and a personal resource respectively have never been used in JD-R theory research before so it is also a theoretical contribution of present study.

Furthermore, present study is unique in a way that, to the best of researcher's knowledge, no study in the past has developed a comprehensive model to test for stress process of JD-R theory in context of nursing staff working in private hospitals of Pakistan. The previous studies on JD-R theory in Pakistan either took into account the motivational process of JD-R theory alone (Danish, Ahmad & Khan, 2014) or did not focus on health sector (Khan et al., 2012; Malik & Khalid, 2016). There were only a few studies on JD-R theory applied to nursing staff in Pakistan and those too were applied on nurses working in public sector hospitals (Haider, Malik & Iqbal, 2015; Rohail et al. 2017) and thus it is a contextual contribution of present study to test a comprehensive conceptual model based on JD-R theory in context of nurses working in private hospitals of Pakistan.

5.4.2 Practical Implications

Besides offering insights as to how this study contributed to both theory and body of knowledge, this study has much to offer in terms of guidelines to practitioners and policy makers as well so that they could improve the job design and working conditions of nurses working in private hospitals of Pakistan. The study has shown that nurses at work are under a lot of pressure due to the demanding and challenging nature of their jobs and thus they experience job stress and as a result their job performance is imapired which is quite an alarming situation because of the sensitive nature of their jobs. The hospitals' management not only can gain insights as to why their employees (nurses) feel stressed out from their jobs

and does not perform well but also know the solutions to this problem which is indeed crippling their whole healthcare provision system in the respective hospitals.

It is quite obvious that every organization wants its employees to perform well so that organizational performance can be improved and thus hospitals' management should develop a workplace where employees have sufficient resources to cope with the demanding nature of their jobs. These resources can be divided further into two categories of job resources and personal resources. This study has shown that self-compassion (a personal resource) can be used to weaken the positive relationship between job demands and job stress which means that if hospital management foster and train their nurses to practice self-compassion in the wake of high job demands, they will experience less job stress and thus their performance will not suffer due to this reason. It is important for management to offer more of such trainings to help develop a system where different personal resources can be used to combat the negative outcomes of job and personal demands.

Another finding of the study revealed that social support (support from supervisors and colleagues) did not offset the positive relationship between job demands and job stress which means there is generally less support available to nurses and hospital management should create a culture of trust by adopting mutually beneficial policies and create a support system for nurses to feel comfortable to perform their tasks well. There are numerous other job resources which can be offered as a part of job design so that when nurses feel quantitatively, emotionally and physically challenged in their jobs, they can use those job resources to combat these demanding job situations. Not only these resources will help in stressful situations but it is also shown that they are related positively to job performance suggesting that these resources make employees feel motivated and eventually they perform well on their jobs and organizational objectives are achieved.

Besides being an influential theory in stress and occupational health research, there is a great practical need in which JD-R theory can be used in context of improving well-being of nurses and to help them avoid from being stressed out by assessing, monitoring and analyzing psychosocial factors at hospitals. It is recently observed that "because of its comprehensive, broad, flexible and communicative nature, the JD-R theory not only enjoys great popularity among academic researchers, but it makes the theory also quite suitable for practical use in organizations" (Schaufeli, 2017, p. 120). The practical implementation of JD-R theory in hospital environment is also critical because, clearly, poor working conditions result in stressful work environments and stressful hospital staff specially nurses will exhibit negative outcomes such as sickness absence, occupational incidents and accidents, reduced productivity and poor work performance.

On the other hand, if there are good working conditions available to nurses in their respective hospitals, it will lead towards positive outcomes such as work engagement and superior work performance. So it can be safely assumed that psychosocial factors and nurses' well-being eventually translate into financial business outcomes for private hospitals. Thus it is in hospitals' self-interest to endorse better working conditions and to monitor psychosocial factors at work and employees' well-being on a continuous basis so as to ensure timely and targeted measures in order to prevent job stress and help promote work engagement. But how do we actually achieve that and what role can JD-R theory really play in terms of improved job design and implementation of better working conditions? For this question to be answered, we need to see if there are any tools available to apply JD-R theory in organizations.

5.4.2.1. An Online JD-R Assessment Tool: The Energy Compass

Various comprehensive and widely used surveys are available to assess psychosocial factors at work, for example, the Questionnaire on the Experience and Evaluation of Work (QEEW), the Copenhagen Psychosocial Questionnaire (COPSOC), the Nordic Questionnaire for Psychosocial and Social Factors at Work (QPSNordic), and the Health and Safety Executive's Management Standards Indicator Tool (HSE MSIT). Even though all of these surveys include various job characteristics i.e. job demands and job resources but they are not really based on JD-R theory or any other stress model or theory for that matter, these surveys are just generic in nature and caters various psychosocial factors at workplace. However, "Energy Compass (EC) is the first instrument that is explicitly based on the JD-R theory. Its brief and informative name expresses that the EC might guide individuals as well as organizations in choosing the right direction to find energy at work. In addition to being based on a validated conceptual framework, the EC is also more efficient and more balanced" (Schaufeli, 2017, p. 122).

It is further argued that "compared to the other psychosocial questionnaires, the EC uses shorter scales and suffers less from negativity bias because it includes more positive constructs. The EC consists of a broad set of valid and reliable indicators of job demands, job resources, outcomes, and personal resources that have been identified by previous research and consultancy experience. It is an efficient tool that assesses a broad variety of constructs with relatively few items, thereby balancing a positive and a negative approach. Reference data are available that allow the classification of employee's scores as 'high', 'average', or 'low' as compared to the working population" (Schaufeli, 2017, p. 123). So EC can become a tool to assess and apply JD-R theory in organizations as it offers wide array of customization options and include a lot job and personal characteristics to choose from. Moreover, EC can

be used to apply JD-R theory in organizations by using 8 simple steps. These steps are displayed in Figure 5.1 below.

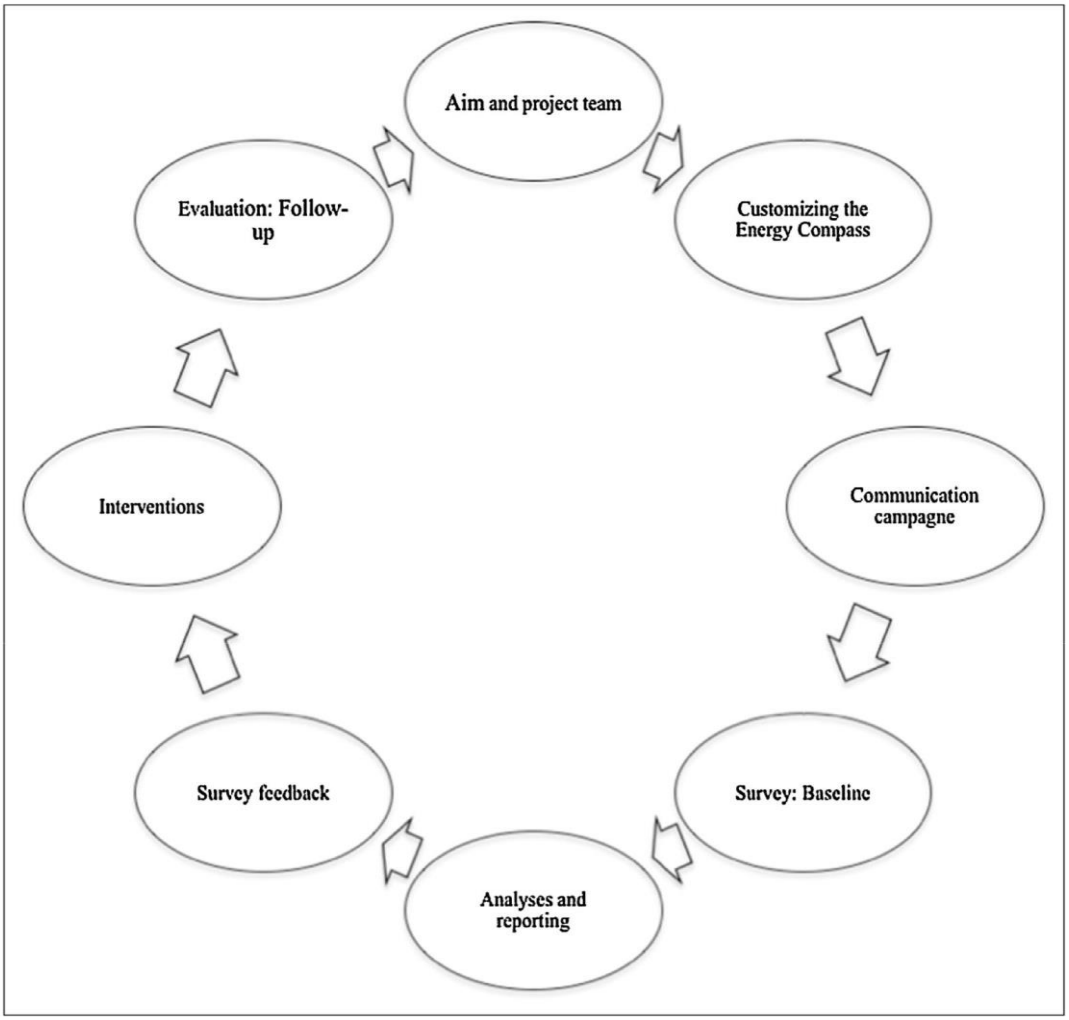


Figure 5.1: Steps for application of JD-R theory in Organizations (Adopted from Schaufeli, 2017, p. 125).

Step 1: Aim and Project Team

The first step in applying Job Demands-Resources (JD-R) theory in any healthcare organization or any organization for that matter is to establish the major aims of this application and assembling a project team in order to monitor the progress of the application. In this particular scenario, the major aim of applying JD-R theory in private hospitals

environment via Energy Compass (EC) is to address the issue of increased job stress and poor job performance of nurses. The commitment to successfully implement the JD-R theory in hospitals can be made sure if together with an experienced consultant, hospitals' top management i.e. COO or CFO and Director, Human Resources constitute the project team and monitor the progress of implementation.

Step 2: Customizing the Energy Compass (EC)

One of the major benefits of applying JD-R theory in any organization via Energy Compass (EC) is that the EC can be personalized according to the needs of the organization by the project team. In case of private hospitals, key personnel such as HR officers, hospital management, nursing supervisors, and nursing council members can be consulted to identify the most relevant job and personal stressors, personal and job resources, and outcomes related to hospital environment that should be included in the EC.

Step 3: Internal Communication Campaign

Before carrying out the survey based on the customized EC, an internal communication campaign within hospitals should be launched so as to motivate nurses to fill out the EC and also to stimulate them to be actively engaged in the overall project. This internal communication campaign not only should stress the importance of filling out the survey based on EC but also it should be made clear to nurses that this is an entirely voluntary participation and one of the benefits of participation is to receive immediate feedback and anonymity of the data provided by them. It should also be communicated to the participant nurses that the results of this survey will be used to improve the working conditions on the job and this survey has nothing to do with their performance evaluation so as to gain their trust.

Step 4: Survey and Individual Feedback

When the internal communication campaign is completed, next step should be to e-mail the nurses the web link to the survey (EC) and then giving them soft reminders twice or thrice (every other day) to ensure a respectable and representative response rate. As nurses would be expected to know the benefits of filling out the survey already, it is expected that the response rate would be good (i.e. 70 to 80%). Immediately after the nurses fill out the survey (EC), they will be directed to the automatically generated feedback report, which compared the nurses' scores with the benchmark (scores already saved on the system of either nurses in other hospitals or of employees in related industries) and which explains the meaning of the scores in greater detail. If the scores are low for any individual, the feedback report suggests the nurses to take the required action. The individual feedback report is structured according to the JD-R theory, meaning that job demands, personal demands, job and personal resources, well-being (work engagement and job stress), and outcomes (eg., job performance) are each presented under different headings. In order to assist nurses with the interpretation of their report, the logic of the application of JD-R theory should be briefly explained.

Step 5: Analysis and Reporting

After the collection of data and initial individual feedback provided to nurses, next step is to perform an aggregated data analysis and produce a general report for private healthcare organizations in general and specific individual hospitals in particular. Reports can also be drafted for the nurses working in different teams of different departments. It is of critical importance that all the reports must contain findings that are on the basis of aggregated data which means that average scores for the nurses and hospitals are to be reported in that general report. As mentioned in individual feedback reports for every nurse, the aggregated reports

also provides an overview of the scores for each element (variable) of the JD-R theory including the comparison with the established and saved benchmarks in the online system. Aggregate scores on job and personal demands; job and personal resources, level of job stress and nurses' job performance will reveal which of these job or personal stressors needs to be addressed and which of job and personal resources needs to be improved in order to decrease the level of job stress and improve job performance of nurses. Once identified, the hospital management can work on improving the job designs of nurses.

Step 6: Survey Feedback

The general report based on aggregated data analysis should be distributed to and discussed with each hospital's top management individually. In this discussion, the hired consultant along with hospital's COO or CFO along with Director, Human Resources must be present so as to ensure and depicts the importance of this whole excercise to top management of the respective hospitals. This feedback session should answer two basic questions; first, in how far does the pattern of results correspond with the perception of the stakeholders? This is a kind of validity check. Second, given the conclusions of the survey based on EC, what measures could and should be taken in order to decrease job stress and increase nurses' job performance?

These feedback sessions are conducive in building a common language to discuss the results and the actions to be taken. The terminology and the logic of the JD-R theory, which is quite easy to understand also for non-specialists and non-academics, can prove to be quite helpful in this respect. Moreover, feeding back the results and discussing these critically with management, supervisors, and nurses is remarkably significant to ensure commitment and trust for implementing interventions.

Step 7: Interventions

Based on the results of the survey (EC), there are two types of options in terms of actions or measures to be taken. Nurses can themselves take measures to improve their personal or job resources and decrease their personal and job demands by crafting their own jobs (Tims & Bakker, 2010; Tims, Bakker & Derks, 2012; Heuvel, Demerouti & Peeters, 2015; Van Wingerden, Bakker & Derks, 2017; Gordon et al., 2018). It is observed that "usually about 10%-15% of the employees do so spontaneously; for instance, they talk to their bosses or their colleagues to address certain issues, contact a career counseling service, or consult their occupational physician" (Schaufeli, 2017, p. 128). The second way is for hospitals to take matters in their own hands and improve the job design and working conditions of nurses working in those respective hospitals. There are numbers of steps that can be taken to improve the overall situation such as;

1. The hospital management can improve and update their annual HR policy or cycle by making the jobs challenging yet doable.
2. The syllabus and usage of the hospitals' own training centers can be improved to better meet the specific needs of the nurses.
3. Personal visits must be made by top management specially by CEO or COO to places where they can casually talk with nurses in order to improve the top-down and bottom-up communication and to know the real problems by having first hand information.
4. Management should also involve nurses in decision making related to their jobs and so that they have the sense of ownership within the hospital and work engagement can be improved which in turn help in boosting productivity and job performance of nurses.

5. Information and Communications Technology (ICT) systems can be further updaed and improved in order to better cater the needs of the nurses as users of the overall healthcare system. These days, most nurses use new ICT tools that help them perform their jobs more effectively. If these systems are improved and updated continuously, it would certainly benefit the nurses in performing their daily tasks more productively and moreover it eventually improve their job performance.

Step 8: Evaluation

After the individual or organizational interventions had been carried out, it is advised to have a follow-up survey based on EC after a year. This will account for the changes that will occur during the period of whole year and also this will prove the effectiveness of the EC and moreover, longitudinal surveys often help prove the causality of the constructs. This will also show if the (individual or organizational) interventions worked as expected or not and whether the survey helped reduce the personal and job demands and/or improve personal and job resources. Eventually this evaluation of effectiveness of EC will also depict if nurses' job stress is reduced and their job performance is improved because of the change in their job design and working conditions.

5.5 Limitations of the Study

There are some limitations of present study which are to be considered before making any conclusions regarding the findings of the study and these limitations can be addressed in future studies.

i. A limitation of present study was to collect data based on self-report measures which in turn increases the likelihood of encountering the problem of Common Method Variance (CMV) or Common Method Bias (CMB). Present study has applied Harman's single factor test (Podsakoff et al., 2003) on collected data to assess the influence of common method variance in present study. The results revealed that there is no general (single) factor which explains the most variance in the model. Although this does not exclude the possibility of common method variance in the data however it does suggest that the common method variance encountered in present study is not a great deal of concern and is not likely to lead to wrong interpretation of results.

ii. Present study is limited, in terms of data collection, to only Punjab province of Pakistan and thus due to time and cost constraint could not be able to collect data from other cities in other provinces of Pakistan.

iii. Moreover, present study is limited to the healthcare sector and thus data was only collected from one sector. Data was collected from only nurses working in private hospitals and only female nurses constitute as the target population of present study. The data and results are limited to only nursing staff in health care sector and no other healthcare personals were probed in this study.

iv. Another limitation of present study is to investigate the role of only three job demands i.e. quantitative job demands, physical and emotional job demands. Similarly, only

two personal demands of neuroticism and self-criticism were used to assess their impact on job stress.

v. In case of job and personal resources, only one of each was used to assess the moderating effect on the relationship between stressors and strain. The only job resource was that of social support and personal resource(s) were conceptualized as self-compassion.

vi. Data was only collected from Pakistan and thus cross cultural comparisons were not accounted for in present study.

vii. Time and cost constraints are also the limitations for present study due to which it could not be possible to collect data from other provinces and to adopt longitudinal research design.

5.6 Recommendations for Future Research

The present study aimed to test a comprehensive model involving both job and personal characteristics in order to predict job stress and job performance of nurses working in private hospitals of Pakistan. Although special care and effort was made to extensively and critically review the existing literature on the JD-R theory to devise a comprehensive model involving important variables and paths but there is still room for improvement as there always is. This section will present the guidelines and recommendations for future research on this intriguing topic and these guidelines are discussed point wise below:

i. Future studies on JD-R theory should also use data collection techniques such as observer ratings, peer and superior ratings, and the use of objective data in terms of various job demands, job resources and job performance of employees in order to avoid common method bias in the collected data (Podsakoff et al., 2003).

ii. Data should be collected from other provinces of Pakistan as well so that the results can be more generalizable to the whole country.

iii. In present study, data was only collected from health sector and it is recommended to collect data from other sectors as well.

iv. For future studies even in health sector, data should also be collected from other paramedical staff, male nurses and doctors in both private and public sector hospitals.

v. Although present study has used three job demands relevant to nursing job in order to probe the stressors associated with the nurses' job, it is advised to use different set of variables as job demands to see which job demands play a better role in predicting job stress.

vi. Similarly, the main contribution of this study was to include personal stressors named as personal demands in JD-R theory. For this purpose, only two personal demands of neuroticism and self-criticism were used. More variables related to personal vulnerability can be operationalized as personal demands such as perfectionism, goal settings and levels of expectations (Prieto et al., 2008; Guglielmi et al, 2012), type A behavior, overcommitment (Schaufeli et al., 2009), basic needs satisfaction (Barbier et al., 2013), cognitive control deficits (Van den Broeck et al., 2013) and personal vulnerability factors like workaholism and pessimism (Schaufeli & Taris, 2014). It is also important to note here that depending on the nature of personal demand, it can both be used in stress and motivational process of JD-R theory (Bakker & Demerouti, 2017).

vii. This study has only used the direct effects of personal demands on job stress. Future research can use personal demands as mediators in stress process like personal

resources were used as mediator(s) in motivational process of JD-R theory (Xanthopoulo et al., 2007).

viii. Moreover, moderating role of personal demands in motivational process can also be tested to examine if these individual demands can be used as moderating variables also similar to job demands being used as moderators in motivational process of JD-R theory (Bakker, 2011).

ix. Present study has only used personal resource(s) as a moderator of the relationship between job demands and job stress. Future research studies should also test whether personal resources can moderate the relationship between personal demands and job stress or burnout.

x. Only one job resource and one personal resource was used in present study, it is recommended to use different and new sets of variables under the umbrella of both job and personal resources in order to find out which resources are needed the most to be fostered in the workplace in order to combat the demanding nature of job tasks.

xi. Future studies should also consider collecting data from multiple countries if possible so that the results of both data sets from developing and developed countries could be compared in order to find any differences in measuring the same variables for cross cultural comparisons (Jang, 2015).

5.7 Conclusion of the Study

The results of hypotheses testing have provided reasonable grounds to conclude that present study has achieved its major aims and objectives and answered the research questions that were largely unanswered in previous studies. The data was collected by using self-administered questionnaires from 382 nurses working in private hospitals situated in Punjab

province of Pakistan. The conclusion can be drawn that, as expected, increased job stress and reduced job performance prevailed in case of nursing staff working in private hospitals of Pakistan. Both job and personal demands (stressors) contribute towards the development of job stress as measured by job related anxiety and depression in this study and as a result the job performance of nurses as measured by both task and contextual performance reduces.

Results of moderated structural equation modeling also revealed that personal resource of self-compassion has moderated the positive relationship between job demands and job stress such that higher levels of self-compassion weakened this positive relationship between the composite scores of job demands and job stress. Thus hospital administration should focus on fostering a workplace environment in which nurses are continuously reminded of showing compassion towards themselves in wake of demanding job tasks. However, contrary to what has been theorized, social support (a job resource) failed to moderate the positive relationship between job demands and job stress. These findings supports the propositions of JD-R theory (Bakker & Demerouti, 2017) and also are consistent with many other previous studies on JD-R theory.

Besides confirmation of the assumptions of JD-R theory, present study is also unique in many ways and contributed towards opening up the new avenues of research in the realm of JD-R theory research. More specifically, present study has contributed mainly to JD-R theory by clarifying the nature of the concept and role of personal demands in JD-R theory research by proving it as a second order construct and also by showing that this newly added construct can function in the similar way as job demands in predicting job stress. Along with having theoretical implications, present study can be used by policy makers, managers and practitioners in government and hospital settings of Pakistan to better understand how job and

personal stressors contribute towards the development of job stress of nurses and their impaired job performance and how job and personal resources can be used and enhanced to combat the negative outcomes such as heightened job stress and reduced job performance.

REFERENCES

Aasa, U., Barnekow-Bergkvist, M., Angquist, K. A., & Brulin, C. (2005). Relationships between work-related factors and disorders in the neck-shoulder and low-back region among female and male ambulance personnel. *Journal of Occupational Health, 47*(6), 481-489.

Abbasi, I. S. (2011). *The influence of neuroticism on stress perception and its resultant negative affect*. (Master's Thesis). San Jose State University. Retrieved from http://scholarworks.sjsu.edu/etd_theses/3965

AbuAlRub, R. F. (2004). Job Stress, Job Performance, and Social Support among Hospital Nurses. *Journal of Nursing Scholarship, 36*(1), 73–78.

Addae, H. M., Praveen Parboteeah, K., & Velinor, N. (2008). Role stressors and organizational commitment: public sector employment in St Lucia. *International Journal of Manpower, 29*(6), 567-582.

Afshar, H., Roohafza, H., Hassanzadeh-Keshteli, A., Sharbafchi, M. R., Feizi, A., & Adibi, P. (2015). Association of personality traits with psychological factors of depression, anxiety, and psychological distress: a community based study. *International Journal of Body, Mind and Culture*, *2*(2), 105-114.

Afzal, S., Masroor, I., & Shafqat, G. (2012). Migration of health workers: A challenge for health care system. *Journal of the College of Physicians and Surgeons Pakistan, 22*(9), 586-587.

Agho, A. O., Price, J. L., & Mueller, C. W. (1992). Discriminant validity of measures of job satisfaction, positive affectivity and negative affectivity. *Journal of Occupational and Organizational Psychology, 65*(3), 185-195.

Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J., & Silber, J. H. (2002). Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *Journal of the American Medical Association, 288*(16), 1987-1993.

Aiken, L. H., Sloane, D. M., Cimiotti, J. P., Clarke, S. P., Flynn, L., Seago, J. A., Spetz, J., & Smith, H. L. (2010). Implications of the California nurse staffing mandate for other states. *Health Services Research, 45*(4), 904-921.

Akbari, J., Akbari, R., Shakerian, M., & Mahaki, B. (2017). Job demand-control and job stress at work: A cross-sectional study among prison staff. *Journal of Education and Health Promotion*, *6*(15). doi: 10.4103/jehp.jehp_68_14

Akiskal, H. S., Hirschfeld, R. M., & Yerevanian, B. I. (1983). The relationship of personality to affective disorders: a critical review. *Archives of General Psychiatry, 40*(7), 801-810.

Akkermans, J., Brenninkmeijer, V., Blonk, R. W., & Koppes, L. L. (2009). Fresh and healthy? Well-being, health and performance of young employees with intermediate education. *Career Development International*, *14*(7), 671-699.

Akram, M., & Khan, F. J. (2007). Health Care Services and Government Spending in Pakistan (Working Paper No. 32). Retrieved from the Pakistan Institute of Development Economics (PIDE) website: http: http://www.pide.org.pk/pdr/index.php/wp/article/view/2447/2420.

Al-Ahmadi, H. (2009). Factors affecting performance of hospital nurses in Riyadh region, Saudi Arabia. *Quality Assurance, 22*(1), 40-54.

Al-Homayan, A. M., Shamsudin, F. M., Subramaniam, C., & Islam, R. (2013a). Effects of job stress and organizational support on the relationship between job demand resources

and nurses' job performance in Saudi public hospitals. *Australian Journal of Basic and Applied Sciences, 7*(10), 7-19.

Al-Homayan, A. M., Shamsudin, F. M., Subramaniam, C., & Islam, R. (2013b). The Mediating Effects of Job Stress on the Relationship between Job Demands Resources and Nurses' Performance in Public Sector Hospitals in Saudi Arabia. *Australian Journal of Basic and Applied Sciences, 7*(10), 52-62.

Al-Mashaan, O. S. (2001). Job stress and job satisfaction and their relation to neuroticism, type A behavior, and locus of control among Kuwaiti personnel. *Psychological Reports, 88*(3), 1145-1152.

Alcock, D., Dollin, N., & Dulberg, C. (1994). Assessment of nurse accuracy in capillary glucose monitoring. *Canadian Journal of Diabetes Care, 18*, 17–22.

Ali, N., & Ali, A. (2014). The mediating effect of job satisfaction between psychological capital and job burnout of Pakistani nurses. *Pakistan Journal of Commerce and Social Sciences*, *8*(2), 399-412.

Alkema, K., Linton, J. M., & Davies, R. (2008). A study of the relationship between self-care, compassion satisfaction, compassion fatigue, and burnout among hospice professionals. *Journal of Social Work in End-of-Life and Palliative Care, 4*(2), 101-119.

Allen, R. D., Hitt, M. A., & Greer, C. R. (1982). Occupational stress and perceived organizational effectiveness in formal groups: An examination of stress level and stress type. *Personnel Psychology, 35*(2), 359-370.

Alnaes, R., & Torgersen, S. (1997). Personality and personality disorders predict development and relapses of major depression. *Acta Psychiatrica Scandinavica, 95*(4), 336-342.

Aluja, A., García, Ó., & García, L. F. (2002). A comparative study of Zuckerman's three structural models for personality through the NEO-PI-R, ZKPQ-III-R, EPQ-RS and Goldberg's 50-bipolar adjectives. *Personality and Individual Differences*, *33*(5), 713-725.

Alvaro, C., Lyons, R. F., Warner, G., Hobfoll, S. E., Martens, P. J., Labonte, R., & Brown, R.E. (2010). Conservation of resources theory and research use in health systems. *Implementation Science, 5*(1), 79-98.

Alwani, H. (2009, May 12). International Nursing Day. DAWN. Retrieved from http://www.dawn.com

American Psychological Association (APA) (2012). *Stress: The different kinds of stress*. Retrieved from http://www.apa.org/helpcenter/stress-kinds.aspx

Angst, J., & Clayton, P. (1986). Premorbid personality of depressive, bipolar, and schizophrenic patients with special reference to suicidal issues. *Comprehensive Psychiatry*, *27*(6), 511-532.

Anisman, H., Merali, Z., & Stead, J. D. H. (2008). Experimental and genetic contributions to depressive-and anxiety-like disorders: Clinical and experimental studies. *Nature, Neuroscience and Behavioral Reviews, 32*(6), 1185-1206. doi: 10.1016/j.neubiorev.2008.03.001.

Arbuckle, J. L. (2015). *IBM SPSS Amos 23 user's guide*. [Computer software and manual]. New York, NY: IBM.

Ariza-Montes, A., Arjona-Fuentes, J. M., Han, H., & Law, R. (2018). Work environment and well-being of different occupational groups in hospitality: Job Demand–Control–Support model. *International Journal of Hospitality Management, 73*, 1-11.

Armendariz, R. E. (2012). *What are the Benefits of Supervisor Support? Are they affected by an Employee's Race?* (Master's thesis) The Ohio State University, United States.

Arsenault, A., & Dolan, S. (1983). The role of personality, occupation and organization in understanding the relationship between job stress, performance and absenteeism. *Journal of Occupational Psychology, 56*(3), 227-240.

Arshadi, N., & Damiri, H. (2013). The relationship of job stress with turnover intention and job performance: Moderating role of OBSE. *Procedia-Social and Behavioral Sciences, 84*, 706-710.

Aslund, C., Larm, P., Starrin, B., & Nilsson, K. W. (2014). The buffering effect of tangible social support on financial stress: influence on psychological well-being and psychosomatic symptoms in a large sample of the adult general population. *International Journal for Equity in Health, 13*(1), 85-94.

Aube, J., & Whiffen, V. E. (1996). Depressive styles and social acuity: Further evidence for distinct interpersonal correlates of dependency and self-criticism. *Communication Research*, *23*(4), 407-424.

Azman, I., Sieng, L. L. C., Ajis, M. N. E., Dollah, N. F., & Boerhannoeddin, A. (2009). Relationship between supervisor's role and job performance in the workplace training program. *Analele Stiintifice ale Universitatii" Alexandru Ioan Cuza" din Iasi-Stiinte Economice*, *56*, 237-251.

Bacha, E. (2014). The relationship between transformational leadership, task performance and job characteristics. *Journal of Management Development*, *33*(4), 410-420.

Bahalkani, H.A., Kumar, R., Lakho, A.R., Mahar, B., Mazhar, S.B., & Majeed, A. (2011). Job satisfaction in nurses working in tertiary level health care settings of Islamabad, Pakistan. *Journal of Ayub Medical College Abbottabad*, *23*(3), 130-133.

Bakker, A. B., Killmer, C. H., Siegrist, J., & Schaufeli, W. B. (2000). Effort-reward imbalance and burnout among nurses. *Journal of Advanced Nursing, 31*(4), 884- 891.

Bakker, A. B., Demerouti, E., De Boer, E., & Schaufeli, W. B. (2003). Job demands and job resources as predictors of absence duration and frequency. *Journal of Vocational Behavior, 62*(2), 341-356.

Bakker, A., Demerouti, E., & Schaufeli, W. (2003). Dual processes at work in a call center: An application of the job demands–resources model. *European Journal of Work and Organizational Psychology, 12*(4), 393-417.

Bakker, A. B., Demerouti, E., Taris, T. W., Schaufeli, W. B., & Schreurs, P. J. G. (2003). A multigroup analysis of the job demands-resources model in four home care organizations. *International Journal of Stress Management, 10*(1), 16-38. doi: http://dx.doi.org/10.1037/1072-5245.10.1.16

Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management, 43*(1), 83-104.

Bakker, A.B., Demerouti, E., Euwema, M.C. (2005). Job resources buffer the impact of job demands on burnout. *Journal of Occupational Health Psychology, 10,* 170-80.

Bakker, A. B., & Heuven, E. (2006). Emotional dissonance, burnout, and in-role performance among nurses and police officers. *International Journal of Stress Management*, *13*(4), 423-440.

Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, *22*(3), 309-328.

Bakker, A. B., & Demerouti, E. (2008). Towards a model of work engagement. *Career Development International, 13*(3), 209-223.

Bakker, A. B., Van Emmerik, H., & Van Riet, P. (2008). How job demands, resources, and burnout predict objective performance: A constructive replication. *Anxiety, Stress, and Coping, 21,* 309 –324. doi: http://dx.doi.org/10.1080/10615800801958637

Bakker, A. B., van Veldhoven, M., & Xanthopoulou, D. (2010). Beyond the demand control model: Thriving on high job demands and resources. *Journal of Personnel Psychology*, *9*(1), 3-16.

Bakker, A. B. (2011). An evidence-based model of work engagement. *Current Directions in Psychological Science*, *20*(4), 265-269.

Bakker, A. B. (2013). Job Demands-Resources model. In E. H. Kessler (Ed.), *Encyclopedia of Management Theory*. Thousand Oaks, CA: Sage Publications.

Bakker, A.B., & Sanz-Vergel, A.I. (2013). Weekly work engagement and flourishing: The role of hindrance and challenge job demands. *Journal of Vocational Behavior, 83,* 397-409.

Bakker, A. B., & Demerouti, E. (2014). Job demands-resources theory. In P. Y. Chen & C. L. Cooper (Eds.), *Work and Wellbeing: Wellbeing: A complete reference guide* (Volume III; pp. 37-64). Chichester, United Kingdom: Wiley-Blackwell.

Bakker, A. B., & Demerouti, E. (2017). Job demands–resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology, 22*(3), 273-285. doi: http://dx.doi.org/10.1037/ocp0000056

Bandalos, D. L., & Finney, S. J. (2001). Item parceling issues in structural equation modeling. In Marcoulides, G. A., & Schumacker, R. E. (Eds.), *New developments and techniques in structural equation modeling* (pp 269-296). London, United Kingdom: Psychology Press.

Bandura, A. (1997). *Self-Efficacy: The Exercise of Control*. New York, USA: Freeman.

Barbier, M., Hansez, I., Chmiel, N., & Demerouti, E. (2013). Performance expectations, personal resources, and job resources: how do they predict work engagement? *European Journal of Work and Organizational Psychology, 22*(6), 750-762.

Barnard, L. K., & Curry, J. F. (2011). Self-compassion: Conceptualizations, correlates, & interventions. *Review of General Psychology, 15*(4), 289-304.

Barrett, P. (2007). Structural equation modeling: Adjudging model fit. *Personality and Individual Differences, 42,* 815–824.

Barrick, M.R. & Mount, M.K. (1991). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*, 1-26.

Barrick, M. R., Mount, M. K., & Judge, T. A. (2001). Personality and performance at the beginning of the new millennium: What do we know and where do we go next? *International Journal of Selection and Assessment, 9*(1), 9-30.

Baruch, Y. (1999). Response rate in academic studies – a comparative analysis. *Human Relations, 52,* 421–438.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York, USA: Guilford Press.

Beck, A. T., Epstein, N., & Harrison, R. (1983). Cognitions, attitudes and personality dimensions in depression. *British Journal of Cognitive Psychotherapy, 1*(1), 1-16.

Beehr, T. A. (1995). *Psychological stress in the workplace.* London, United Kingdom: Routledge.

Beehr, T. A. (2014). *Psychological stress in the workplace (Psychology Revivals).* London, United Kingdom: Routledge.

Bennett-Goleman, T. (2001). *Emotional alchemy: How the mind can heal the heart*. New York, USA: Three Rivers Press.

Bergner, R. M. (1997). What is psychopathology? And so what? *Clinical Psychology: Science and Practice, 4*(3), 235-248.

Berliner, H. S., & Ginzberg, E. (2002). Why this hospital nursing shortage is different. *Journal of the American Medical Association, 288*(21), 2742-2744.

Besser, A., & Priel, B. (2003a). A Multisource Approach to Self-Critical Vulnerability to Depression: The Moderating Role of Attachment. *Journal of Personality*, *71*(4), 515-555.

Besser, A., & Priel, B. (2003b). Trait vulnerability and coping strategies in the transition to motherhood. *Current Psychology*, *22*(1), 57-72.

Besser, A., & Priel, B. (2005a). The apple does not fall far from the tree: Attachment styles and personality vulnerabilities to depression in three generations of women. *Personality and Social Psychology Bulletin*, *31*(8), 1052-1073.

Besser, A., & Priel, B. (2005b). Interpersonal relatedness and self-definition in late adulthood depression: Personality predispositions, and protective factors. *Social Behavior and Personality: an International Journal*, *33*(4), 351-382.

Besser, A., Vliegen, N., Luyten, P., & Blatt, S. J. (2008). Systematic empirical investigation of vulnerability to postpartum depression from a psychodynamic perspective: Commentary on issues raised by Blum (2007). *Psychoanalytic Psychology, 25*(2), 392-410. doi: http://dx.doi.org/10.1037/0736-9735.25.2.392

Besser, A., & Priel, B. (2010). Personality vulnerability, low social support, and maladaptive cognitive emotion regulation under ongoing exposure to terrorist attacks. *Journal of Social and Clinical Psychology*, *29*(2), 166-201.

Besser, A., Luyten, P., & Blatt, S. J. (2011). Do humor styles mediate or moderate the relationship between self-criticism and neediness and depressive symptoms? *The Journal of Nervous and Mental Disease*, *199*(10), 757-764.

Besser, A., & Priel, B. (2011). Dependency, self-criticism and negative affective responses following imaginary rejection and failure threats: Meaning-making processes as moderators or mediators. *Psychiatry*, *74*(1), 31-40.

Beutell, N. J. (2010). Work schedule, work schedule control and satisfaction in relation to work-family conflict, work-family synergy, and domain satisfaction. *Career Development International*, *15*(5), 501-518.

Bhat, R. M., Sameer, M., & Ganaraja, B. (2011). Eustress in education: Analysis of the perceived stress score (PSS) and blood pressure (BP) during examinations in medical students. *Journal of Clinical and Diagnostic Research*, *5*, 331-1335.

Bhatti, M. H., Bhatti, M. H., Akram, M. U., Hashim, M., & Akram, Z. (2016). Relationship between job stress and organizational commitment: An empirical study of banking sector. *E3 Journal of Business Management and Economics*, *7*(1), 29-37.

Bienvenu, O. J., Nestadt, G., Samuels, J. F., Costa, P. T., Howard, W. T., & Eaton, W. W. (2001). Phobic, panic, and major depressive disorders and the five-factor model of personality. *The Journal of Nervous and Mental Disease*, *189*(3), 154-161.

Bienvenu, O. J., Samuels, J. F., Costa, P. T., Reti, I. M., Eaton, W. W., & Nestadt, G. (2004). Anxiety and depressive disorders and the five-factor model of personality: A higher-and lower-order personality trait investigation in a community sample. *Depression and Anxiety*, *20*(2), 92-97.

Birtch, T. A., Chiang, F. F., & Van Esch, E. (2016). A social exchange theory framework for understanding the job characteristics–job outcomes relationship: the mediating role of

psychological contract fulfillment. *The International Journal of Human Resource Management*, *27*(11), 1217-1236.

Bjorner, J. B., & Pejtersen, J. H. (2010). Evaluating construct validity of the second version of the Copenhagen Psychosocial Questionnaire through analysis of differential item functioning and differential item effect. *Scandinavian Journal of Public Health*, *38*(3), 90-105.

Blake, H., & Harrison, C. (2013). Health behaviours and attitudes towards being role models. *British Journal of Nursing*, *22*(2), 86-94.

Blatt, S. J. (1974). Levels of object representation in anaclitic and introjective depression. *The Psychoanalytic Study of the Child*, *29*(1), 107-157.

Blatt, S. J., D'Afflitti, J. P., & Quinlan, D. P. (1976). *Depressive Experiences Questionnaire*. Yale University, School of Medicine, Department of Psychiatry.

Blatt, S. J., Quinlan, D. M., Chevron, E. S., McDonald, C., & Zuroff, D. (1982). Dependency and self-criticism: Psychological dimensions of depression. *Journal of Consulting and Clinical Psychology, 50*(1), 113-124. doi: http://dx.doi.org/10.1037/0022-006X.50.1.113

Blatt, S. J. (1990). Interpersonal relatedness and self-definition: Two personality configurations and their implications for psychopathology and psychotherapy. In J. L. Singer. (Ed.), *Repression and Dissociation: Implications for Personality Theory, Psychopathology and Health* (pp. 299-335). Chicago, USA: University of Chicago Press.

Blatt, S. J., & Zuroff, D. C. (1992). Interpersonal relatedness and self-definition: Two prototypes for depression. *Clinical Psychology Review, 12*(5), 527-562.

Blatt, S. J., & Homann, E. (1992). Parent-child interaction in the etiology of dependent and self-critical depression. *Clinical Psychology Review*, *12*(1), 47-91.

Blatt, S. J. (2004). *Experiences of depression: Theoretical, clinical, and research perspectives*. Massachusetts, USA: American Psychological Association.

Blatt, S. J., & Zuroff, D. C. (2005). Empirical evaluation of the assumptions in identifying evidence based treatments in mental health. *Clinical Psychology Review*, *25*(4), 459-486.

Blatt, S. J. (2008). Two primary configurations of psychopathology. In S. J. Blatt (Ed.), *Polarities of experience: Relatedness and self-definition in personality development, psychopathology, and the therapeutic process* (pp. 165-199). doi: http://dx.doi.org/10.1037/11749-006

Blau, G. (1981). An empirical investigation of job stress, social support, service length, and job strain. *Organizational Behavior and Human Performance*, *27*(2), 279-302.

Blegen, M. A. (1993). Nurses' job satisfaction: A meta-analysis of related variables. *Nursing Research*, *42*(1), 36-41.

Bolger, N., & Schilling, E. A. (1991). Personality and the problems of everyday life: The role of neuroticism in exposure and reactivity to daily stressors. *Journal of Personality*, *59*(3), 355-386.

Bolger, N., & Zuckerman, A. (1995). A framework for studying personality in the stress process. *Journal of Personality and Social Psychology*, *69*(5), 890-902.

Bollen, K. A., & Stine, R., (1990). Direct and indirect effects: Classical and bootstrap estimates of variability. *Sociological Methodology*, *20*(1), 115-140.

Borman, W. C., & Motowidlo, S. J. (1993). Expanding the criterion domain to include elements of contextual performance. In Schmitt, N., & Borman, W. C. (Eds.), *Personnel selection in organizations* (pp. 71-98). San Francisco, USA: Jossey-Bass.

Borman, W. C., & Motowidlo, S. J. (1997). Task performance and contextual performance: The meaning for personnel selection research. *Human Performance, 10*(2), 99-109.

Borritz, M. (2006). Burnout in human service work-causes and consequences. (Doctoral dissertation, National Institute of Occupational Health, Denmark).

Bosma, H., Peter, R., Siegrist, J., & Marmot, M.G. (1998). Alternative job stress models and the risk of coronary heart disease. *American Journal of Public Health, 88*(1), 68-74.

Boumans, N. P. G., & Landeweerd, J. A. (1993). Leadership in the nursing unit: Relationships with nurses' well-being. *Journal of Advanced Nursing, 18*(5), 767-775.

Bourbonnais, R., Comeau, M., & Vezina, M. (1999). Job strain and evolution of mental health among nurses. *Journal of Occupational Health Psychology, 4*(2), 95-107.

Bova, N., De Jonge, J., & Guglielmi, D. (2015). The Demand-Induced Strain Compensation Questionnaire: A Cross-national Validation Study. *Stress and Health, 31*(3), 236-244.

Boyce, P., Hickie, I., & Gordon, P. (1991). Parents, partners or personality? Risk factors for post-natal depression. *Journal of Affective Disorders, 21*(4), 245-255.

Boyce, P., Parker, G., Barnett, B., Cooney, M., & Smith, F. (1991). Personality as a vulnerability factor to depression. *The British Journal of Psychiatry, 159*(1), 106-114.

Brach, T. (2003). *Radical acceptance: embracing your life with the heart of a Buddha*. New York, USA: Bantam.

Brenninkmeijer, V., Demerouti, E., Le Blanc, P., & Van Emmerik, H. (2010). Regulatory focus at work: The moderating role of regulatory focus in the job demands-resources model. *Career Development International, 15*(7), 708-728.

Brewin, C. B., & Firth-Cozens, J. (1997). Dependency and self-criticism as predictors of depression in young doctors. *Journal of Occupational Health Psychology*, *2*(3), 242-246.

Briner, R.B., Harris, C., & Daniels, K. (2004). How do work stress and coping work? Toward a fundamental theoretical reappraisal. *British Journal of Guidance and Counselling, 32*(2), 223-234.

Brockner, J., Tyler, T. R., & Cooper-Schneider, R. (1992). The influence of prior commitment to an institution on reactions to perceived unfairness: The higher they are, the harder they fall. *Administrative Science Quarterly, 37*(2), 241-261.

Brotheridge, C. M., & Lee, R. T. (2005). Impact of work-family interference on general well-being: A replication and extension. *International Journal of Stress Management, 12*(3), 203-221.

Brouze, K. L. (2014). *Examining the mediating and moderating role of psychological capital in the job demands-resources model* (Master's thesis). University of Cape Town.

Brown, N. D., & Thomas, N. I. (2003). Exploring variables among medical center employees with injuries: Developing interventions and strategies. *AAOHN* Journal*: Official Journal of the American Association of Occupational Health Nurses, 51*(11), 470-481.

Brown, T. A. (2007). Temporal course and structural relationships among dimensions of temperament and DSM-IV anxiety and mood disorder constructs. *Journal of Abnormal Psychology, 116*(2), 313-328.

Brown, T. A. (2015). *Confirmatory factor analysis for applied research*. New York, USA: Guilford Publications.

Bryman, A. (2005). *Research methods and organization studies* (Vol. 20). London, United Kingdom: Routledge.

Bryman, A., & Bell, E. (2011). *Business research methods* (3rd Ed.). New York, USA: Oxford University Press.

Buapetch, A., Lagampan, S., Faucett, J., & Kalampakorn, S. (2008). The Thai version of effort-reward imbalance questionnaire (Thai ERIQ): A study of psychometric properties in garment workers. *Journal of Occupational Health, 50*(6), 480-491.

Burke, R. J., & Richardsen, A. M. (1993). *Psychological burnout in organizations*. New York, USA: Marcel Dekker.

Burke, R. J., & Ng, E. (2006). The changing nature of work and organizations: Implications for human resource management. *Human Resource Management Review*, *16*(2), 86-94.

Burnard, P. (1991). *Coping with stress in the health professions: A practical guide*. London: Chapman & Hall.

Burrell, G. & Morgan, G. (1979). *Sociological Paradigms and Organizational Analysis*. London: Heinemann.

Busch, T. (2014). *Does self-compassion buffer the impact of poor basic need satisfaction on organismic well-being? A cross-sectional study on the relation between self-compassion and vitality* (Master's thesis). University of Twente.

Butt, H.S., Khan, F., Rasli, A.B.M., & Iqbal, M.J. (2012). Impact of work and physical environment on hospital nurses commitment. *International Journal of Economics and Research*, *3*(3), 33-43.

Buunk, B. P., & Schaufeli, W. B. (1993). *Burnout: A perspective from social comparison theory*. Philadelphia, USA: Taylor & Francis.

Buunk, B. P., de Jonge, J., Ybema, J. F., & de Wolff, C. J. (1998). Psychosocial Aspects of Occupational Stress. In Drenth, P. J. D., Thierry, H., & de Wolff, C. J. (Eds.),

Handbook of Work and Organizational Psychology (pp.145-182). Hove, United Kingdom: Psychology Press/Erlbaum (UK) Taylor & Francis.

Byrne, B. M. (2016). *Structural Equation Modeling with Amos: Basic Concepts, Applications, and Programming* (3rd ed). New York, USA: Routledge.

Campbell, J. J., Dunnette, M. D., Lawler, E. E., & Weick, K. E. (1970). Managerial behavior, performance, and effectiveness. New York, USA: McGraw-Hill.

Campbell, J. P., & Campbell, R. J. (1988). *Productivity in organizations: New perspectives from industrial and organizational psychology.* San Francisco, USA: Jossey-Bass.

Campbell, J. P., McCloy, R. A., Oppler, S. H., & Sager, C. E. (1993). A theory of performance. In Schmitt, N., & Borman, W. C. (Eds.), *Personnel selection in organizations* (pp. 35-70). San Francisco, USA: Jossey-Bass.

Campbell, J. P., Gasser, M. B., & Oswald, F. L. (1996). The substantive nature of job performance variability. In Murphy, K. R. (Ed.), *Individual differences and behavior in organizations* (pp. 258-299). San Francisco, USA: Jossey-Bass.

Campos, R. C., Besser, A., & Blatt, S. J. (2010). The mediating role of self-criticism and dependency in the association between perceptions of maternal caring and depressive symptoms. *Depression and Anxiety, 27*(12), 1149-1157.

Campos, R. C., Besser, A., Ferreira, R., & Blatt, S. J. (2012). Self-criticism, neediness, and distress among women undergoing treatment for breast cancer: A preliminary test of the moderating role of adjustment to illness. *International Journal of Stress Management, 19*(2), 151-174.

Campos, R. C., Besser, A., & Blatt, S. J. (2013). Recollections of parental rejection, self-criticism and depression in suicidality. *Archives of Suicide Research, 17*(1), 58-74.

Carayon, P. (1993). Effect of electronic performance monitoring on job design and worker stress: Review of the literature and conceptual model. *Human Factors, 35*, 385-395.

Carson, K. P., Cardy, R. L., & Dobbins, G. H. (1991). Performance appraisal as effective management or deadly management disease: Two initial empirical investigations. *Group and Organization Management, 16*(2), 143-159.

Carstens, E., & G. P. Moberg. (2000). Recognizing pain and distress in laboratory animals. *Institute for Laboratory Animal Research, 41*(2), 62-71. doi: 10.1093/ilar.41.2.62

Caspi, A., & Roberts, B. W. (2001). Personality development across the life course: The argument for change and continuity. *Psychological Inquiry, 12*(2), 49-66.

Castilho, P., Pinto-Gouveia, J., & Duarte, J. (2015). Exploring self-criticism: confirmatory factor analysis of the FSCRS in clinical and nonclinical samples. *Clinical Psychology and Psychotherapy, 22*(2), 153-164.

Cavanaugh, M. A., Boswell, W. R., Roehling, M. V., & Boudreau, J. W. (2000). An empirical examination of self-reported work stress among U.S. managers. *Journal of Applied Psychology, 85*, 65–74.

Chang, E. C. (2008). *Self-criticism and self-enhancement: Theory, research, and clinical implications*. Massachusetts, USA: American Psychological Association.

Chapman, B., Duberstein, P., & Lyness, J. M. (2007). Personality traits, education, and health-related quality of life among older adult primary care patients. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 62*(6), 343-352.

Chapman, B. P., Duberstein, P. R., Sörensen, S., & Lyness, J. M. (2007). Gender differences in Five Factor Model personality traits in an elderly cohort. *Personality and Individual Differences, 43*(6), 1594-1603.

Chauhan, N. (2014). *Nursing in Pakistan: Handle with care*. The Express Tribune. Retrieved from http://www.tribune.com.pk

Chin, W. W., & Newsted, P. R. (1999). Structural equation modeling analysis with small samples using partial least squares. *Statistical Strategies for Small Sample Research*, *1*(1), 307-341.

Chioqueta, A. P., & Stiles, T. C. (2005). Personality traits and the development of depression, hopelessness, and suicide ideation. *Personality and Individual Differences*, *38*(6), 1283-1291.

Chiu, S. F., Yeh, S. P., & Huang, T. C. (2015). Role stressors and employee deviance: The moderating effect of social support. *Personnel Review*, *44*(2), 308-324.

Choi, Y. M., Lee, D. G., & Lee, H. K. (2014). The effect of self-compassion on emotions when experiencing a sense of inferiority across comparison situations. *Procedia-Social and Behavioral Sciences*, *114*(1), 949-953.

Chung, M. S. (2016). Relation between lack of forgiveness and depression: the moderating effect of self-compassion. *Psychological Reports*, *119*(3), 573-585.

Clark, D. A., Steer, R. A., & Beck, A. T. (1994). Common and specific dimensions of self-reported anxiety and depression: Implications for the cognitive and tripartite models. *Journal of Abnormal Psychology*, *103*(4), 645-654.

Clark, L. A., Watson, D., & Mineka, S. (1994). Temperament, personality, and the mood and anxiety disorders. *Journal of Abnormal Psychology*, *103*(1), 103-116.

Clark, L. A., & Watson, D. (1999). Temperament: A new paradigm for trait psychology. *Handbook of personality: Theory and Research*, *2*(1), 399-423.

Clark, L. A. (2005). Temperament as a unifying basis for personality and psychopathology. *Journal of Abnormal Psychology*, *114*(4), 505-521.

Clausen, T., Nielsen, K., Carneiro, I. G., & Borg, V. (2012). Job demands, job resources and long-term sickness absence in the Danish eldercare services: a prospective analysis of register-based outcomes. *Journal of Advanced Nursing, 68*(1), 127-136.

Cloninger, C. R. (1986). A unified biosocial theory of personality and its role in the development of anxiety states. *Psychiatric Developments, 3*(2), 167-226.

Coetzer, C. F., & Rothmann, S. (2007). Job demands, job resources and work engagement of employees in a manufacturing organization. *Southern African Business Review, 11*(1), 17-32.

Coggan, C., Norton, R., Roberts, I., & Hope, V. (1994). Prevalence of back pain among nurses. *The New Zealand Medical Journal, 107*(983), 306-308.

Cohen-Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes, 86*(2), 278-321.

Cohen, S. (1980). Aftereffects of stress on human performance and social behavior: A review of research and theory. *Psychological Bulletin, 88*(1), 82-108.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310-357.

Cohen, J. R., Young, J. F., Gibb, B. E., Hankin, B. L., & Abela, J. R. (2014). Why are anxiety and depressive symptoms comorbid in youth? A multi-wave, longitudinal examination of competing etiological models. *Journal of Affective Disorders, 161*(4), 21-29.

Collins, J. W., & Owen, B. D. (1996). NIOSH research initiatives to prevent back injuries to nursing assistants, aides, and orderlies in nursing homes. *American Journal of Industrial Medicine, 29*(4), 421-424.

Cook, V. (2003). Subjective wellbeing: An integration of depression, stress, and homeostasis theory. (Doctoral thesis. Deakin University, Melbourne, Australia).

Cooper, C. L., Dewe, P.J., & O'Driscoll, M.P. (2001). *Organizational Stress: A Review and Critique of Theory, Research, and Applications*. Thousand Oaks, California: Sage Publications.

Cooper, D. R., & Schindler, P. S. (2013). *Business research methods* (12th ed.). New York, USA: McGraw-Hill Companies, Inc.

Corveleyn, J., Luyten, P., & Blatt, S. J. (2005). *The theory and treatment of depression: Towards a dynamic interactionism model*. New York, USA: Routledge.

Costa, P. T., & McCrae, R. R. (1985). *The NEO personality inventory: Manual, form S and form R*. Psychological Assessment Resources.

Costa, P. T., & McCrae, R. R. (1985). Persons, Places, and Personality: Career Assessment Using the Revised NEO personality inventory. *Journal of Career Assessment, 3*(2), 123-139.

Costa, P. T., & McCrae, R. R. (1992). Four ways five factors are basic. *Personality and Individual Differences*, *13*(6), 653-665.

Costea, N. (2011). Are you my nurse? Life and death in the hospice fast lane. *Nursing Forum, 46*(4), 251-255.

Cox, B. J., Rector, N. A., Bagby, R. M., Swinson, R. P., Levitt, A. J., & Joffe, R. T. (2000). Is self-criticism unique for depression? A comparison with social phobia. *Journal of Affective Disorders, 57*(1), 223-228.

Cox, B. J., Enns, M. W., & Clara, I. P. (2002). The multidimensional structure of perfectionism in clinically distressed and college student samples. *Psychological Assessment, 14*(3), 365-373.

Cox, B. J., MacPherson, P. S., Enns, M. W., & McWilliams, L. A. (2004). Neuroticism and self-criticism associated with posttraumatic stress disorder in a nationally representative sample. *Behavior Research and Therapy*, *42*(1), 105-114.

Cox, T. & Mackay, C.J. (1981). A Transactional approach to occupational stress. In Corlett, E. N., & Richardson, J. (Eds.), *Stress, Work Design and Productivity*. Chichester, United Kingdom: Wiley & Sons.

Cox, T. (1987). Stress, coping and problem solving. *Work and Stress, 1*(1), 5-14.

Cox, T., & Ferguson, E. (1991). Individual Differences, Stress and Coping. In Cooper, C. L., & Payne, R. (Eds.). *Personality and Stress: Individual Differences in the Stress Process*. New Jersey, USA: John Wiley and Sons, Inc.

Cox, T. & Griffiths, A. (1995). The nature and measurement of work stress: theory and practice. In Wilson, J. R., & Corlett, E. N. (Eds.), *Evaluation of human work: A practical ergonomics methodology.* London, United Kingdom: Taylor & Francis.

Cox, T., Griffiths, A. & Rial-Gonzalez, E. (2000). *Research on Work-Related Stress*. Luxembourg: Office for Official Publications of the European Communities.

Crawford, E. R., LePine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: a theoretical extension and meta-analytic test. *Journal of Applied Psychology, 95*(5), 834-848.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*(3), 297-334.

Cycyota, C.S. & Harrison, D.A. (2006). What (not) to expect when surveying executives: A meta-analysis of top manager response rates and techniques over time. *Organizational Research Methods, 9*(2), 133-160.

Czaja, S. J. (1995). Aging and work performance. *Review of Public Personnel Administration, 15*(2), 46-61.

Damit, A. (2007). *Identifying sources of stress and leave of job satisfaction amongst registered nurses within the first three years of work as a registered nurse in Brunei Darussalam* (Master's Thesis). Queensland University of Technology, School of Nursing, Brisbane, Australia.

Danish, R. Q., Ahmad, F., & Khan, M. A. (2014). Determinants of Employee Engagement in Service Sector of Pakistan. *Universal Journal of Management, 2*(2), 64-71.

Dawson, E. C. (2004). The relationship of stress levels to wellness practices among community college presidents. (Doctoral dissertation). Retrieved from http://libraries.etsu.edu/record=b1586782~S1a

Dawson, J. F. (2014). Moderation in management research: What, why, when, and how. *Journal of Business and Psychology, 29*(1), 1-19.

De Croon, E. M., Blonk, R. W., De Zwart, B. C., Frings-Dresen, M. H., & Broersen, J. P. (2002). Job stress, fatigue, and job dissatisfaction in Dutch lorry drivers: towards an occupation specific model of job demands and control. *Occupational and Environmental Medicine*, *59*(6), 356-361.

De Jonge, J., Mulder, M. J. G. P., & Nijhuis, F. J. N. (1999). The incorporation of different demand concepts in the job demand-control model: effects on health care professionals. *Social Science and Medicine, 48*(9), 1149–1160.

De Jonge, J., Bosma, H., Peter, R. & Siegrist, J. (2000). Job strain, effort-reward imbalance and employee well-being: a large-scale cross-sectional study. *Social Science and Medicine*, *50*(9), 1317-1327.

De Jonge, J., & Dormann, C. (2003). The DISC model: Demand-induced strain compensation mechanisms in job stress. In Dollard, M. F., Winefield, A. H., & Winefield, H. R. (Eds.), *Occupational stress in the service professions* (pp. 43-74). London, United Kingdom: Taylor & Francis.

De Jonge, J., & Dormann, C. (2004). Matching demands, resources, and strains: A test of the Demand-Induced Strain Compensation Model in four different countries. *International Journal of Behavioral Medicine, 11*, 187-200.

De Jonge, J., & Dormann, C. (2006). Stressors, resources, and strain at work: A longitudinal test of the Triple Match Principle. *Journal of Applied Psychology, 91*(6), 1359-1374.

De Jonge, J., Dormann, C., Van Vegchel, N., Von Nordlheim, T., Dollard, S., & Van den Tooren, M. (2009). *The DISC questionnaire 2.1*. Eindhoven, Netherlands: Eindhoven University of Technology.

De Lange, A. H., Taris, T. W., Kompier, M. A., Houtman, I. L., & Bongers, P. M. (2003). The very best of the millennium: longitudinal research and the demand-control-(support) model. *Journal of Occupational Health Psychology*, *8*(4), 282-305.

Deihl, L. M. (2009). The relevance of the supervisory working alliance to burnout and vigor among residential frontline staff (Unpublished Doctoral thesis. University at Albany, State University of New York, New York).

DeLucia, P.R., Ott, T.E., & Patrick A. Palmieri, P. A. (2009). Performance in nursing. *Reviews of Human Factors and Ergonomics*, *5*(1), 1-40.

Demerouti, E., & Bakker, A. B. (2011). The job demands-resources model: Challenges for future research. *SA Journal of Industrial Psychology, 37*(2), 1-9.

Demerouti, E., & Geurts, S. (2004). Towards a typology of work-home interaction. *Community, Work and Family, 7*(3), 285-309.

Demerouti, E., Bakker, A.B., Nachreiner, F. and Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*(3), 499-512.

Demerouti, E., Xanthopoulou, D., Tsaousis, I., & Bakker, A.B. (2014). Disentangling Task and Contextual Performance: A Multitrait-Multimethod Approach. *Journal of Personnel Psychology*, *13*(2), 59-69.

DeNeve, K. M., & Cooper, H. (1998). The happy personality: a meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin*, *124*(2), 197-229.

Denissen, J. J., & Penke, L. (2008). Neuroticism predicts reactions to cues of social inclusion. *European Journal of Personality*, *22*(6), 497-517.

Derryberry, D., & Reed, M. A. (1994). Temperament and attention: Orienting toward and away from positive and negative signals. *Journal of Personality and Social Psychology*, *66*(6), 1128-1139.

Desa, A., Yusooff, F., Ibrahim, N., Kadir, N. B. Y. A., & Ab Rahman, R. M. (2014). A study of the relationship and influence of personality on job stress among academic administrators at a university. *Procedia-Social and Behavioral Sciences*, *114*(1), 355-359.

Dewe, P. (1991). Primary Appraisal, secondary appraisal and coping: their role in stressful work encounter. *Journal of Occupational Psychology, 64*(4), 331-351.

Dewe, P., & Trenberth, L. (2004). Work stress and coping: drawing together theory and practice. *British Journal of Guidance and Counseling, 32*(2), 143-156.

Diener, E., & Fujita, F. (1995). Resources, personal strivings, and subjective well-being: a nomothetic and idiographic approach. *Journal of Personality and Social Psychology*, *68*(5), 926-935.

Diestel, S., & Schmidt, K.-H. (2011). Costs of simultaneous coping with emotional dissonance and self-control demands at work: Results from two German samples. *Journal of Applied Psychology, 96*(3), 643-653.

Dillman, D.A. (1991). The design and administration of mail surveys. *Annual Review of Sociology, 17*(1), 224-249.

Doerig, N., Schlumpf, Y., Spinelli, S., Späti, J., Brakowski, J., Quednow, B. B., Scifritz, E., & Grosse Holtforth, M. (2013). Neural representation and clinically relevant moderators of individualised self-criticism in healthy subjects. *Social Cognitive and Affective Neuroscience*, *9*(9), 1333-1340.

Dollard, M. F., Tuckey, M. R., & Dormann, C. (2012). Psychosocial safety climate moderates the job demand–resource interaction in predicting workgroup distress. *Accident Analysis and Prevention, 45*(1), 694-704.

Doncevic, S., Romelsjo, A., & Theorell, T. (1998). Comparison of stress, job satisfaction, perception of control, and health among district nurses in Stockholm and prewar Zagreb. *Scandinavian Journal of Public Health*, *26*(2), 106-114.

Doran, D. M. (Ed.). (2003). *Nursing-sensitive outcomes: State of the science.* Sudbury, MA: Jones and Bartlett.

DSM-V (American Psychiatric Association) (2013). *Diagnostic and Statistical Manual of Mental Disorders (DSM)* (5th Ed). Arlington, VA: American Psychiatric Publishing.

Duggan, C. F., Lee, A. S., & Murray, R. M. (1990). Does personality predict long-term outcome in depression? *The British Journal of Psychiatry*, *157*(1), 19-24.

Duggan, C., Sham, P., Lee, A., Minne, C., & Murray, R. (1995). Neuroticism: a vulnerability marker for depression evidence from a family study. *Journal of Affective Disorders*, *35*(3), 139-143.

Dunkley, D. M., Zuroff, D. C., & Blankstein, K. R. (2003). Self-critical perfectionism and daily affect: Dispositional and situational influences on stress and coping. *Journal of Personality and Social Psychology*, *84*(1), 234-252.

Dunkley, D. M., Sanislow, C. A., Grilo, C. M., & McGlashan, T. H. (2006). Perfectionism and depressive symptoms 3 years later: Negative social interactions, avoidant coping, and perceived social support as mediators. *Comprehensive Psychiatry*, *47*(2), 106-115.

Durbin, C. E., & Shafir, D. M. (2008). Emotion regulation and risk for depression. In Abela, J. R. Z., & Hankin, B. L. (Eds.). *Handbook of Depression in Children and Adolescents* (pp. 149-176). New York, USA: Guilford Press.

Dutton, J., Lilius, J. M., & Kanov, J. (2008). The transformative potential of compassion at work. In Piderit, S. K., Cooperrider, D. L., & Fry, R. E. (Eds.), *Handbook of Transformative Cooperation: New Designs and Dynamics* (pp. 107-126). Palo Alto, USA: Stanford University Press.

Dwyer, D. J., & Ganster, D. C. (1991). The effects of job demands and control on employee attendance and satisfaction. *Journal of Organizational Behavior*, *12*(7), 595-608.

Dwyer, D. J., & Fox, M. L. (2006). The relationship between job demands and key performance indicators: Moderating effects of job resources in call centers. *Journal of Business and Management*, *12*(2), 127-145.

Easterby-Smith, M., Thorpe, R., & Jackson, P. R. (2015). *Management and business research* (5th ed). London, United Kingdom: Sage Publications.

Eaves, L. J., Eysenck, H. J., & Martin, N. G. (1989). *Genes, culture and personality: An empirical approach*. Massachusetts, USA: Academic Press.

Eberhardt, K., Larsson, B. M., & Nived, K. (1993). Psychological reactions in patients with early rheumatoid arthritis. *Patient Education and Counseling*, *20*(2-3), 93-100.

Eby, L. T., Casper, W. J., Lockwood, A., Bordeaux, C., & Brinley, A. (2005). Work and family research in IO/OB: Content analysis and review of the literature (1980-2002). *Journal of Vocational Behavior*, *66*(1), 124-197.

Edwards J.R., Cooper C.L. (2013). The Person-Environment Fit Approach to Stress: Recurring Problems and Some Suggested Solutions. In Cooper, C. L. (Eds.), *From Stress to Wellbeing Volume 1* (pp. 91-108). London, UK: Palgrave Macmillan.

Ehret, A.M., Joormann, J., & Berking, M. (2015). Examining risk and resilience factors for depression: The role of self-criticism and self-compassion. *Cognition and Emotion, 29*(8), 1496-1504.

Ehring, T., Fischer, S., Schnülle, J., Bösterling, A., & Tuschen-Caffier, B. (2008). Characteristics of emotion regulation in recovered depressed versus never depressed individuals. *Personality and Individual Differences*, *44*(7), 1574-1584.

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology, 71*(3), 500-507.

Elahi, A. (2013). *Health Facilities for Rural Pakistan. Pakistan Health Policy Forum, Heartfile.* Retrieved from http://www.heartfile.org/blog/1038

Ellis, J. (2008). Managing performance. *Nursing Management, 15*(1), 28-33.

Engels, J. A., Van Der Gulden, J. W. J., Senden, T. F., Hertog, C., Kolk, J. J., & Binkhorst, R. A. (1994). Physical work load and its assessment among the nursing staff in nursing homes. *Journal of Occupational and Environmental Medicine, 36*(3), 338-345.

Engkvist, I. L., Hagberg, M., Hjelm, E. W., Menckel, E., Ekenvall, L., & PROSA Study Group. (1998). The accident process preceding overexertion back injuries in nursing personnel. *Scandinavian Journal of Work, Environment & Health, 24*(5), 367-375.

Engkvist, I. L., Hjelm, E. W., Hagberg, M., Menckel, E., & Ekenvall, L. (2000). Risk indicators for reported over-exertion back injuries among female nursing personnel. *Epidemiology, 11*(5), 519-522.

Estryn-Behar, M., Kaminski, M., Peigne, E., Bonnet, N., Vaichere, E., Gozlan, C., Azoulay, S., & Giorgi, M. (1990). Stress at work and mental health status among female hospital workers. *British Journal of Industrial Medicine, 47*(1), 20-28.

Evanoff, B. A., Bohr, P. C., & Wolf, L. D. (1999). Effects of a participatory ergonomics team among hospital orderlies. *American Journal of Industrial Medicine, 35*(4), 358-365.

Evanoff, B., Wolf, L., Aton, E., Canos, J., & Collins, J. (2003). Reduction in injury rates in nursing personnel through introduction of mechanical lifts in the workplace. *American Journal of Industrial Medicine, 44*(5), 451-457.

Eysenck, H. J. (1957). Dynamics of anxiety and hysteria. *Bulletin of the British Psychological Society, 32*(1), 51-62.

Eysenck, H. J. (1967). *Behavior therapy and the neuroses*. Oxford, United Kingdom: Pergamon Press.

Eysenck, H. J., & Eysenck, S. B. G. (1975). *Manual of the Eysenck Personality Questionnaire (Junior and Adult)*. Hodder and Stoughton.

Falco, A., Girardi, D., Kravina, L., Trifiletti, E., Bartolucci, G. B., Capozza, D., & Nicola, A. (2013). The mediating role of psychophysic strain in the relationship between workaholism, job performance, and sickness absence: A longitudinal study. *Journal of Occupational and Environmental Medicine, 55*(11), 1255-1261.

Falkum, E., Olff, M., & Aasland, O.G. (1997). Revisiting the factor structure of the ways of coping checklist: a three-dimensional view of the problem-focused coping scale. A

study among Norwegian physicians. *Personality and Individual Differences, 22*(2), 257-267.

Fanous, A., Gardner, C. O., Prescott, C. A., Cancro, R., & Kendler, K. S. (2002). Neuroticism, major depression and gender: a population-based twin study. *Psychological Medicine, 32*(4), 719-728.

Fanous, A. H., Neale, M. C., Aggen, S. H., & Kendler, K. S. (2007). A longitudinal study of personality and major depression in a population-based sample of male twins. *Psychological Medicine, 37*(8), 1163-1172.

Farber, B. A. (1991). *Crisis in education: Stress and burnout in the American teacher*. San Francisco, USA: Jossey-Bass.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*(4), 1149-1160.

Feldstein, A., Valanis, B., Vollmer, W., & Stevens, N. Overton, E. (1993). The back injury prevention project pilot study. *Journal of Occupational Medicine, 35*(1), 114-119.

Fernandez-Lopez, J. A., Martin-Payo, R., Fernandez-Fidalgo, M., & Rodel, A. (2006). Analisis factorial confirmatorio de la version espanola del cuestionario Effort-Reward Imbalance, de medida del estress laboral. *Atencion Primaria, 38*(8), 465-466.

Ferreira, C., Matos, M., Duarte, C., & Pinto-Gouveia, J. (2014). Shame Memories and Eating Psychopathology: The Buffering Effect of Self-Compassion. *European Eating Disorders Review, 22*(6), 487-494.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). London, United Kingdom: Sage Publications, Inc.

Fila, M. J. (2013). Stressful Work and Turnover: The Mediating Role of Psychological Strain (Doctoral dissertation, Ohio University). Retrieved from https://etd.ohiolink.edu/

Fink, A. (2002). *How to sample in surveys* (2nd ed.). London, United Kingdom: Sage Publications, Inc.

Firestone, R. W. (1988). *Voice therapy: A psychotherapeutic approach to self-destructive behavior*. California, USA: Glendon Association.

Flanagan, N. A. (2006). Testing the relationship between job stress and satisfaction in correctional nurses. *Nursing Research, 55*(5), 316-327.

Flett, G. L., & Hewitt, P. L. (2002). *Perfectionism: Theory, research, and treatment*. Washington, D. C., USA: American Psychological Association.

Florio, G. A., Donnelly, J. P., & Zevon, M. A. (1998). The structure of work-related stress and coping among oncology nurses in high-stress medical settings: a transactional analysis. *Journal of Occupational Health Psychology*, *3*(3), 227-242.

Folkman, S., & Lazarus, R.S. (1980). An Analysis of coping in a Middle- Aged Community sample. *Journal of Health and Social Behavior, 21*(3), 219-239.

Folkman, S., Lazarus, R. S., Gruen, R. J., & DeLongis, A. (1986). Appraisal, coping, health status, and psychological symptoms. *Journal of Personality and Social Psychology*, *50*(3), 571-579.

Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing and Research, 18*(1), 39-50.

Fowler, F. J. (2002). *Survey research methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Frances, A. (2000). *Diagnostic and statistical manual of mental disorders* (4th edition). Washington, D.C, USA: American Psychiatric Association.

French, J. R., & Kahn, R. L. (1962). A programmatic approach to studying the industrial environment and mental health. *Journal of Social Issues, 18*(3), 1-47.

French, J. R. P. Jr. (1973). Person-role fit. *Occupational Mental Health, 3*(1), 15-20.

French, J. R. P. Jr, Caplan, R.D., & Harrison, R.V. (1982). *The mechanisms of job stress and strain*. London, United Kingdon: John Wiley and Sons Inc.

Frese, M., & Zapf, D. (1999). On the Importance of the objective environment in stress and attribution theory. Counterpoint to Perrewe and Zellars. *Journal of Organizational Behavior, 20*(5), 761-765.

Frese, M. (2008). The changing nature of work. In Chmiel, N. (Eds.), *An Introduction to Work and Organizational Psychology: A European Perspective* (pp. 397-413). New York, USA: John Wiley and Sons, Inc.

Fried, Y., Ben-David, H. A., Tiegs, R. B., Avital, N., & Yeverechyahu, U. (1998). The interactive effect of role conflict and role ambiguity on job performance. *Journal of Occupational and Organizational Psychology, 71*(1), 19-27.

Friend, K. E. (1982). Stress and performance: Effects of subjective work load and time urgency. *Personnel Psychology, 35*(3), 623-633.

Frone, M. R., Yardley, J. K., & Markel, K. S. (1997). Developing and testing an integrative model of the work-family interface. *Journal of Vocational Behavior, 50*(2), 145-167.

Ganster, D. C., & Fusilier, M. R. (1989). Control in the workplace. In Cooper, C. L., & Robertson, I. T. (Eds.), *International Review of Industrial and Organizational Psychology* (pp. 235-280). Oxford, England: John Wiley and Sons, Inc.

Ganster, D. C. (1995). Interventions for building healthy organizations: Suggestions from the stress research literature. In Murphy, L. R., Hurrell, Jr. J. J., Sauter, S. L., & Keita, G. P. (Eds.), *Job stress interventions* (pp. 323-336).

Garg, A., & Moore, J. S. (1992). Epidemiology of low-back pain in industry. *Occupational Medicine*, *7*(4), 593-608.

Geiger-brown, J., Muntaner, C., Lipscomb, J., & Trinkoff, A. (2004). Demanding work schedules and mental health in nursing assistants working in nursing homes. *Work and Stress*, *18*(4), 292-304.

George, J. M., & Brief, A. P. (1992). Feeling good-doing good: A conceptual analysis of the mood at work-organizational spontaneity relationship. *Psychological Bulletin*, *112*(2), 310-329.

George, J. M., & Zhou, J. (2001). When openness to experience and conscientiousness are related to creative behavior: An interactional approach. *Journal of Applied Psychology*, *86*(3), 513-524.

Germer, C. (2009). *The mindful path to self-compassion: Freeing yourself from destructive thoughts and emotions*. New York, USA: Guilford Press.

Gershuny, B. S., & Sher, K. J. (1998). The relation between personality and anxiety: findings from a 3-year prospective study. *Journal of Abnormal Psychology*, *107*(2), 252-262.

Ghaddar, A., Ronda, E., & Nolasco, A. (2011). Work ability, psychosocial hazards and work experience in prison environments. *Occupational Medicine*, *61*(7), 503-508.

Ghali, E. M. A. (2015). Self-Compassion as a Mediator and Moderator of the Relationship between Psychological Suffering and Psychological Well-being among Palestinian Widowed Women. *Self*, *5*(24), 66-76.

Gianakos, I. (2002). Predictors of Coping with Work Stress: The Influences of sex, gender role, social desirability, and locus of control. *Sex Roles, 46*(5-6), 149-158.

Gibbons, C., Dempster, M., & Moutray, M. (2008). Stress and eustress in nursing students. *Journal of Advanced Nursing, 61*(3), 282-290.

Gilbert, P. (1998). What is shame? Some core issues and controversies. In Gilbert, P., & Andrews, B. (Eds.), *Series in affective science. Shame: Interpersonal behavior, psychopathology, and culture* (pp. 3-38). New York, USA: Oxford University Press.

Gilbert, P. (2000). The relationship of shame, social anxiety and depression: The role of the evaluation of social rank. *Clinical Psychology and Psychotherapy*, *7*(3), 174-189.

Gilbert, P., Clarke, M., Hempel, S., Miles, J. N., & Irons, C. (2004). Criticizing and reassuring oneself: An exploration of forms, styles and reasons in female students. *British Journal of Clinical Psychology*, *43*(1), 31-50.

Gilbert, P. (Ed.). (2005). *Compassion: Conceptualizations, research and use in psychotherapy*. London, United Kingdom: Routledge.

Gilbert, P., & Irons, C. (2005). Focused therapies and compassionate mind training for shame and self-attacking. In Gilbert, P. (Ed.) *Compassion: Conceptualizations, research and use in psychotherapy* (pp. 263-325). London, United Kingdom: Routledge.

Gilbert, P., & Procter, S. (2006). Compassionate mind training for people with high shame and self-criticism: Overview and pilot study of a group therapy approach. *Clinical Psychology and Psychotherapy*, *13*(6), 353-379.

Gilbert, P. (2009). Introducing compassion-focused therapy. *Advances in Psychiatric Treatment*, *15*(3), 199-208.

Gilbert, P., & Irons, C. (2009). Shame, self-criticism, and self-compassion in adolescence. In Allen, N. B., & Sheeber, L. B. (Eds.). (2008). *Adolescent emotional development and the emergence of depressive disorders* (pp. 195-214). Cambridge, United Kingdom: Cambridge University Press.

Gilbert, P., McEwan, K., Irons, C., Bhundia, R., Christie, R., Broomhead, C., & Rockliff, H. (2010). Self-harm in a mixed clinical population: The roles of self-criticism, shame, and social rank. *British Journal of Clinical Psychology*, *49*(4), 563-576.

Gilbert, P., McEwan, K., Matos, M., & Rivis, A. (2011). Fears of compassion: Development of three self-report measures. *Psychology and Psychotherapy: Theory, Research and Practice*, *84*(3), 239-255.

Gilbert, P., & Mascaro, J. (2017). Compassion Fears, Blocks and Resistances: An Evolutionary Investigation. In Seppälä, E. M., Simon-Thomas, E., Brown, S. L., Worline, M. C., Cameron, C. D., & Doty, J. R. (Eds.), *The Oxford Handbook of Compassion Science* (pp. 399-418). Oxford, United Kingdom: Oxford University Press.

Gill, J. & Johnson, P. (2002). *Research Methods for Managers* (3rd ed.). London, United Kingdom: Sage Publications.

Goldberg, D. P. (1972). *Detecting psychiatric illness by questionnaire* (Maudsley Monograph no. 21). London, United Kingdom: Oxford University Press.

Goldberg, L. R. (2001). Analyses of Digman's child-personality data: Derivation of Big-Five factor scores from each of six samples. *Journal of Personality*, *69*(5), 709-744.

Goldstein, J., & Kornfield, J. (1987). *Seeking the heart of wisdom: The path of insight meditation*. Boston, USA: Shambhala.

Gomez, R., & Francis, L. M. (2003). Generalized anxiety disorder: Relationships with Eysenck's, Gray's and Newman's theories. *Personality and Individual Differences*, *34*(1), 3-17.

Goodin, H. J. (2003). The nursing shortage in the United States of America: An integrative review of the literature. *Journal of Advanced Nursing, 43*(4), 335-343.

Goodman, S. A., & Svyantek, D. J. (1999). Person-organization fit and contextual performance: Do share values matter? *Journal of Vocational Behavior*, *55*(2), 254-275.

Göransson, K., Ehrenberg, A., Marklund, B., & Ehnfors, M. (2005). Accuracy and concordance of nurses in emergency department triage. *Scandinavian Journal of Caring Sciences, 19*(4), 432-438.

Gordon, H. J., Demerouti, E., Le Blanc, P. M., Bakker, A. B., Bipp, T., & Verhagen, M. A. (2018). Individual job redesign: job crafting interventions in healthcare. *Journal of Vocational Behavior, 104*(1), 98-114.

Gorgievski, M. J., & Hobfoll, S. E. (2008). Work can burn us out or fire us up: Conservation of resources in burnout and engagement. In Halbesleben, J. R. B. (Ed.), *Handbook of stress and burnout in health care* (pp. 7-22). New York, USA: Nova Science Publishers, Inc.

Gosling, S. D. (2001). From mice to men: what can we learn about personality from animal research? *Psychological Bulletin*, *127*(1), 45-86.

Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality*, *37*(6), 504-528.

Gottlieb, B. H. (2000). Selecting and planning support interventions. In Cohen, S., Underwood, L. G., & Gottlieb, B. H. (Eds.). (2000). *Social support measurement and*

intervention: A guide for health and social scientists (pp.195-220). Oxford, United Kingdom: Oxford University Press.

Gramstad, T. O., Gjestad, R., & Haver, B. (2013). Personality traits predict job stress, depression and anxiety among junior physicians. *BMC Medical Education, 13*(1), 150-159.

Gray, J. A. (1981). A critique of Eysenck's theory of personality. In Eysenck, H. J. (Ed.), *A model for personality* (pp. 246-276). Berlin, Germany: Springer Science & Business Media.

Greenslade, J. H., & Jimmieson, N. L. (2007). Distinguishing between task and contextual performance for nurses: Development of a job performance scale. *Journal of Advanced Nursing, 58*(6), 602-611.

Greer, C. R., & Castro, M. A. D. (1986). The relationship between perceived unit effectiveness and occupational stress: The case of purchasing agents. *The Journal of Applied Behavioral Science, 22*(2), 159-175.

Griffin, J. M., Greiner, B. A., Stansfeld, S. A., & Marmot, M. (2007). The effect of self-reported and observed job conditions on depression and anxiety symptoms: a comparison of theoretical models. *Journal of Occupational Health Psychology, 12*(4), 334-349.

Griffiths, A. (1998). The psychosocial work environment. In McCaig, R. C., & Harrington, M. J. (Eds.) *The changing nature of occupational health* (pp.213-232). London, United Kingdom: Health and Safety Executive.

Gruen, R. J., Silva, R., Ehrlich, J., Schweitzer, J. W., & Friedhoff, A. J. (1997). Vulnerability to stress: Self-criticism and stress-induced changes in biochemistry. *Journal of Personality, 65*(1), 33-47.

Guglielmi, D., Simbula, S., Schaufeli, W. B., & Depolo, M. (2012). Self-efficacy and workaholism as initiators of the job demands-resources model. *Career Development International*, *17*(4), 375-389.

Guidice, R. M., & Mero, N. P. (2012). Hedging their bets: A longitudinal study of the trade-offs between task and contextual performance in a sales organization. *Journal of Personal Selling and Sales Management, 32*(4), 451-472.

Gunzler, D., Chen, T., Wu, P., & Zhang, H. (2013). Introduction to mediation analysis with structural equation modeling. *Shanghai Archives of Psychiatry, 25*(6), 390-394.

Haas, B. W., Omura, K., Constable, R. T., & Canli, T. (2007). Emotional conflict and neuroticism: personality-dependent activation in the amygdala and subgenual anterior cingulate. *Behavioral Neuroscience*, *121*(2), 249-256.

Hackman, J. R., & Oldham, G. R. (1980). *Work Redesign*. Reading, MA: Addison-Wesley.

Haghighatgou H. & Peterson C. (1995). Coping and depressive symptoms among Iranian students. *Journal of Social Psychology, 135*(2), 175-80.

Haider, G., Malik, H. A., & Iqbal, T. A. (2015). Predictors of work disengagement among nurses at public hospitals of Pakistan. *Rawal Medical Journal*, *40*(1), 111-115.

Hair, J. F., Money, A. H., Samouel, P., & Page, M. (2007). *Research methods for business.* West Sussex, USA: John Wiley and Sons, Inc.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). New York, USA: Prentice Hall.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139-152.

Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science, 40*(3), 414-433.

Hair, J. F., Gabriel, M., & Patel, V. (2014). AMOS covariance-based structural equation modeling (CB-SEM): guidelines on its application as a marketing research tool. *Brazilian Journal of Marketing, 13*(2), 44-55.

Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, *26*(2), 106-121.

Hair, J.F., Celsi, M., Money, A., Samouel, P., & Page, M. (2016). *Essentials of Business Research Methods* (3rd ed.). New York, USA: Routledge.

Hair, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, *1*(2), 107-123.

Hakanen, J. J., Bakker, A. B., & Demerouti, E. (2005). How dentists cope with their job demands and stay engaged: The moderating role of job resources. *European Journal of Oral Sciences, 113*(6), 479-487.

Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology, 43*(6), 495-513.

Halbesleben, J. R. B., & Wheeler, A. R. (2011). I owe you one: Coworker reciprocity as a moderator of the day-level exhaustion-performance relationship. *Journal of Organizational Behavior, 32*(4), 608-626.

Halkos, G., & Bousinakis, D. (2010). The effect of stress and satisfaction on productivity. *International Journal of Productivity and Performance Management, 59*(5), 415-431.

Halligan, P. (2006). Caring for patients of Islamic denomination: critical care nurses' experiences in Saudi Arabia. *Journal of Clinical Nursing, 15*(12), 1565–1573.

Halverson, C. F., Havill, V. L., Deal, J., Baker, S. R., Victor, J. B., Pavlopoulos, V., Besevegis, E., & Wen, L. (2003). Personality structure as derived from parental ratings of free descriptions of children: The Inventory of Child Individual Differences. *Journal of Personality*, *71*(6), 995-1026.

Hamid, S., Malik, A. U., Kamran, I., & Ramzan, M. (2014). Job satisfaction among nurses working in the private and public sectors: a qualitative study in tertiary care hospitals in Pakistan. *Journal of Multidisciplinary Healthcare, 7*(1), 25-35.

Hamwi, G. A., Rutherford, B. N., & Boles, J. S. (2011). Reducing emotional exhaustion and increasing organizational support. *Journal of Business & Industrial Marketing, 26*(1), 4-13.

Harper, C. (2015). *Organizations: Structures, processes and outcomes*. London, United Kingdom: Routledge.

Harris, J. H., & Berger, P. K. (1983). Antecedents of psychological stress. *Journal of Human Stress, 9*(2), 24-31.

Hatton, C., Brown, R., Caine, A., & Emerson, E. (1995). Stressors, coping strategies and stress-related outcomes among direct care staff in staffed houses for people with learning disabilities. *Mental Handicap Research, 8*(4), 252-271.

Häusser, J. A., Mojzisch, A., Niesel, M., & Schulz-Hardt, S. (2010). Ten years on: A review of recent research on the Job Demand–Control (-Support) model and psychological well-being. *Work and Stress*, *24*(1), 1-35.

Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling* [White paper]. Retrieved from http://www.afhayes.com/public/process2012.pdf

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, USA: Guilford Press.

Hayes, A. F., Preacher, K. J., & Myers, T. A. (2011). Mediation and the estimation of indirect effects in political communication research. In Bucy, E. P., & Holbert, R. L. (Eds.), (2010). *Sourcebook for political communication research: Methods, measures, and analytical techniques* (pp. 434-465). Philadelphia, USA: Taylor and Francis.

Hayes, B., Douglas, C., & Bonner, A. (2015). Work environment, job satisfaction, stress and burnout among haemodialysis nurses. *Journal of Nursing Management*, *23*(5), 588-598.

Hayward, R. D., Taylor, W. D., Smoski, M. J., Steffens, D. C., & Payne, M. E. (2013). Association of five-factor model personality domains and facets with presence, onset, and treatment outcomes of major depression in older adults. *The American Journal of Geriatric Psychiatry*, *21*(1), 88-96.

Health and Safety Executive (HSE) (2007). *HSE Management standards indicator tool*. Retrieved from http://www.hse.gov.uk/stress/standards/pdfs/indicatortool.pdf

Health and Safety Executive (HSE) (2007). *Managing the risk factors of work-related stress in Home Office headquarters and the Border and Immigration Agency*. Retrieved from http://www.homeoffice.gov.uk/hons/white-hon/hon041-2007.pdf?view=Binary

Hekman, D. R., Bigley, G. A., Steensma, H. K., & Hereford, J. F. (2009). Combined effects of organizational and professional identification on the reciprocity dynamic for professional employees. *The Academy of Management Journal, 52*(3), 506-526.

Henry, S. B. (1991). Clinical decision making of critical care nurses managing computer simulated tach dysrhythmias. *Heart and Lung, 20*(5), 469–477.

Hermanto, N., Zuroff, D. C., Kopala-Sibley, D. C., Kelly, A. C., Matos, M., Gilbert, P., & Koestner, R. (2016). Ability to receive compassion from others buffers the depressogenic effect of self-criticism: A cross-cultural multi-study analysis. *Personality and Individual Differences, 98*(1), 324-332.

Herzberg. F. (1966). *Work and the Nature of Man*. Cleveland, USA: World Publishing Company.

Hettema, J. M., Prescott, C. A., & Kendler, K. S. (2004). Genetic and environmental sources of covariation between generalized anxiety disorder and neuroticism. *American Journal of Psychiatry, 161*(9), 1581-1587.

Hettema, J. M., Kuhn, J. W., Prescott, C. A., & Kendler, K. S. (2006). The impact of generalized anxiety disorder and stressful life events on risk for major depressive episodes. *Psychological Medicine, 36*(6), 789-795.

Heuvel, M., Demerouti, E., & Peeters, M. C. (2015). The job crafting intervention: Effects on job resources, self-efficacy, and affective well-being. *Journal of Occupational and Organizational Psychology, 88*(3), 511-532.

Hink, L. K., Rhee, S. H., Corley, R. P., Cosgrove, V. E., Hewitt, J. K., Schulz-Heik, R. J., Lahey, B. B., & Waldman, I. D. (2013). Personality dimensions as common and

broadband-specific features for internalizing and externalizing disorders. *Journal of Abnormal Child Psychology*, *41*(6), 939-957.

Hirschfeld, R. M., Klerman, G. L., Lavori, P., Keller, M. B., Griffith, P., & Coryell, W. (1989). Premorbid personality assessments of first onset of major depression. *Archives of General Psychiatry, 46*(4), 345-350.

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513-524.

Hobfoll, S. E., & Freedy, J. (1993). Conservation of resources: A general stress theory applied to burnout. In Schaufeli, W. B., Maslach, C., & Marek, T. (Eds.), *Professional burnout: Recent developments in theory and research. Series in applied psychology: Social issues and questions* (pp. 299). Philadelphia, USA: Taylor & Francis.

Hobfoll, S. E. (1998). *The psychology and philosophy of stress, culture, and community*. New York, USA: Plenum.

Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology, 50*(3), 337-421.

Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology, 6*(4), 307-324.

Hobfoll, S. E., Johnson, R. J., Ennis, N., & Jackson, A. P. (2003). Resource loss, resource gain, and emotional outcomes among inner city women. *Journal of Personality and Social Psychology, 84*(3), 632-643.

Hobfoll, S. E. (2011). Conservation of resource caravans and engaged settings. *Journal of Occupational and Organizational Psychology, 84*(1), 116-122.

Hobgood, C., Villani, J., & Quattlebaum, R. (2005). Impact of emergency department volume on registered nurse time at the bedside. *Annals of Emergency Medicine, 46*(6), 481-489.

Holman, D., & Axtell, C. (2016). Can job redesign interventions influence a broad range of employee outcomes by changing multiple job characteristics? A quasi-experimental study. *Journal of Occupational Health Psychology, 21*(3), 284-295.

Holmes-Smith, P., Coote, L., & Cunningham, E. (2006). *Structural Equation Modelling: From the Fundamentals to Advanced Topics*. Melbourne, Australia: SREAMS.

Hood, A., Pulvers, K., Spady, T. J., Kliebenstein, A., & Bachand, J. (2015). Anxiety mediates the effect of acute stress on working memory performance when cortisol levels are high: a moderated mediation analysis. *Anxiety, Stress, & Coping, 28*(5), 545-562.

Hörmann, H. & Maschke, P. (1996). On the relation between personality and job performance of airline pilots. *The International Journal of Aviation Psychology, 6*(2), 171-178.

Hough, L. M., Eaton, N. K., Dunnette, M. D., Kamp, J. D. & McCloy, R. A. (1990). Criterion-related validities of personality constructs and the effect of response distortion on those validities. *Journal of Applied Psychology, 75*(5), 581-595.

Houtman, I. L. D., & Kompier, M. A. J. (1995). *Risk factors and occupational risk groups for work stress in the Netherlands*. Washington D.C., USA: American Psychological Association.

Hoyle, R. H. (2012). Introduction and Overview. In Hoyle, R. H. (Ed.), *Handbook of structural equation modeling* (pp. 3-16). New York, USA: The Guilford Press.

Huang, G. D., Feurstein, M., & Sauter, S. L. (2002). Occupational Stress and Work-Related Upper Extremity Disorders: Concepts and Models. *American Journal of Industrial Medicine, 41*(5), 298-314.

Hurrell, J. J. & McLaney, M. A. (1988). Exposure to job stress: A new psychometric instrument. *Scandinavian Journal of Work Environment and Health, 14*(1), 27-28.

IBM Corp. (2015). *IBM SPSS Statistics for Windows, Version 23.0*. New York, USA: IBM Corp.

Ilgen, D. R., & Favero, J. L. (1985). Limits in generalization from psychological research to performance appraisal processes. *Academy of Management Review, 10*(2), 311-321.

Insel, P. M., Roth, W., Irwin, J. D., & Burke, S. M. (2011). *Core concepts in health,* Canadian edition. Whitby, ON: McGraw-Hill Ryerson.

Jahangir, M., Kaleem, N., Khan, A., Jan, M. T., & Soherwardi, S. (2011). Effects of job stress on job performance and job satisfaction. *Interdisciplinary Journal of Contemporary Research in Business, 3*(7), 453-465.

Jamal, M. (1984). Job stress and job performance controversy: An empirical assessment. *Organizational Behavior and Human Performance, 33*(1), 1-21.

Jamal, M., & Baba, V. V. (1992). Shift work and department-type related to job stress, work attitudes and behavioral intentions: A study of nurses. *Journal of Organizational Behavior, 13*(5), 449-464.

Jamal, M. (2007). Job stress and job performance controversy revisited: An empirical examination in two countries. *International Journal of Stress Management, 14*(2), 175-187.

Jamal, M. (2011). Job stress, job performance and organizational commitment in a multinational company: An empirical study in two countries. *International Journal of Business and Social Science, 2*(20), 20-29.

James, K., Verplanken, B., & Rimes, K. A. (2015). Self-criticism as a mediator in the relationship between unhealthy perfectionism and distress. *Personality and Individual Differences*, *79*(1), 123-128.

James, L. R., Mulaik, S. A., & Brett, J. M. (2006). A tale of two methods. *Organizational Research Methods, 9*(2), 233-244.

Jang, S. (2015). *A Multilevel Examination of Cultural Moderators of the Job Demands-Resources Model* (Master's Thesis). University of South Florida.

Janowitz, I. L., Gillen, M., Ryan, G., Rempel, D., Trupin, L., Swig, L., Mullen, K., Rugulies, R., & Blanc, P. D. (2006). Measuring the physical demands of work in hospital settings: design and implementation of an ergonomics assessment. *Applied Ergonomics, 37*(5), 641-658.

Janssen, P. P. M., Schaufeli, W. B., & Houkes, I. (1999). Work-related and individual determinants of the three burnout dimensions. *Work and Stress, 13*(1), 74-86.

Jardine, R., Martin, N. G., Henderson, A. S., & Rao, D. C. (1984). Genetic covariation between neuroticism and the symptoms of anxiety and depression. *Genetic Epidemiology, 1*(2), 89-107.

Jawahar, I. M., & Ferris, G. R. (2011). A longitudinal investigation of task and contextual performance influences on promotability judgments. *Human Performance, 24*(3), 251-269.

Jehangir, M. (2011). Causes and effects of job stress on the performance and job satisfaction of paramedics of public sector hospitals (a case study of public sector hospitals of Peshawar) (Unpublished Doctoral Dissertation). Qurtaba University of Science & Information Technology, Peshawar, Pakistan.

Jehangir, M., Kaleem, N., Khan, A., Jan, M. T., & Soherwardi, S. (2011). Effects of job stress on job performance and job satisfaction. *Interdisciplinary Journal of Contemporary Research in Business, 3*(7), 453-465.

Jennings, B.M. (2008).Work Stress and Burnout among Nurses: Role of the Work Environment and Working Conditions. In Hughes, R. G. (Eds). (2008). *Patient Safety and Quality: An Evidence-Based Handbook for Nurses.* Rockville, USA: Agency for Healthcare Research and Quality.

Jex, S. M. (1998). *Stress and job performance: Theory, research, and implications for managerial practice. Advanced topics in organizational behavior*. Thousand Oaks, CA: Sage Publications Ltd.

Jex, S. M., & Elacqua, T. C. (1999). Time management as a moderator of relations between stressors and employee strain. *Work and Stress, 13*(2), 182-191.

Jimmieson, N. L., Terry, D. J., & Callan, V. J. (2004). A longitudinal study of employee adaptation to organizational change: The role of change-related information and change-related self-efficacy. *Journal of Occupational Health Psychology, 9*(1), 11-27.

John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In Pervin, L. A., & John, O. P. (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 102-138). New York, USA: Guilford Press.

Johnson, J.V., Hall, E.M. (1988). Job strain, workplace social support and cardiovascular disease: a cross-sectional study of a random sample of Swedish working population. *American Journal of Public Health, 78*(10), 1336-1342.

Johnson, D. M., Palmieri, P. A., Jackson, A. P., & Hobfoll, S. E. (2007). Emotional numbing weakens abused inner-city women's resiliency resources. *Journal of Traumatic Stress, 20*(2), 197-206.

Jones, F., & Fletcher, B. C. (1996). Job control and health. In Schabracq, M. J., Winnubst, J. A. M., & Cooper, C. L. (Eds.), *Handbook of work and health psychology*. (pp. 33-50). Chichester, United Kingdom: Wiley & Sons.

Jones, M., Smith, K. & Johnston, D. (2005). Exploring the Michigan model: The relationship of personality, managerial support and organizational structure with health outcomes in entrants to the healthcare environment. *Work and Stress, 19*(1), 1-22.

Jose, P. E. (2013). *Doing statistical mediation and moderation*. New York, USA: Guilford Press.

Jourdain, G., & Vézina, M. (2014). How psychological stress in the workplace influences presenteeism propensity: A test of the Demand–Control–Support model. *European Journal of Work and Organizational Psychology*, *23*(4), 483-496.

Joudrey, A. D., & Wallace, J. E. (2009). Leisure as a coping resource: A test of the job demand-control-support model. *Human Relations, 62*(2), 195-217.

Judd, C. M., & Kenny, D. A. (1981). Process analysis: Estimating mediation in treatment evaluations. *Evaluation Review, 5*(5), 602-619.

Judge, T. A., Erez, A., & Bono, J. E. (1998). The power of being positive: The relation between positive self-concept and job performance. *Human Performance, 11*(2-3), 167-187.

Judge. T. A., Higgins, C. A., Thoresen, C. J. & Barrick, M. R. (1999). The big five personality traits, general mental ability, and career success across the life span. *Personnel Psychology*, *52*(3), 621-652.

Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin, 127*(3), 376-407.

Kacmar, K. M., Collins, B. J., Harris, K. J., & Judge, T. A. (2009). Core self-evaluations and job performance: The role of the perceived work environment. *Journal of Applied Psychology*, *94*(6), 1572-1580.

Kahn, S. E., & Long, B. C. (1988). Work-related stress, self-efficacy, and well-being of female clerical workers. *Counselling Psychology Quarterly*, *1*(2), 145-153.

Kahn, R. L., & Byosiere, P. (1992). Stress in organizations. In Dunnette, M. D., & Hough, L. M. (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., Vol. 3, pp. 571-650). Palo Alto, USA: Consulting Psychologists Press.

Kanfer, R., & Ackerman, P. (2005). Work competence: A person-oriented perspective. In Elliot, A. J., & Dweck, C. S. (Eds.), *Handbook of competence and motivation* (pp. 336-353). New York, USA: Guilford Publications.

Kannan, D., & Levitt, H. M. (2013). A review of client self-criticism in psychotherapy. *Journal of Psychotherapy Integration*, *23*(2), 166-178.

Karasek, R. (1979). Job demands, job decision latitude and mental strain: Implications for job redesign. *Administrative Science Quarterly*, *24*(2), 285-306.

Karasek, R., Baker, D., Marxer, F., Ahlbom, A., & Theorell, T. (1981). Job decision latitude, job demands, and cardiovascular disease: a prospective study of Swedish men. *American Journal of Public Health, 71*(7), 694-705.

Karasek, R. & Theorell, T. (1990). *Healthy work: Stress, productivity and the reconstruction of working life*. New York, USA: Basic Books.

Karasek, R. (1998). Demand/Control model: A social-emotional, and psychological approach to stress risk and active behavior development. In Passow, N. (Ed.), *ILO encyclopedia of occupational health and safety*. Geneva, Switzerland: ILO.

Karriker, J. H., & Williams, M. L. (2009). Organizational justice and organizational citizenship behavior: A mediated multi-foci model. *Journal of Management, 35*(1), 112-135.

Katz, D., & Kahn, R. L. (1966). *The social psychology of organizations*. New York, USA: Wiley & Sons.

Kazdin, A. E. (2000). *Encyclopedia of Psychology*. Washington DC, USA: American Psychological Association.

Keijsers, G. J., Schaufeli, W. B., Blanc, P. M. L., Zwerts, C., & Miranda, D. R. (1995). Performance and burnout in intensive care units. *Work and Stress, 9*(4), 513-527.

Kendell, R. E., & DiScipio, W. J. (1968). Eysenck Personality Inventory scores of patients with depressive illnesses. *The British Journal of Psychiatry, 114*(511), 767-770.

Kendler, K. S., Kessler, R. C., Neale, M. C., Heath, A. C., & Eaves, L. J. (1993). The prediction of major depression in women: toward an integrated etiologic model. *American Journal of Psychiatry, 150*(8), 1139-1139.

Kendler, K. S., Neale, M. C., Kessler, R. C., Heath, A. C., & Eaves, L. J. (1993). A test of the equal-environment assumption in twin studies of psychiatric illness. *Behavior Genetics*, *23*(1), 21-27.

Kendler, K. S., Karkowski, L. M., & Prescott, C. A. (1999). Causal relationship between stressful life events and the onset of major depression. *American Journal of Psychiatry*, *156*(6), 837-841.

Kendler, K. S., Gardner, C. O., & Prescott, C. A. (2003). Personality and the experience of environmental adversity. *Psychological Medicine, 33*(7), 1193-1202.

Kendler, K. S., Kuhn, J., & Prescott, C. A. (2004). The interrelationship of neuroticism, sex, and stressful life events in the prediction of episodes of major depression. *American Journal of Psychiatry, 161*(4), 631-636.

Kendler, K. S., Kuhn, J. W., & Prescott, C. A. (2004). Childhood sexual abuse, stressful life events and risk for major depression in women. *Psychological Medicine*, *34*(8), 1475-1482.

Kendler, K. S., Gatz, M., Gardner, C. O., & Pedersen, N. L. (2006). A Swedish national twin study of lifetime major depression. *American Journal of Psychiatry*, *163*(1), 109-114.

Kendler, K. S., Gardner, C. O., Gatz, M., & Pedersen, N. L. (2007). The sources of co-morbidity between major depression and generalized anxiety disorder in a Swedish national twin sample. *Psychological Medicine, 37*(3), 453-462.

Kenny, D. A. (2016). Mediation. Retrieved from http://davidakenny.net/cm/mediate.htm#IE

Kenny, D. A., Kashy, D. A., & Bolger, N. (1998). Data analysis in social psychology. In Gilbert, D. T., Fiske, S. T., & Lindzey, G. (Eds.), *The handbook of social psychology* (4th ed., Vol. 1, pp. 233-265). New York, USA: Oxford University Press.

Kessler, R. C., Petukhova, M., Sampson, N. A., Zaslavsky, A. M., & Wittchen, H. U. (2012). Twelve-month and lifetime prevalence and lifetime morbid risk of anxiety and mood disorders in the United States. *International Journal of Methods in Psychiatric Research*, *21*(3), 169-184.

Khalid, S., Irfan, U., Sheikh, S., & Faisal, M. (2010). Frequency of stress and depression in female nurses working in a teaching hospital. *KUST Medical Journal, 2*(1), 10-14.

Khan, A. A., Jacobson, K. C., Gardner, C. O., Prescott, C. A., & Kendler, K. S. (2005). Personality and comorbidity of common psychiatric disorders. *The British Journal of Psychiatry*, *186*(3), 190-196.

Khan, A., Shah, I. M., Khan, S., & Gul, S. (2012). Teachers' Stress, Performance & Resources: The Moderating Effects of Resources on Stress & Performance. *International Review of Social Sciences and Humanities, 2*(2), 21-29.

Khan, A., Said, A. B., Shah, B. A., Aurangzeb, & Islam, F. (2015). Violence against nurses at public sector hospital of Peshawar, Pakistan. *International Journal of Innovative Research and Development, 4*(5), 4-7.

Khan, F., & Ali, U. (2013). A Cross-Cultural Study: Work Stress as Mediator between Job Satisfaction and Intention to Quit. *International Journal of Business and Social Science, 4(9),* 305-311.

Khan, N., Anwar, H., & Sayed, M. (2015). Prevalence of Stress Factors in Nurses in Leady Reading Hospital (LRH), Khyber Teaching Hospital (KTH) and Hayatabad Medical Complex (HMC) Hospitals, Peshawar, KPK. *International Journal of Innovative Research and Development, 4*(4), 21-26.

Khan, S. A., Farooq, S., & Bano, A. (2012). Anxiety and depression in nurses working in government tertiary care teaching hospitals of Peshawar Khyber Pakhtunkhwa and

their relationship with job stress. *Journal of Postgraduate Medical Institute, 26*(1), 34-38.

Kinnunen, U., Feldt, T., & Makikangas, A. (2008). Testing the effort-reward imbalance model among Finnish managers: The role of perceived organizational support. *Journal of Occupational Health Psychology, 13*(2), 114-127.

Klang, A. (2012). *The Relationship between Personality and Job Performance in Sales: A Replication of Past Research and an Extension to a Swedish Context* (Master's thesis) Stockholm University. Retrieved from http://urn.kb.se/resolve?urn

Kline, R. B. (1998). Software review: Software programs for structural equation modeling: Amos, EQS, and LISREL. *Journal of Psychoeducational Assessment, 16*(4), 343-364.

Kline, R. B. (2012). Assumptions in structural equation modeling. In Hoyle, R. H. (Ed.), *Handbook of structural equation modeling* (pp. 111-125). New York, USA: The Guilford Press.

Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). New York, USA: Guilford Publications.

Kling, K. C., Ryff, C. D., Love, G., & Essex, M. (2003). Exploring the influence of personality on depressive symptoms and self-esteem across a significant life transition. *Journal of Personality and Social Psychology, 85*(5), 922-932.

Ko, I. (2011). Crafting a job: Creating optimal experiences at work. (Doctoral dissertation. The Claremont Graduate University, Claremont, California).

Kock, N. (2017). Going Beyond Composites: Conducting a Factor-Based PLS-SEM Analysis. In Latan, H., & Noonan, R. (Eds.) *Partial Least Squares Path Modeling* (pp. 41-53). Cham, Switzerland: Springer Link.

Kohn, L. T., Corrigan, J., & Donaldson, M. S. (2000). *To err is human: Building a safer health* system (Vol. 6). USA: National Academies Press.

Kompier, M. (2003). Job Design and Well-being. In Schabracq, M., Winnubst, J., & Cooper, C. L. (Eds.), *Handbook of Work and Health Psychology* (pp.429-454). Hove, United Kingdom: Psychology Press/Erlbaum (UK) Taylor & Francis.

Koniarek, J., & Dudek, B. (1996). Social support as a buffer in the stress-burnout relationship. *International Journal of Stress Management, 3*(2), 99-106.

Koolhaas, J. M., Bartolomucci, A., Buwalda, B. D., De Boer, S. F., Flügge, G., Korte, S. M., & Richter-Levin, G. (2011). Stress revisited: a critical evaluation of the stress concept. *Neuroscience and Bio-Behavioral Reviews*, *35*(5), 1291-1301.

Kopala-Sibley, D. C., Zuroff, D. C., Russell, J. J., & Moskowitz, D. S. (2014). Understanding heterogeneity in social anxiety disorder: Dependency and self-criticism moderate fear responses to interpersonal cues. *British Journal of Clinical Psychology*, *53*(2), 141-156.

Körner, A., Coroiu, A., Copeland, L., Gomez-Garibello, C., Albani, C., Zenger, M., & Brähler, E. (2015). The role of self-compassion in buffering symptoms of depression in the general population. *PloS One*, *10*(10), e0136598. doi: https://doi.org/10.1371/journal.pone.0136598

Kothari, C. R. (2004). *Research methodology: Methods and techniques*. Delhi, India: New Age International.

Kotov, R., Gamez, W., Schmidt, F., & Watson, D. (2010). Linking "big" personality traits to anxiety, depressive, and substance use disorders: A meta-analysis. *Psychological Bulletin, 136*(5), 768-821.

Kottke, J. L. & Sharafinski, C. E. (1988). Measuring perceived supervisory and organizational support. *Educational and Psychological Measurement, 48*(4), 1075-1079.

Kramer, U., & Pascual-Leone, A. (2016). The role of maladaptive anger in self-criticism: A quasi-experimental study on emotional processes. *Counselling Psychology Quarterly, 29*(3), 311-333.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*(3), 607-610.

Kristensen, T. S. (1995). The demand-control-support model: Methodological challenges for future research. *Stress Medicine, 11*(1), 17-26.

Kristensen, T. S., Borg, V., & Hannerz, H. (2002). Socioeconomic status and psychosocial work environment: Results from a Danish national study. *Scandinavian Journal of Public Health, 30*(59), 41-48.

Kristensen, T. S., & Borg, V. (2003). Copenhagen Psychosocial Questionnaire (COPSOQ). *A questionnaire on psychosocial working conditions, health and well-being in three versions*. Unpublished manuscript, National Institute of Occupational Health, Denmark.

Kristensen, T. S., Bjorner, J. B., Christensen, K. B., & Borg, V. (2004). The distinction between work pace and working hours in the measurement of quantitative demands at work. *Work and Stress, 18*(4), 305-322.

Krueger, R. F., Caspi, A., Moffitt, T. E., Silva, P. A., & McGee, R. (1996). Personality traits are differentially linked to mental disorders: A multitrait-multidiagnosis study of an adolescent birth cohort. *Journal of Abnormal Psychology, 105*(3), 299-312.

Krueger, R. F., Caspi, A., & Moffitt, T. E. (2000). Epidemiological personology: the unifying role of personality in population-based research on problem behaviors. *Journal of Personality*, *68*(6), 967-998.

Kwakman, K. (2001). Work stress and work-based learning in secondary education: Testing the Karasek model. *Human Resource Development International, 4*(4), 487-501.

Lagace, R. R. (1988). Role-stress differences between salesmen and saleswomen: Effect on job satisfaction and performance. *Psychological Reports, 62*(3), 815-825.

Lama, D. (2003). *Transforming the Mind: Teachings on Generating Compassion*. London, United Kingdom: Thorsons.

Lama, D. (2009). *The art of happiness: A handbook for living*. New York, USA: Penguin.

Lancaster, G. (2005). *Research Methods in Management*. A concise introduction to research in management and business consultancy. Oxford, United Kingdom: Jordan Hill.

Larsen, R. J., & Ketelaar, T. (1991). Personality and susceptibility to positive and negative emotional states. *Journal of Personality and Social Psychology*, *61*(1), 132-140.

Laschinger, H., Wong, C., Cummings, G., & Grau, A. (2014). Resonant leadership and workplace empowerment: the value of positive organizational cultures in reducing workplace incivility. *Nursing Economics, 32*(1), 5-15.

Lautert, L. (1999). Work overload in the perception of nurses working at hospitals. *Revista Gaucha de Enferm, 20*(2), 50-64.

Lawler, E. E. (1973). *Motivation in work organizations*. California, USA: Brooks/Cole Publishing Co.

Lazarova, M., Westman, M., & Shaffer, M. A. (2010). Elucidating the positive side of the work-family interface on international assignments: A model of expatriate work and family performance. *The Academy of Management Review, 35*(1), 93-117.

Lazarus, R. S. (1966). *Psychological stress and the coping process*. New York, USA: McGraw- Hill.

Lazarus, R. S. & Folkman, S. (1984). *Stress, Appraisal and Coping.* New York, USA: Springer.

Lazarus, R. S., & Folkman, S. (1984). Coping and adaptation. In Mostofsky, D. I. (Ed.) *The handbook of behavioral medicine* (pp. 282-325) New Jersey, USA: John Wiley and Sons, Inc.

Lazarus, R. S. (1991). Progress on a cognitive-motivational-relational theory of emotion. *American Psychologist, 46*(8), 819-834.

Le Blanc, P. M., Bakker, A. B., Peeters, M. C. W., van Heesch, N. C. A., & Schaufeli, W. B. (2001). Emotional job demands and burnout among oncology care providers. *Anxiety, Stress and Coping, 14*(3), 243-263.

Le Fevre, M., Matheny, J., & Kolt, G. S. (2003). Eustress, distress, and interpretation in occupational stress. *Journal of Managerial Psychology*, *18*(7), 726-744.

Le Fevre, M., Kolt, G. S., & Matheny, J. (2006). Eustress, distress and their interpretation in primary and secondary occupational stress management interventions: Which way first? *Journal of Managerial Psychology, 21*(6), 547-565.

Leary, M. R., Tate, E. B., Adams, C. E., Batts Allen, A., & Hancock, J. (2007). Self-compassion and reactions to unpleasant self-relevant events: the implications of treating oneself kindly. *Journal of Personality and Social Psychology*, *92*(5), 887-904.

Lease, S. H. (1999). Occupational role stressors, coping, support, and hardiness as predictors of strain in academic faculty: An emphasis on new and female faculty. *Research in Higher Education*, *40*(3), 285-307.

Legerstee, J. S., Garnefski, N., Jellesma, F. C., Verhulst, F. C., & Utens, E. M. (2010). Cognitive coping and childhood anxiety disorders. *European Child and Adolescent Psychiatry*, *19*(2), 143-150.

Legerstee, J. S., Garnefski, N., Verhulst, F. C., & Utens, E. M. (2011). Cognitive coping in anxiety-disordered adolescents. *Journal of Adolescence*, *34*(2), 319-326.

Leiter, M. P., Peck, E., & Gumuchian, S. (2015). Workplace incivility and its implications for well-being. In Perrewe, P. L., Halbesleben, J. R., & Rosen, C. C. (Eds.). (2015) *Mistreatment in Organizations* (pp. 107-135). West Yorkshire, United Kingdom: Emerald Group Publishing Limited.

LePine, J. A., Podsakoff, N. P., & LePine, M. A. (2005). A meta-analytic test of the challenge stressor–hindrance stressor framework: An explanation for inconsistent relationships among stressors and performance. *Academy of Management Journal*, *48*(5), 764-775.

Leth-Steensen, C., & Gallitto, E. (2016). Testing mediation in structural equation modeling: The effectiveness of the Test of Joint Significance. *Educational and Psychological Measurement*, *76*(2), 339-351.

Lewin, K. (1951). *Field Theory in Social Science; Selected Theoretical Papers*. New York, USA: Harper & Row.

Lewis, C., Pearce, J., & Bisson, J. I. (2012). Efficacy, cost-effectiveness and acceptability of self-help interventions for anxiety disorders: systematic review. *The British Journal of Psychiatry*, *200*(1), 15-21.

Lexshimi, R., Tahir, S., Santhna, L., & Nisam, J. (2007). Prevalence of stress and coping mechanism among staff nurses in the intensive care unit. *Medicine and Health*, *2*(2), 146-153.

Li, J., Fu, H., Hu, Y., Shang, L., Wu, Y., Kristensen, T. S., Mueller, B. H., & Hasselhorn, H. M. (2010). Psychosocial work environment and intention to leave the nursing profession: results from the longitudinal Chinese NEXT study. *Scandinavian Journal of Public Health, 38*(3), 69-80.

Lim, J., Bogossian, F., & Ahern, K. (2010). Stress and coping in Australian nurses: a systematic review. *International Nursing Review, 57*(1), 22-31.

Lim, V. K. G. (1996). Job insecurity and its outcomes-moderating effects of work-based and non-work based social support. *Human Relations, 49*(2), 171-194.

Lin, H. S., Probst, J. C., & Hsu, Y. C. (2010). Depression among female psychiatric nurses in southern Taiwan: main and moderating effects of job stress, coping behavior and social support. *Journal of Clinical Nursing, 19*(15-16), 2342-2354.

Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling, 9*(2), 151-173.

Little, T. D., Card, N. A., Bovaird, J. A., Preacher, K, J., & Crandall, C. S. (2007). Structural Equation Modelling of Mediation and Moderation with Contextual Factors. In Little, T. D., Bovaird, J. A., & Card, N. A. (Eds.), *Modeling contextual effects in longitudinal studies* (pp. 207-230). New York, USA: Routledge.

Llorens, S., Bakker, A. B., Schaufeli, W., Salanova, M. (2006). Testing the robustness of the job demands-resources model. *International Journal of Stress Management. 13*(3), 378-391.

Long, C. S., Kowang, T. O., Ping, T. A., & Muthuveloo, R. (2014). Investigation on the Impact of Job Stressors on Nurses in Malaysia. *Asian Social Science. 10*(4), 67-77.

Longe, O., Maratos, F. A., Gilbert, P., Evans, G., Volker, F., Rockliff, H., & Rippon, G. (2010). Having a word with yourself: Neural correlates of self-criticism and self-reassurance. *NeuroImage*, *49*(2), 1849-1856.

Lubit, R. H. (2011). *Medscape: Acute treatment of disaster survivors.* Retrieved from http://emedicine.medscape.com/article/295003-overview.

Maben, J., Adams, M., Peccei, R., Murrells, T., & Robert, G. (2012). 'Poppets and parcels': the links between staff experience of work and acutely ill older peoples' experience of hospital care. *International Journal of Older People Nursing*, *7*(2), 83-94.

MacBeth, A., & Gumley, A. (2012). Exploring compassion: A meta-analysis of the association between self-compassion and psychopathology. *Clinical Psychology Review*, *32*(6), 545-552.

MacDonald, W. (2003). The impact of job demands and workload on stress and fatigue. *Australian Psychologist*, *38*(2), 102-117.

Mache, S., Vitzthum, K., Nienhaus, A., Klapp, B. F., & Groneberg, D. A. (2009). Physicians' working conditions and job satisfaction: does hospital ownership in Germany make a difference? *BMC Health Services Research*, *9*(1), 148-156.

MacKenzie, S. B., Podsakoff, P. M., & Fetter, R. (1991). Organizational citizenship behavior and objective productivity as determinants of managerial evaluations of salespersons. *Organizational Behavior and Human Decision Processes*, *50*(1), 123-150.

MacKinnon, D. P. (2008). *An introduction to statistical mediation analysis*. New York, USA: Erlbaum.

MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation analysis. *Annual Review of Psychology*, *58*(1), 593-614.

MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding, and suppression effect. *Prevention Science, 1*(4), 173-181.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods, 7*(1), 83-104.

MacKinnon, D. P., Warsi, G., & Dwyer, J. H. (1995). A simulation study of mediated effect measures. *Multivariate Behavioral Research, 30*(1), 41-62.

Madsen, S. R., John, C., & Miller, D. (2005). Work-family conflict and health: A study of the workplace, psychological, and behavioral correlates. *Journal of Behavioral and Applied Management, 6*(3), 225-247.

Mahalanobis, P. C. (1936). On the generalized distance in statistics. *Proceedings of the National Institute of Sciences of India. 2*(1), 49-55.

Mäkikangas, A., Hyvönen, K., Leskinen, E., Kinnunen, U., & Feldt, T. (2011). A person-centred approach to investigate the development trajectories of job-related affective well-being: A 10-year follow-up study. *Journal of Occupational and Organizational Psychology, 84*(2), 327-346.

Mäkikangas, A., & Kinnunen, U. (2003). Psychosocial work stressors and well-being: Self-esteem and optimism as moderators in a one-year longitudinal sample. *Personality and Individual Differences, 35*(3), 537-557.

Malcolm, L. & Blerkom, V. (2008). *Measurement and Statistics for teachers*. New York, USA: Taylor & Francis.

Malik, S. Z., & Khalid, N. (2016). Psychological Contract Breach, Work Engagement and Turnover Intention: Evidence from Banking Industry in Pakistan. *Pakistan Economic and Social Review, 54*(1), 37-54.

Mark, G. M. & Smith, A. P. (2008). Stress models: a review and suggested new direction. In Houdmont, J., & Leka, S. (Eds.). *Occupational Health Psychology* (pp. 111-144). Nottingham, United Kingdom: Nottingham University Press.

Marshall, M. B., Zuroff, D. C., McBride, C., & Bagby, R. M. (2008). Self-criticism predicts differential response to treatment for major depression. *Journal of Clinical Psychology*, *64*(3), 231-244.

Marshall, N. L., Barnett, R. C., Baruch, G. K., & Pleck, J. H. (1991). More than a job: Women and stress in caregiving occupations. *Current Research on Occupations and Professions, 6*(1), 61-81.

Marshall, N. L., & Barnett, R. C. (1992). Work-related support among women in caregiving occupations. *Journal of Community Psychology, 20*(1), 36-42.

Marshall, S. L., Parker, P. D., Ciarrochi, J., Sahdra, B., Jackson, C. J., & Heaven, P. C. (2015). Self-compassion protects against the negative effects of low self-esteem: A longitudinal study in a large adolescent sample. *Personality and Individual Differences, 74*, 116-121.

Martin, M. (1985). Neuroticism as predisposition toward depression: A cognitive mechanism. *Personality and Individual Differences, 6*(3), 353-365.

Matsunaga, M. (2008). Item parceling in structural equation modeling: A primer. *Communication Methods and Measures, 2*(4), 260-293.

Matteson, M. T., Ivancevich, J. M., & Smith, S. V. (1984). Relation of type-A behavior to performance and satisfaction among sales personnel. *Journal of Vocational Behavior, 25*(2), 203-214.

Mayerl, H., Stolz, E., Großschädl, F., Rásky, É., & Freidl, W. (2017). The moderating role of personal resources in the relationship between psychosocial job demands and health: a cross-sectional study. *BMJ Open, 7*(8), 1-10.

McCrae, R. R., & Costa, P. T. (1985). Comparison of EPI and psychoticism scales with measures of the five-factor model of personality. *Personality and Individual Differences*, *6*(5), 587-597.

McCrae, R. R., & Costa, P. T. (1991). The NEO Personality Inventory: Using the Five-Factor Model in Counseling. *Journal of Counseling and Development*, *69*(4), 367-372.

McCrae, R. R., Costa Jr, P. T., Terracciano, A., Parker, W. D., Mills, C. J., De Fruyt, F., & Mervielde, I. (2002). Personality trait development from age 12 to age 18: Longitudinal, cross-sectional and cross-cultural analyses. *Journal of Personality and Social Psychology*, *83*(6), 1456-1468.

McElligott, D., Siemers, S., Thomas, L., & Kohn, N. (2009). Health promotion in nurses: is there a healthy nurse in the house? *Applied Nursing Research, 22*(3), 211-215.

McFadzean, F., & McFadzean, E. (2005). Riding the emotional roller-coaster: A framework for improving nursing morale. *Journal of Health Organization and Management, 19*(4/5), 318-339.

McGilton, K. S., Hall, L. M., Wodchis, W. P., & Petroz, U. (2007). Supervisory support, job stress, and job satisfaction among long-term care nursing staff. *Journal of Nursing Administration*, *37*(7), 366-372.

McGowan, J., Gardner, D., & Fletcher, R. (2006). Positive and negative affective outcomes of occupational stress. *New Zealand Journal of Psychology*, *35*(2), 92-98.

McGrath, J. E. (1976). Stress and behavior in organizations. In Dunnette, M. D. (Ed.), *Handbook of industrial and organizational psychology* (pp. 1351-1396). Chicago, USA: Rand-McNally

McGuire, D., & McLaren, L. (2009). The impact of physical environment on employee commitment in call centers: The mediating role of employee wellbeing. *Team Performance Management, 15*(1/2), 35-48.

McVicar, A. (2003). Workplace stress in nursing: a literature review. *Journal of Advanced Nursing, 44*(6), 633-642.

Meghani, S. R., & Sajwani, S (2013). Nursing: A Profession in need in Pakistan. *I-manager's Journal on Nursing, 3*(3), 1-3.

Meyerding, S. G. (2015). Job characteristics and job satisfaction: A test of Warr's vitamin model in German horticulture. *The Psychologist-Manager Journal, 18*(2), 86-107.

Meyers, L. S., Gamst, G., and Guarino, A. J. (2006). *Applied Multivariate Research: Design and Interpretation*. London, United Kingdom: Sage Publications.

Michiel, P., Looze, D. E., Zinzen, E., Caboor, D., Van Roy, P., & Clarijs, J. A. N. P. (1998). Muscle strength, task performance and low back load in nurses. *Ergonomics, 41*(8), 1095-1104.

Middeldorp, C. M., Cath, D. C., Beem, A. L., Willemsen, G., & Boomsma, D. I. (2008). Life events, anxious depression and personality: a prospective and genetic study. *Psychological Medicine, 38*(11), 1557-1565.

Mikkelsen, A., Ogaard, T., & Lovrich, N. (2000). Modeling the effects of organizational setting and individual coping style on employees' subjective health, job satisfaction and commitment. *Public Administration Quarterly*, *24*(3), 371-397.

Mikkelsen, A., Ogaard, T., & Landsbergis, P. (2005). The effects of new dimensions of psychological job demands and job control on active learning and occupational health. *Work and Stress, 19*(2), 153-175.

Mills, J., Wand, T., & Fraser, J. A. (2015). On self-compassion and self-care in nursing: Selfish or essential for compassionate care? *International Journal of Nursing Studies*, *52*(4), 791-793.

Miner, J. B. (2015). Job Characteristics Theory. In Miner, J. B. (Ed), *Organizational Behavior Vol.1* (pp. 91-109). London, United Kingdom: Routledge.

Mintz-Binder, R. D., & Sanders, D. L. (2012). Workload demand: A significant factor in the overall well-being of directors of associate degree nursing programs. *Teaching and Learning in Nursing*, *7*(1), 10-16.

Mirowsky, J., & Ross, C. E. (2002). Measurement for a human science. *Journal of Health and Social Behavior, 43*(2), 152-170.

Moberg, G. P. (1987). Problems in defining stress and distress in animals. *Journal of the American Veterinary Medical Association, 191*(10), 1207-1211.

Mohamed, M. S., & Anisa, H. (2013). Job engagement: Medical transcription. SCMS. *Journal of Indian Management, 10*(1), 22-32.

Mohamed, S. A., & Maimunah A. M. (2016). The importance of Supervisor Support for Employees' Affective Commitment: An analysis of Job Satisfaction. *International Journal of Scientific and Research Publications, 6*(2), 435-440.

Mongrain, M. (1993). Dependency and self-criticism located within the five-factor model of personality. *Personality and Individual Differences*, *15*(4), 455-462.

Mongrain, M., & Zuroff, D. C. (1995). Motivational and affective correlates of dependency and self-criticism. *Personality and Individual Differences*, *18*(3), 347-354.

Mongrain, M. (1998). Parental Representations and Support-Seeking Behaviors Related to Dependency and Self-Criticism. *Journal of Personality*, *66*(2), 151-173.

Mongrain, M., Vettese, L. C., Shuster, B., & Kendal, N. (1998). Perceptual biases, affect, and behavior in the relationships of dependents and self-critics. *Journal of Personality and Social Psychology*, *75*(1), 230-241.

Mongrain, M. & Leather, F. (2006). Immature dependence and self-criticism predict the recurrence of major depression. *Journal of Clinical Psychology, 62*(6), 705-713.

Montgomery, A. J., Panagopolou, E., & Benos, A. (2006). Work-family interference as a mediator between job demands and job burnout among doctors. *Stress and Health, 22*(3), 203-212.

Morrison, E. W. (1994). Role definitions and organizational citizenship behavior: The importance of the employee's perspective. *Academy of Management Journal, 37*(6), 1543-1567.

Morrison, R. S., Jones, L. D., & Fuller, B. (1997). The relation between leadership style and empowerment on job satisfaction of nurses. *Journal of Nursing Administration, 27*(5), 27-34.

Mosadeghrad, A. M., Ferlie, E., & Rosenberg, D. (2011). A study of relationship between job stress, quality of working life and turnover intention among hospital employees. *Health Services Management Research, 24*(4), 170-181.

Motowidlo, S. J., Packard, J. S., & Manning, M. R. (1986). Occupational stress: Its causes and consequences for job performance. *Journal of Applied Psychology*, *71*(4), 618-629.

Motowidlo, S. J., & Van Scotter, J. R. (1994). Evidence that task performance should be distinguished from contextual performance. *Journal of Applied Psychology, 79*(4), 475-480.

Motowildo, S. J., Borman, W. C., & Schmit, M. J. (1997). A theory of individual differences in task and contextual performance. *Human Performance*, *10*(2), 71-83.

Motowidlo, S. J. (2003). Job Performance. In Borman, W. C., Ilgen, D. R., & Klimoski, R. J. (Eds.) *Handbook of Psychology* (pp. 39-52). New Jersey, USA: John Wiley & Sons, Inc.

Mrayyan, M. T., & Al-Faouri, I. (2008). Predictors of career commitment and job performance of Jordanian nurses. *Journal of Nursing Management, 16*(3), 246-256.

Mroczek, D. K., & Almeida, D. M. (2004). The effect of daily stress, personality, and age on daily negative affect. *Journal of Personality*, *72*(2), 355-378.

Muris, P., Roelofs, J., Rassin, E., Franken, I., & Mayer, B. (2005). Mediating effects of rumination and worry on the links between neuroticism, anxiety and depression. *Personality and Individual Differences*, *39*(6), 1105-1111.

Murphy, G., Athanasou, J., & King, N. (2002). Job satisfaction and organizational citizenship behavior: A study of Australian human-service professionals. *Journal of Managerial Psychology*, *17*(4), 287-297.

Murphy, K. R. (1989). Is the relationship between cognitive ability and job performance stable over time? *Human Performance*, *2*(3), 183-200.

Murphy, L. A. (2011). A Macroergonomics approach examining the relationship between work-family conflict and employee safety. (Unpublished Doctoral Dissertation, Portland State University, Portland, Oregon, United States).

Murphy, P. R., & Jackson, S. E. (1999). Managing work-role performance: Challenges for 21st century organizations and employees. In Ilgen, D. R., & Pulakos, E. D. (Eds.), *The changing nature of work performance* (pp.325–365). San Francisco, USA: Jossey-Bass.

Muthén, B. (2011). *Applications of causally defined direct and indirect effects in mediation analysis using SEM in Mplus* (Technical Report). Los Angeles, USA: Muthén & Muthén.

Nabe-Nielsen, K., Fallentin, N., Christensen, K. B., Jensen, J. N., & Diderichsen, F. (2008). Comparison of two self-reported measures of physical work demands in hospital personnel: A cross-sectional study. *BMC Musculoskeletal Disorders, 9*(1), 61-68.

Nahrgang, J. D., Morgeson, F. P., & Hofmann, D. A. (2011). Safety at work: A meta-analytic investigation of the link between job demands, job resources, burnout, engagement, and safety outcomes. *Journal of Applied Psychology, 96*(1), 71-94.

National Institute of Occupation Health and Safety, NIOSH. (2007). *Stress at work.* Retrieved from http://www.cdc.gov/niosh/docs/99-101/.

National Institute of Occupation Health and Safety, NIOSH (2008). *Exposure to stress: occupational hazards for hospitals*. DHHS (NIOSH) Publication No. 2008-136.

National Research Council (NRC). (1992*). Recognition and alleviation of pain and distress in laboratory animals: Committee on pain and distress in laboratory animals – Institute of laboratory animal resources.* Washington D.C, USA: The National Academies Press.

National Research Council (NRC). (2008). *Recognition and alleviation of distress in laboratory* animals. Washington, D.C, USA: The National Academies Press. Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK4032/pdf/TOC.pdf.

Neff, K. D. (2003a). Development and validation of a scale to measure self-compassion. *Self and Identity, 2*(3), 223-250.

Neff, K. D. (2003b). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2*(2), 85-101.

Neff, K. D. (2009a). Self-Compassion. In Leary, M. R., & Hoyle, R. H. (Eds.), *Handbook of Individual Differences in Social Behavior (*pp. 561-573). New York, USA: Guilford Press.

Neff, K. D. (2009b). The role of self-compassion in development: A healthier way to relate to oneself. *Human Development, 52*(4), 211-214.

Neff, K. D. & McGeehee, P. (2010). Self-compassion and psychological resilience among adolescents and young adults. *Self and Identity, 9*(3), 225-240.

Neff, K. D. (2016). The self-compassion scale is a valid and theoretically coherent measure of self-compassion. *Mindfulness, 7*(1), 264-274.

Neff, W. (2017). *Work and human behavior*. London, United Kingdom: Routledge.

Nelson, D.L, & Simmons, B. L. (2003). *Eustress: An Elusive Construct an Engaging Pursuit* (1st ed.). In Perrewé, P. L., & Ganster, D. C. (Eds.). *Emotional and Physiological Processes and Positive Intervention Strategies (Research in Occupational Stress and Well-being, Volume 3)* (pp. 265-322). Oxford, USA: Elsevier.

Nelson, D., & Cooper, C. (2005). Stress and health: A positive direction. *Stress and Health, 21*(2), 73-75.

Niki, E. (2007). Eustress and distress. *Nihon Yakurigaku Zasshi. Folia Pharmacologica Japonica, 129*(2), 76-79.

Nizami, A., Rafique, I., Aslam, F., Minhas, F. A., & Najam, N. (2006). Occupational stress and job satisfaction among nurses at a tertiary care hospital. *Journal of Pakistan Psychiatric Society*, *3*(1), 25-29.

Norris, F. H., Friedman, M. J., Watson, P. J., Byrne, C. M., Diaz, E., & Kaniasty, K. (2002). 60,000 disaster victims speak: Part I. An empirical review of the empirical literature, 1981-2001. *Psychiatry: Interpersonal and Biological Processes*, *65*(3), 207-239.

Norris, C. J., Larsen, J. T., & Cacioppo, J. T. (2007). Neuroticism is associated with larger and more prolonged electrodermal responses to emotionally evocative pictures. *Psychophysiology*, *44*(5), 823-826.

O'Gorman, K. D., & MacIntosh, R. (2015). *Research methods for business and management* (2nd ed.) Oxford, United Kingdom: Goodfellow Publishers Limited.

O'Sullivan, G. (2011). The relationship between hope, eustress, self-efficacy, and life satisfaction among undergraduates. *Social Indicators Research, 101*(1), 155-172.

Olino, T. M., Klein, D. N., Lewinsohn, P. M., Rohde, P., & Seeley, J. R. (2010). Latent trajectory classes of depressive and anxiety disorders from adolescence to adulthood: descriptions of classes and associations with risk factors. *Comprehensive Psychiatry*, *51*(3), 224-235.

Olson, K. J. (2011). Development and initial validation of a measure designed to assess conflict associated with work, family, and school roles (Unpublished Doctoral thesis, Washington State University, Washington).

Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Massachusetts, USA: Lexington Books.

Organ, D. W., & Konovsky, M. (1989). Cognitive versus affective determinants of organizational citizenship behavior. *Journal of Applied Psychology, 74*(1), 157-164.

Organ, D. W., & Lingl, A. (1995). Personality, satisfaction, and organizational citizenship behavior. *The Journal of Social Psychology, 135*(3), 339-350.

Organ, D. W. (1997). Organizational citizenship behavior: It's construct clean-up time. *Human Performance, 10*(2), 85-97.

Ormel, J., Stewart, R., & Sanderman, R. (1989). Personality as modifier of the life change-distress relationship. *Social Psychiatry and Psychiatric Epidemiology, 24*(4), 187-195.

Ormel, J., Oldehinkel, A. J., & Brilman, E. I. (2001). The interplay and etiological continuity of neuroticism, difficulties, and life events in the etiology of major and subsyndromal, first and recurrent depressive episodes in later life. *American Journal of Psychiatry, 158*(6), 885-891.

Ormel, J., Rosmalen, J., & Farmer, A. (2004). Neuroticism: a non-informative marker of vulnerability to psychopathology. *Social Psychiatry and Psychiatric Epidemiology, 39*(11), 906-912.

Orpen, C., & Welch, M. (1989). Stress and work attitudes among Australian nurses: An empirical study. *Psychological Studies-University of Calicut, 34*(3), 214-214.

Ostry, A. S., Kelly, S., Demers, P. A., Mustard, C., & Hertzman, C. (2003). A comparison between the effort-reward imbalance and demand control models. *BMC Public Health, 3*(1), 10-19.

Ozer, D. J., & Benet-Martinez, V. (2006). Personality and the prediction of consequential outcomes. *Annual Review Psychology, 57*(1), 401-421.

Page, A. (2004). *Keeping patients safe: Transforming the work environment of nurses*. Washington D.C, USA: National Academies Press.

Pakistan Bureau of Statistics (2015). Health institutes, number of beds, and health personnel in Pakistan. *Pakistan Statistical Yearbook.* Retrieved from http://www.pbs.gov.pk/content/pakistan-statistical-year-book-2015

Pallant, J. (2016). *SPSS survival manual: a step by step guide to data analysis using SPSS* (6th ed.). Berkshire, United Kingdom: Open University Press/McGraw-Hill.

Panatik, S. A., O'Driscoll, M. P., & Anderson, M. H. (2009). Psychological strain as a mediator of the relationship between job design, employee work reactions and job performance. Proceedings of the eighth annual Industrial & Organizational Psychology Conference. Sydney, Australia.

Pang, S., Wong, T. K. S., Wang, C. S., Zhang, Z. J., Chan, H. Y. L., Lam, C. W. Y., & Chan, K.L. (2004). Towards a Chinese definition of nursing. *Journal of Advanced Nursing, 46*(6), 657-670.

Park, C. L. & Folkman, S. (1997). Meaning in the context of stress and coping. *Review of General Psychology, 1*(2), 115-144.

Parkes, K. (1994). Personality and coping as moderators of work stress processes: models, methods and measures. *Work and Stress, 8*(2), 110-129.

Parkhouse, W., & Gall, B. (2004). Task frequency as a function of age for the powerline technician trade. *Ergonomics, 47*(6), 660-670.

Parry-Jones, B., Grant, G., McGrath, M., Caldock, K., Ramcharan, P., & Robinson, C. A. (1998). Stress and job satisfaction among social workers, community nurses and community psychiatric nurses: Implications for the care management model. *Health and Social Care in the Community, 6*(4), 271-285.

Pasca R. (2014) Person-Environment Fit Theory. In Michalos, A. C. (Eds.), *Encyclopedia of Quality of Life and Well-Being Research* (pp. 4776-4778). Dordrecht, NL: Springer.

Patel, S. (2015). *Workplace Transformation and the Changing Nature of Work*. Retrieved from https://www.linkedin.com/pulse/workplace-transformation-changing-nature-work-sagar-patel

Payne, R. A., Jick, T. D. & Burke, R. J. (1982). Wither stress research? An agenda for the 1980's. *Journal of Occupational Behavior, 3*(1), 131-145.

Payne, R. L., Jabri, M. M., & Pearson, A. W. (1988). On the importance of knowing the affective meaning of job demands. *Journal of Organizational Behavior, 9*(2), 149-158.

Peeters, M. C. W., Montgomery, A. J., Bakker, A. B., & Schaufeli, W. B. (2005). Balancing Work and Home: How Job and Home Demands Are Related to Burnout. *International Journal of Stress Management, 12*(1), 43-61.

Peng, K. Z., Wong, C. S., & Che, H. S. (2010). The missing link between emotional demands and exhaustion. *Journal of Managerial Psychology, 25*(7), 777-798.

Perrewe, P. L., & Ganster, D. C. (1989). The impact of job demands and behavioral control on experienced job stress. *Journal of Organizational Behavior, 10*(3), 213-229.

Perrewe, P. L., & Zellars, K. L. (1999). An examination of attributions and emotions in the transactional approach to the organizational stress process. *Journal of Organizational Behavior, 20*(5), 739-752.

Perry, C. M., Sheik-Nainar, M. A., Segall, N., Ma, R., & Kaber, D. B. (2008). Effects of physical workload on cognitive task performance and situation awareness. *Theoretical Issues in Ergonomics Science, 9*(2), 95-113.

Pervez, S., Zia-ur-Rehman, M., Javed, J., & Raza, I. (2015). Working Women in Pakistan: Analysis of Issues and Problems. *Pakistan Journal of Social Sciences*, *35*(2), 997-1011.

Peter, R., & Siegrist, J. (1999). Chronic psychosocial stress at work and cardiovascular disease: the role of effort–reward imbalance. *International Journal of Law and Psychiatry*, *22*(5-6), 441-449.

Peters, V. P., De Rijk, A. E., & Boumans, N. P. (2009). Nurses' satisfaction with shiftwork and associations with work, home and health characteristics: a survey in the Netherlands. *Journal of Advanced Nursing*, *65*(12), 2689-2700.

Peterson, U., Demerouti, E., Bergstrom, G., Samuelsson, M., Asberg, M., & Nygren, A. (2008). Burnout and physical and mental health among Swedish healthcare workers. *Journal of Advanced Nursing*, *62*(1), 84-95.

Petrou, P., Demerouti, E., & Schaufeli, W. B. (2015). Job crafting in changing organizations: Antecedents and implications for exhaustion and performance. *Journal of Occupational Health Psychology*, *20*(4), 470-480.

Petterson, I. L., Arnetz, B. B., Arnetz, J. E., & Horte, L. G. (1995). Work environment, skills utilization and health of Swedish nurses- results from a national questionnaire study. *Psychotherapy and Psychosomatization*, *64*(1), 20-31.

Piccolo, R. F., & Colquitt, J. A. (2006). Transformational leadership and job behaviors: The mediating role of core job characteristics. *Academy of Management Journal*, *49*(2), 327-340.

Piccolo, R. F., Greenbaum, R., Hartog, D. N. D., & Folger, R. (2010). The relationship between ethical leadership and core job characteristics. *Journal of Organizational Behavior*, *31*(2), 259-278.

Pinto, J. K., Dawood, S., & Pinto, M. B. (2014). Project management and burnout: Implications of the Demand–Control–Support model on project-based work. *International Journal of Project Management*, *32*(4), 578-589.

Pisitsungkagarn, K., Taephant, N., & Attasaranya, P. (2014). Body image satisfaction and self-esteem in Thai female adolescents: the moderating role of self-compassion. *International Journal of Adolescent Medicine and Health*, *26*(3), 333-338.

Podsakoff, N. P., Whiting, S. W., Podsakoff, P. M., & Blume, B. D. (2009). Individual-and organizational-level consequences of organizational citizenship behaviors: A meta-analysis. *Journal of Applied Psychology, 94*(1), 122-141.

Podsakoff, P. M., MacKenzie, S. M., Lee, J. & Podsakoff, N. P. (2003). Common method variance in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879-903.

Pope, D. P., Silman, A. J., Cherry, N. M., Pritchard, C., & Macfarlane, G. J. (1998). Validity of a self-completed questionnaire measuring the physical demands of work. *Scandinavian Journal of Work, Environment and Health*, *24*(5), 376-385.

Poropat, A. E., & Jones, L. (2009). Development and validation of a unifactorial measure of citizenship performance. *Journal of Occupational and Organizational Psychology, 82*(4), 851-869.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers, 36*(4), 717-731.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879-891.

Preacher, K. J., Zhang, Z., & Zyphur, M. J. (2011). Alternative methods for assessing mediation in multilevel data: The advantages of multilevel SEM. *Structural Equation Modeling, 18*(2), 161-182.

Prieto, L., Salanova Soria, M., Martínez Martínez, I., & Schaufeli, W. (2008). Extension of the Job Demands-Resources model in the prediction of burnout and engagement among teachers over time. *Psicothema, 20*(3), 354-360.

Punnett, L., & Wegman, D. H. (2004). Work-related musculoskeletal disorders: the epidemiologic evidence and the debate. *Journal of Electromyography and Kinesiology, 14*(1), 13-23.

Quarat, U. A., Muhammad, A. K., & Nadeem, I. (2013). Impact of Role Conflict on Job Satisfaction, Mediating Role of Job Stress in Private Banking Sector. *Interdisciplinary Journal of Contemporary Research in Business, 4*(12), 711-722.

Rabinowitz, S., & Stumpf, S. A. (1987). Facets of role conflict, role-specific performance, and organizational level within the academic career. *Journal of Vocational Behavior, 30*(1), 72-83.

Raes, F., Pommier, E., Neff, K. D., & Van Gucht, D. (2011). Construction and factorial validation of a short form of the self-compassion scale. *Clinical Psychology and Psychotherapy, 18*(3), 250-255.

Rauhala, A., Kivimaki, M., Fagerstrom, L., Elovainio, M., Virtanen, M., Vahtera, J., Rainio, A. K., Ojaniemi, K., & Kinnunen, J. (2007). What degree of work overload is likely to

cause increased sickness absenteeism among nurses? Evidence from the RAFAELA patient classification system. *Journal of Advanced Nursing, 57*(3), 286-295.

Rector, N. A., Bagby, R. M., Segal, Z. V., Joffe, R. T., & Levitt, A. (2000). Self-criticism and dependency in depressed patients treated with cognitive therapy or pharmacotherapy. *Cognitive Therapy and Research, 24*(5), 571-584.

Rees, D., & Cooper, C.L. (1992). Occupational stress in health-service workers in the UK. *Stress Medicine, 8*(2), 79-90.

Reich, T., Van Eerdewegh, P., Rice, J., Mullaney, J., Endicott, J., & Klerman, G. L. (1987). The familial transmission of primary major depressive disorder. *Journal of Psychiatric Research*, *21*(4), 613-624.

Reinartz, W., Haenlein, M., & Henseler, J. (2009). An empirical comparison of the efficacy of covariance-based and variance-based SEM. *International Journal of Research in Marketing*, *26*(4), 332-344.

Reyes, D. (2012). Self-compassion: A concept analysis. *Journal of Holistic Nursing*, *30*(2), 81-89.

Rhee, S. Y., Hur, W. M., & Kim, M. (2017). The Relationship of Coworker Incivility to Job Performance and the Moderating Role of Self-Efficacy and Compassion at Work: The Job Demands-Resources (JD-R) Approach. *Journal of Business and Psychology, 32*(6), 711-726.

Rich, B. L., Lepine, J. A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. *The Academy of Management Journal*, *53*(3), 617-635.

Richards, K. (2013). Self-care is a lifelong journey. *Nursing Economics*, *31*(4), 198-202.

Rigdon, E. E., Sarstedt, M., & Ringle, C. M. (2017). On comparing results from CB-SEM and PLS-SEM: Five perspectives and five recommendations. *Marketing ZFP, 39*(3), 4-16.

Rijk, A. E., Blanc, P. M. L., Schaufeli, W. B., & Jonge, J. (1998). Active coping and need for control as moderators of the job demand-control model: Effects on burnout. *Journal of Occupational and Organizational Psychology*, *71*(1), 1-18.

Ringle, C. M., Sarstedt, M., & Straub, D. W. (2012). Editor's comments: a critical look at the use of PLS-SEM in MIS quarterly. *MIS Quarterly*, *36*(1), 3-14.

Roberts, J. E., & Gotlib, I. H. (1997). Social support and personality in depression. In Pierce, G. R., Lakey, B., & Sarason, I. G. (Eds.), *Sourcebook of social support and personality* (pp. 187-214). Berlin, Germany: Springer Science & Business Media.

Roberts, J. E., Gilboa, E., & Gotlib, I. H. (1998). Ruminative response style and vulnerability to episodes of dysphoria: Gender, neuroticism, and episode duration. *Cognitive Therapy and Research*, *22*(4), 401-423.

Roberts, S. B., & Kendler, K. S. (1999). Neuroticism and self-esteem as indices of the vulnerability to major depression in women. *Psychological Medicine*, *29*(5), 1101-1109.

Robinson, P. K. (1986). Age, health and job performance. In Birren, J. E., Robinson, P. K., & Livingston, J. (Eds.), *Age, Health and Employment*. New Jersey, USA: Prentice-Hall.

Rodgers, B. (1990). Behaviour and personality in childhood as predictors of adult psychiatric disorder. *Journal of Child Psychology and Psychiatry*, *31*(3), 393-414.

Rogers, C. (2012). *Client Centered Therapy*. London, United Kingdom: Hachette.

Rogge, T. (2012). *Stress and anxiety*. Retrieved from http://www.nlm.nih.gov/medlineplus/ency/article/003211.htm.

Rohail, R., Zaman, F., Ali, M., Waqas, M., Mukhtar, M., & Parveen, K. (2017). Effects of Work Environment and Engagement on Nurses Organizational Commitment in Public

Hospitals Lahore, Pakistan. *Saudi Journal of Medical and Pharmaceutical Sciences, 3*(7), 748-753.

Rosellini, A. J., Lawrence, A. E., Meyer, J. F., & Brown, T. A. (2010). The effects of extraverted temperament on agoraphobia in panic disorder. *Journal of Abnormal Psychology*, *119*(2), 420-426.

Rothmann, S., & Coetzer, E. P. (2003). The big five personality dimensions and job performance. *SA Journal of Industrial Psychology*, *29*(1), 68-74.

Rotundo, M., & Sackett, P. R. (2002). The relative importance of task, citizenship, and counterproductive performance to global ratings of job performance: A policy-capturing approach. *Journal of Applied Psychology, 87*(1), 66-80.

Ruane, J. M. (2005). *Essentials of Research Methods: A guide to social sciences research*. London, United Kingdom: Blackwell Publishing.

Rudich, Z., Lerman, S. F., Gurevich, B., Weksler, N., & Shahar, G. (2008). Patients' self-criticism is a stronger predictor of physician's evaluation of prognosis than pain diagnosis or severity in chronic pain patients. *The Journal of Pain, 9*(3), 210-216.

Rugulies, R., Aust, B., & Pejtersen, J. H. (2010). Do psychosocial work environment factors measured with scales from the COPSOQ predict register-based sickness absence of 3 weeks or more in Denmark? *Scandinavian Journal of Public Health, 38*(3), 42-50.

Rupp, D. E., & Cropanzano, R. (2002). Multifoci justice and social exchange relationships. *Organizational Behavior and Human Decision Processes, 89*(1), 925-946.

Rush, A. J., Laux, G., Giles, D. E., Jarrett, R. B., Weissenburger, J., Feldman-Koffler, F., & Stone, L. (1995). Clinical characteristics of outpatients with chronic major depression. *Journal of Affective Disorders*, *34*(1), 25-32.

Russ, T. C., Stamatakis, E., Hamer, M., Starr, J. M., Kivimäki, M., & Batty, G. D. (2012). Association between psychological distress and mortality: Individual participant pooled analysis of 10 prospective cohort studies. *British Medical Journal, 34*(5), 1-14.

Rydstedt, L. W., Deveraux, J. & Sverke, M. (2007). Comparing and combining the demand-control support model and the effort-reward imbalance model to predict long-term mental strain. *European Journal of Work and Organizational Psychology, 16*(3), 261-278.

Sadikaj, G., Moskowitz, D. S., Russell, J. J., Zuroff, D. C., & Paris, J. (2013). Quarrelsome behavior in borderline personality disorder: Influence of behavioral and affective reactivity to perceptions of others. *Journal of Abnormal Psychology, 122*(1), 195-207.

Saklofske, D. H., Kelly, I. W., & Janzen, B. L. (1995). Neuroticism, depression, and depression proneness. *Personality and Individual Differences, 18*(1), 27-31.

Saksvik, P. O. (2017). Explanatory Models in Occupational Health Psychology. In Christensen, M., Saksvik, P., & Karanika-Murray, M. (Eds.), *The Positive Side of Occupational Health Psychology* (pp. 19-32). Cham, Switzerland: Springer.

Salami, A., Ojokuku, R., & Ilesanmi, O. (2010). Impact of job stress on managers' performance. *European Journal of Scientific Research, 45*(2), 249-260.

Saldivar, M. G. (2012). *A Primer on Survey Response Rate*. Florida State University, USA: Learning Systems Institute.

Salgado, J. F. (1997). The five-factor model of personality and job performance in the European Community. *Journal of Applied Psychology, 82*(1), 30-43.

Salonna, F., Geckova, A. M., Zezula, I., Sleskova, M., Groothoff, J. W., Reijneveld, S. A., & van Dijk, J. P. (2012). Does social support mediate or moderate socioeconomic

differences in self-rated health among adolescents? *International Journal of Public Health, 57*(3), 609-617.

Salzberg, S. (1997). *Loving kindness: The revolutionary art of happiness*. Boston, USA: Shambhala.

Samaie, G., & Farahani, H. A. (2011). Self-compassion as a moderator of the relationship between rumination, self-reflection and stress. *Procedia-Social and Behavioral Sciences, 30*(1), 978-982.

Santos, J. R. A. (1999). Cronbach's alpha: A tool for assessing the reliability of scales. *Journal of Extension, 37*(2), 1-5.

Sapolsky, R. as told to Shwartz, M. (2007). *Robert Sapolsky discusses physiological effects of stress*. Stanford Report. Retrieved from http://news.stanford.edu/news/2007/march7/sapolskysr-030707.html.

Sarstedt, M., Hair, J. F., Ringle, C. M., Thiele, K. O., & Gudergan, S. P. (2016). Estimation issues with PLS and CBSEM: Where the bias lies! *Journal of Business Research, 69*(10), 3998-4010.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (4th ed.) London, United Kingdom: Pearson Education.

Savas, A. C., & Toprak, E. (2013). Mediation effect of job stress in the relationship between organizational health and job satisfaction. *Ozean Journal of Social Sciences, 6*(1), 1-11.

Schabracq, M. J. & Cooper, C. L. (2000). The changing nature of work and stress. *Journal of Managerial Psychology, 15*(3), 227-241.

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior, 25*(3), 293-315.

Schaufeli, W. B., Leiter, M. P., & Maslach, C. (2009). Burnout: 35 years of research and practice. *Career Development International, 14*(3), 204-220.

Schaufeli, W. B., Bakker, A. B., Van der Heijden, F. M., & Prins, J. T. (2009). Workaholism, burnout and well-being among junior doctors: The mediating role of role conflict. *Work and Stress, 23*(2), 155-172.

Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the Job Demands-Resources Model: Implications for improving work and health. In Bauer, G. F., & Hammig, O. (Eds.), *Bridging occupational, organizational and public health* (pp. 43-68). Netherlands: Springer.

Schaufeli, W. B. (2017). Applying the Job Demands-Resources model; A 'how to' guide to increase work engagement and prevent burnout. *Organizational Dynamics, 46*(2), 120-132.

Schmidt, F. L., & Hunter, J. E. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin, 124*(2), 262-274.

Schumacker, R. E., & Lomax, R. G. (2004). *A Beginner's Guide to Structural Equation Modeling* (2nd Ed). New Jersey, USA: Lawrence Erlbaum Associates.

Schwerha, D. J., & McMullin, D. L. (2002). Prioritizing ergonomic research in aging for the 21st century American workforce. *Experimental Aging Research, 28*(1), 99-110.

Schwirian, P. M. (1978). Evaluating the performance of nurses: A multidimensional approach. *Nursing Research, 27*(6), 347-351.

Scott, J., Eccleston, D., & Boys, R. (1992). Can we predict the persistence of depression? *The British Journal of Psychiatry, 161*(5), 633-637.

Scott, W. E. (1966). Activation theory and task design. *Organizational Behavior and Human Performance, 1*(1), 3-30.

Searle, B. J., Bright, J. E. H., & Bochner, S. (1999). Testing the 3-factor model of occupational stress: The impact of demands, control and social support on a mail sorting task. *Work and Stress, 13*(3), 268-279.

Sekaran, U., & Bougie, R. (2013). *Research Methods for Business: A Skill-Building Approach* (6th Ed). New Delhi, India: Wiley India Pvt. Ltd.

Selye, H. (1936). A syndrome produced by diverse nocuous agents. *Nature, 138*(3), 32-40.

Selye, H. (1974). *Stress without distress*. Philadelphia, USA: J.B. Lippincott Co.

Selye, H. (1976). *The stress of life* (Revised edition). New York, USA: McGraw-Hill.

Selye, H. (1977a). Stress without distress. *School Guidance Worker, 32*(5), 5-13.

Selye, H. (1977b). *The stress of my life: a scientist's memoirs*. Toronto, Canada: McClelland and Stewart.

Shahar, B., Doron, G., & Szepsenwol, O. (2015). Childhood maltreatment, shame-proneness and self-criticism in social anxiety disorder: A sequential mediational model. *Clinical Psychology and Psychotherapy, 22*(6), 570-579.

Shahar, G. (2015). *Erosion: The psychopathology of self-criticism*. New York, USA: Oxford University Press.

Shahzad, A., & Malik, R. K. (2014). Workplace Violence: An Extensive Issue for Nurses in Pakistan: A Qualitative Investigation. *Journal of Interpersonal Violence, 29*(11), 2021-2034.

Shaikh, M. A. (2004). Career satisfaction among female nurses. *Journal of the College of Physicians and Surgeons Pakistan, 14*(2), 72-84.

Shantz, A., & Alfes, K. (2015). Work engagement and voluntary absence: The moderating role of job resources. *European Journal of Work and Organizational Psychology, 24*(4), 530-543.

Shapiro, S. L., & Carlson, L. E. (2009). *The art and science of mindfulness: Integrating mindfulness into psychology and the helping professions*. Washington D.C, USA: American Psychological Association.

Sheikh, S. Z. (2016). Misinterpretation of Women on Cinema Boards in Pakistani Culture. *International. Journal of Multidisciplinary and Current Research*, *4*(1), 232-238.

Shephard, R. J. (1969). The working capacity of the older employee. *Archives of Environmental Health, 18*(6), 982-986.

Shepherd, D. A., & Cardon, M. S. (2009). Negative emotional reactions to project failure and the self-compassion to learn from the experience. *Journal of Management Studies*, *46*(6), 923-949.

Sherehiy, B., Karwowski, W., & Marek, T. (2004). Relationship between risk factors and musculoskeletal disorders in the nursing profession: A systematic review. *Occupational Ergonomics, 4*(4), 241-279.

Shimizu, M., Niiya, Y., & Shigemasu, E. (2016). Achievement goals and improvement following failure: moderating roles of self-compassion and contingency of self-worth. *Self and Identity*, *15*(1), 107-115.

Shiner, R., & Caspi, A. (2003). Personality differences in childhood and adolescence: Measurement, development, and consequences. *Journal of Child Psychology and Psychiatry*, *44*(1), 2-32.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and non-experimental studies: New procedures and recommendations. *Psychological Methods, 7*(4), 422-445.

Siegrist, J., Peter, R., Junge, A., Cremer, P., & Seidel, D. (1990). Low status control, high effort at work and ischemic heart disease: Prospective evidence from blue-collar men. *Social Science and Medicine, 31*(10), 1127-1134.

Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology, 1*(1), 27-41.

Siu, O. (2003). Job stress and job performance among employees in Hong Kong: The role of Chinese work values and organizational commitment. *International Journal of Psychology, 38*(6), 337-347.

Slocum-Gori, S., Hemsworth, D., Chan, W. W., Carson, A., & Kazanjian, A. (2013). Understanding compassion satisfaction, compassion fatigue and burnout: A survey of the hospice palliative care workforce. *Palliative Medicine, 27*(2), 172-178.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. In Leinhardt, S. (Ed.), *Sociological methodology* (pp. 290-312). Washington D.C, USA: American Sociological Association.

Sobol-Kwapinska, M. (2016). Calm down—it's only neuroticism. Time perspectives as moderators and mediators of the relationship between neuroticism and well-being. *Personality and Individual Differences, 94*(1), 64-71.

Somani, R. K., & Khowaja, K. (2012).Workplace violence towards nurses: A reality from the Pakistani context. *Journal of Nursing Education and Practice, 2*(3), 148-153.

Sonnentag, S., & Frese, M. (2002). Performance concepts and performance theory. In Sonnentag, S. (Ed.), *Psychological management of individual performance* (pp. 3-25). New York, USA: John Wiley and Sons, Inc.

Sonnentag, S. & Frese, M. (2003). Stress in Organizations. In Borman, W. C., Ilgen, D. R., & Klimoski, R. J. (Eds.), *Comprehensive handbook of psychology*. New Jersey, USA: John Wiley and Sons, Inc.

Sonnentag, S., Binnewies, C., & Mojza, E. J. (2010). Staying Well and Engaged When Demands Are High: The Role of Psychological Detachment. *Journal of Applied Psychology, 95*(5), 965-976.

Smith, C. A., Organ D. W., & Near, J. P. (1983). Organizational citizenship behaviors: its nature and antecedents. *Journal of Applied Psychology, 68*(4), 653-663.

Spector, P.E. (2003). Individual differences in health and well-being in organizations, In Hoffman, D. A., & Tetrick, L. E. (Eds.). *Health and Safety in Organizations: A Multilevel Perspective in the Society of Industrial and Organizational Psychology*. San Francisco, USA: Jossey- Bass, Inc.

Stamm, B. H. (2005). *The ProQol manual*. Pocatello, ID: Sidran Press.

Starr, L. R., & Davila, J. (2012). Cognitive and interpersonal moderators of daily co-occurrence of anxious and depressed moods in generalized anxiety disorder. *Cognitive Therapy and Research, 36*(6), 655-669.

Steel, P., Schmidt, J., & Shultz, J. (2008). Refining the relationship between personality and subjective well-being. *Psychological Bulletin*, *134*(1), 138-161.

Steers, R. M., & Mowday R. T. (1977). The motivational properties of task. *Academy of Management Review, 2*(4), 645-658.

Su, R., Murdock, C. D., & Rounds, J. (2015). Person-environment fit. In Hartung, P. J., Savickas, M., & Walsh, W. B. (Eds.), *APA Handbook of Career Intervention: Foundations* (pp. 81-98). Washington D.C, USA: American Psychological Association.

Sudman, S., & Bradburn, N. M. (1982). *Asking questions: A practical guide to questionnaire design* (1st ed.). San Francisco, USA: Jossey-Bass Publishers.

Suls, J., Green, P., & Hillis, S. (1998). Emotional reactivity to everyday problems, affective inertia, and neuroticism. *Personality and Social Psychology Bulletin*, *24*(2), 127-136.

Suls, J., Martin, R., & David, J. P. (1998). Person-environment fit and its limits: Agreeableness, neuroticism, and emotional reactivity to interpersonal conflict. *Personality and Social Psychology Bulletin*, *24*(1), 88-98.

Sun, L. Y., & Pan, W. (2008). HR practices perceptions, emotional exhaustion, and work outcomes: A conservation-of-resources theory in the Chinese context. *Human Resource Development Quarterly*, *19*(1), 55-74.

Surtees, P. G., & Wainwright, N. W. (1996). Fragile states of mind: neuroticism, vulnerability and the long-term outcome of depression. *The British Journal of Psychiatry*, *169*(3), 338-347.

Swagler, M. A., & Jome, L. M. (2005). The effects of personality and acculturation on the adjustment of North American sojourners in Taiwan. *Journal of Counseling Psychology*, *52*(4), 527-536.

Szabo, S., Tache, Y., & Somogyi, A. (2012). The legacy of Hans Selye and the origins of stress research: a retrospective 75 years after his landmark brief letter to the editor of Nature. *Stress*, *15*(5), 472-478.

Tabachnick, B., & Fidell, L. (2013). *Using Multivariate Statistics* (6th ed). Needham Heights: Allyn and Bacon: Boston.

Tackett, J. L., & Krueger, R. F. (2005). Interpreting personality as a vulnerability for psychopathology: A developmental approach to the personality-psychopathology relationship. In Hankin, B. L., & Abela, J. R. (Eds.), *Development of psychopathology: A vulnerability-stress perspective* (pp. 199-214). California, USA: Sage Publications.

Tadić, M., Bakker, A. B., & Oerlemans, W. G. (2015). Challenge versus hindrance job demands and well-being: A diary study on the moderating role of job resources. *Journal of Occupational and Organizational Psychology, 88*(4), 702-725.

Tangney, J. P., & Dearing, R. L. (2003). *Shame and guilt*. New York, USA: Guilford Press.

Taris, T. W. (2006). Is there a relationship between burnout and objective performance? A critical review of 16 studies. *Work and Stress*, *20*(4), 316-334.

Taris, T. W., Schreurs, P. J. G., Eikmans, K. J. L., & Van Riet, P. (2008). Work Characteristics, well-being and organizational performance: A test of the happy productive worker hypothesis at the organizational level. *Behavior and Organization, 21*(1), 3-18.

Taris, T. W., & Schreurs, P. J. G. (2009). Explaining worker strain and learning: How important are emotional job demands? *Anxiety, Stress and Coping*, *22*(3), 245-262.

Taris, T. W., & Schreurs, P. J. G. (2009). Well-being and organizational performance: An organizational-level test of the happy-productive worker hypothesis. *Work and Stress*, *23*(2), 120-136.

Taris, T. W. & Schaufeli, W. B. (2016). The Job Demands-Resources model. In Clarke, S., Probst, T. M., Guldenmund, F., & Passmore, J. (Eds.), *The Wiley Blackwell handbook of the psychology of occupational safety and workplace health* (pp. 157-180). Chichester, United Kingdom: John Wiley and Sons, Inc.

Tellegen, A. (1985). Structures of mood and personality and their relevance to assessing anxiety, with an emphasis on self-report. In Tuma, A. H., & Maser, J. D. (Eds.), *Anxiety and the anxiety disorders* (pp. 681-706). New Jersey, USA: Lawrence Erlbaum Associates.

Tett, R. P., Jackson, D. N. & Rothstein, M. (1991). Personality measures as predictors of job performance: A meta-analytic review. *Personnel Psychology, 44*(4), 703-742.

Tharenou, P., Donohue, R., & Cooper, B. (2007). *Management research methods*. Melbourne, Australia: Cambridge University Press.

Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA Journal of Industrial Psychology, 36*(2), 1-9.

Tims, M., Bakker, A. B., & Derks, D. (2012). Development and validation of the job crafting scale. *Journal of Vocational Behavior, 80*(1), 173-186.

Tooren, M., & Jonge, J. (2010). The role of matching job resources in different demanding situations at work: A vignette study. *Journal of Occupational and Organizational Psychology*, *83*(1), 39-54.

Tong, E. M. W., Bishop, G. D., Diong, S. M., Enkelmann, H. C., Why, Y. P., Ang, J. & Khader, M. (2004). Social support and personality among male police officers in Singapore. *Personality and Individual Differences, 36*(1), 109-123.

Tourigny, L., Baba, V. V., & Wang, X. (2010). Stress episode in aviation: The case of China. *Cross Cultural Management: An International Journal, 17*(1), 62-78.

Travers, D. A., Waller, A. E., Bowling, J. M., Flowers, D. & Tintinalli, J. (2002). Five-level triage system more effective than three-level in tertiary emergency department. *Journal of Emergency Nursing, 28*(5), 395-400.

Treadway, D. C., Ferris, G. R., Hochwarter, W., Perrewe, P., Witt, L. A., & Goodman, J. M. (2005). The role of age in the perceptions of politics-job performance relationship: A three-study constructive replication. *Journal of Applied Psychology, 90*(5), 872-881.

Tremblay, M. A., & Messervey, D. (2011). The Job Demands-Resources model: Further evidence for the buffering effect of personal resources. *SA Journal of Industrial Psychology, 37*(2), 10-19.

Trinkoff, A. M., Storr, C. L., & Lipscomb, J. A. (2001). Physically demanding work and inadequate sleep, pain medication use, and absenteeism in registered nurses. *Journal of Occupational and Environmental Medicine, 43*(4), 355-363.

Trinkoff, A. M., Lipscomb, J. A., Geiger-Brown, J., Storr, C. L., & Brady, B. A. (2003). Perceived physical demands and reported musculoskeletal problems in registered nurses. *American journal of Preventive Medicine, 24*(3), 270-275.

Trinkoff, A. M., Johantgen, M., Storr, C. L., Han, K., Liang, Y., Gurses, A. P., & Hopkins, S. (2010). A comparison of working conditions among nurses in magnet and non-magnet hospitals. *Journal of Nursing Administration, 40*(7/8), 309-315.

Trull, T. J., & Sher, K. J. (1994). Relationship between the five-factor model of personality and Axis I disorders in a nonclinical sample. *Journal of Abnormal Psychology, 103*(2), 350-360.

Tse, J. L. M., Flin, R., & Mearns, K. (2007). Facets of job effort in bus driver health: Deconstructing "effort" in the effort-reward imbalance model. *Journal of Occupational Health Psychology, 12*(1), 48-62.

Tsutsumi, A., Umehara, K., Ono, H., & Kawakami, N. (2007). Types of psychosocial job demands and adverse events due to dental mismanagement: A cross sectional study. *BMC Oral Health, 7*(1), 1-6.

Tsutsumi, A., Iwata, N., Wakita, T., Kumagai, R., Noguchi, H., & Kawakami, N. (2008). Improving the measurement accuracy of the effort-reward imbalance scales. *International Journal of Behavioral Medicine, 15*(2), 109-119.

Tuomi, K., Vanhala, S., Nykyri, E., & Janhonen, M. (2004). Organizational practices, work demands and the well-being of employees: a follow-up study in the metal industry and retail trade. *Occupational Medicine*, *54*(2), 115-121.

Turner, A. N., & Lawrence, P. R. (1965). *Industrial jobs and the worker: An investigation of response to task attributes*. Harvard University, Division of Research, Graduate School of Business Administration.

Van Berkel, H. K. (2009). The relationship between personality, coping styles and stress, anxiety and depression. Retrieved from https://ir.canterbury.ac.nz/bitstream/handle/10092/2612/

Van den Broeck, A., De Cuyper, N., De Witte, H., & Vansteenkiste, M. (2010). Not all job demands are equal: Differentiating job hindrances and job challenges in the Job

Demands–Resources model. *European Journal of Work and Organizational Psychology*, *19*(6), 735-759.

Van den Broeck, A., Van Ruysseveldt, J., Smulders, P., & De Witte, H. (2011). Does intrinsic value orientation strengthen the impact of job resources? A perspective from the job demands resources model. *European Journal of Work and Organizational Psychology*, *20*(5), 581-609.

Van den Broeck, A., Van Ruysseveldt, J., Vanbelle, E., & De Witte, H. (2013). The job demands–resources model: overview and suggestions for future research. In Bakker, A. B. (Ed.), *Advances in Positive Organizational Psychology* (pp. 83-105). West Yorkshire, United Kingdom: Emerald Group Publishing Limited.

Van den Heuvel, M., Demerouti, E., Schaufeli, W. B., & Bakker, A. B. (2010). Personal resources and work engagement in the face of change. In Houdmont, J., & Leka, S. (Eds.), *Contemporary occupational health psychology: Global perspectives on research and practice*. Chichester, United Kingdom: John Wiley and Sons, Inc.

Van den Tooren, M., & De Jonge, J. (2008). Managing job stress in nursing: What kind of resources do we need? *Journal of Advanced Nursing*, *63*(1), 75-84.

Van der Doef, M. & Maes, S. (1998). The Job Demand-Control (-Support) Model and physical health outcomes: a review of the strain and buffer hypotheses. *Psychology and Health*, *13*(5), 909-936.

Van der Doef, M., & Maes, S. (1999). The job demand-control (-Support) model and psychological well-being: a review of 20 years of empirical research. *Work and Stress*, *13*(2), 87-114.

Van der Doef, M., & Verhoeven, C. (2017). The Job Demand-Control (-Support) Model in the Teaching Context. In McIntyre, T., McIntyre, S., & Francis, D. (Eds.), *Educator Stress* (pp. 197-222). Cham, Switzerland: Springer.

Van der Heijden, B. I. J. M., Demerouti, E., Bakker, A. B., & Hasselhorn, H. (2008). Work-home interference among nurses: Reciprocal relationships with job demands and health. *Journal of Advanced Nursing, 62*(5), 572-584.

Van Doorn, R. R., & Hülsheger, U. R. (2015). What makes employees resilient to job demands? The role of core self-evaluations in the relationship between job demands and strain reactions. *European Journal of Work and Organizational Psychology, 24*(1), 76-87.

Van Emmerik, I. J. H., & Peeters, M. C. W. (2009). Crossover specificity of team level work-family conflict to individual-level work-family conflict. *Journal of Managerial Psychology, 24*(3), 254-268.

Van Essen, G., Paardekooper, P. J., Talma, H. F. & van der Windt, W. (2006) Rapport Arbeid in Zorg en Welzijn 2006 [Report of the Work in Health Care, 2006]. Utrecht, Netherlands: Prismant.

Van Os, J., & Jones, P. B. (1999). Early risk factors and adult person–environment relationships in affective disorder. *Psychological Medicine, 29*(5), 1055-1067.

Van Os, J., Park, S. B. G., & Jones, P. B. (2001). Neuroticism, life events and mental health: evidence for person-environment correlation. *The British Journal of Psychiatry, 178*(40), 72-77.

Van Scotter, J. R., Motowidlo, S. J. & Cross, T. C. (2000). Effects of task performance and contextual performance on systemic rewards. *Journal of Applied Psychology, 85*(4), 526-535.

Van Vegchel, N., de Jonge, J., Bakker, A., & Schaufeli, W. (2002). Testing global and specific indicators of rewards in the Effort-Reward Imbalance Model: Does it make any difference? *European Journal of Work and Organizational Psychology*, *11*(4), 403-421.

Van Vegchel, N., De Jonge, J., Bosma, H., & Schaufeli, W. (2005). Reviewing the effort–reward imbalance model: drawing up the balance of 45 empirical studies. *Social Science and Medicine, 60*(5), 1117-1131.

Van Veldhoven, M., de Jonge, J., Broersen, S., Kompier, M. & Meijman, T. (2002). Specific relationships between psychosocial job conditions and job-related stress: A three level analytical approach. *Work and Stress, 16*(3), 207-228.

Van Veldhoven, M., Taris, T. W., De Jonge, J., & Broersen, S. (2005). The relationship between work characteristics and employee health and well-being: how much complexity do we really need? *International Journal of Stress Management, 12*(1), 3-28.

Van Weel, C., Kassai, R., Qidwai, W., Kumar, R., Bala, K., Gupta, P. P., Haniffa, R., Hewageegana, N. R., Ranasinghe, T., Kidd, M., & Howe, A. (2016). Primary healthcare policy implementation in South Asia. *BMJ Global Health*, *1*(2), 1-5.

Van Wingerden, J., Bakker, A. B., & Derks, D. (2017). The longitudinal impact of a job crafting intervention. *European Journal of Work and Organizational Psychology, 26*(1), 107-119.

Van Yperen, N. W., & Snijders, T. A. (2000). A multilevel analysis of the demands–control model: Is stress at work determined by factors at the group level or the individual level? *Journal of occupational health psychology, 5*(1), 182-190.

Van Yperen, N. W., & Hagedoorn, M. (2003). Do high job demands increase intrinsic motivation or fatigue or both? The role of job control and job social support. *The Academy of Management Journal, 46*(3), 339-348.

Vann, J. C. (2017). Relationships between Job Satisfaction, Supervisor Support, and Profitability among Quick Service Industry Employees (Doctoral dissertation, Walden University, Minneapolis, USA).

Vanroelen, C., Louckx, F., Moors, G., & Levecque, K. (2010). The clustering of health-related occupational stressors among contemporary wage-earners. *European Journal of Work and Organizational Psychology, 19*(6), 654-674.

Vassar, L. (2011). An analysis of educator resiliency within a rural public secondary setting. (Unpublished Doctoral thesis). Trevecca Nazarene University, Tennessee, United States.

Vegchel, N., Jonge, J., Soderfeldt, M., Dormann, C., & Schaufeli, W. (2004). Quantitative versus emotional demands among Swedish human service employees: Moderating effects of job control and social support. *International Journal of Stress Management, 11*(1), 21-40.

Vincent, C. V. H. (2007). Nurses' perceptions of children's pain: A pilot study of cognitive representations. *Journal of Pain and Symptom Management, 33*(3), 290-301.

Vinchur, A. J., Schippmann, J. S., Switzer, F. S. & Roth, P. L. (1998). A meta-analytic review of predictors of job performance for salespeople. *Journal of Applied Psychology, 83*(4), 586-597.

Viotti, S., & Converso, D. (2016). Buffering Effect of Job Resources in the Relationship between Job Demands and Work-to-Private-Life Interference: A Study among Health-Care Workers. *Safety and Health at Work, 7*(4), 354-362.

Vitaliano, P. P., Russo, J., Carr, J. E., Maiuro, R. D. & Becker, J. (1985). The Ways of Coping Checklist Psychometric Properties. *Multivariate Behavioral Research, 20*(1), 3-26.

Vliegen, N., Luyten, P., Besser, A., Casalin, S., Kempke, S., & Tang, E. (2010). Stability and change in levels of depression and personality: a follow-up study of postpartum depressed mothers that were hospitalized in a mother-infant unit. *The Journal of Nervous and Mental Disease*, *198*(1), 45-51.

Vollrath, M. (2000). Personality and hassles among university students: A three-year longitudinal study. *European Journal of Personality*, *14*(3), 199-215.

Warr, P. (2007). *Work, happiness, and unhappiness*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Warr, P. (2009). Environmental "vitamins", personal judgments, work values, and happiness. In Cartwright, S., & Cooper, C. (Eds.), *The Oxford Handbook of Organizational Well-being* (pp. 57-85). Oxford: Oxford University Press.

Warr, P. B. (1987). *Work, unemployment, and mental health*. Oxford, United Kingdom: Clarendon Press.

Warr, P. B. (1990). Decision latitude, job demands, and employee wellbeing. *Work and Stress*, *4*(4), 285-294.

Warr, P. B. (1994). Age and job performance. In Snel, J., & Cremer, R. (Eds.), *Work and aging: A European Perspective* (pp. 309-322). London, United Kingdom: Taylor and Francis.

Warren, R., Smeets, E., & Neff, K. D. (2016). Self-criticism and self-compassion: Risk and resilience for psychopathology. *Current Psychiatry*, *15*(12), 18-32.

Wasif, S. (2013a). World Health Day: In Pakistan, healthcare remains a luxury. *The Express Tribune*. Retrieved from http://www.tribune.com.pk

Wasif, S. (2013b). Unhealthy revelations: Pakistan plagued by dismal healthcare system. *The Express Tribune*. Retrieved from http://www.tribune.com.pk

Watson, D., Clark, L. A., & Carey, G. (1988). Positive and negative affectivity and their relation to anxiety and depressive disorders. *Journal of Abnormal Psychology, 97*(3), 346-353.

Watson, D., & Clark, L. A. (1994). Manual for the positive and negative affect schedule-expanded form. *Unpublished manuscript, University of Iowa, Iowa City, United States*.

Watson, D., Gamez, W., & Simms, L. J. (2005). Basic dimensions of temperament and their relation to anxiety and depression: A symptom-based perspective. *Journal of Research in Personality, 39*(1), 46-66.

Watson, J. (2008). *Nursing: The Philosophy and Science of Caring*. Colorado, USA: University Press of Colorado.

Way, M., & MacNeil, M. (2006). Organizational characteristics and their effect on health. *Nursing Economics, 24*(2), 67-76.

Weathington, B. L., Cunningham, C. J., & Pittenger, D. J. (2012). *Understanding business research*. New Jersey, USA: John Wiley and Sons, Inc.

Weinstock, L. M., & Whisman, M. A. (2006). Neuroticism as a common feature of the depressive and anxiety disorders: a test of the revised integrative hierarchical model in a national sample. *Journal of Abnormal Psychology, 115*(1), 68-74.

Weiss, A., Sutin, A. R., Duberstein, P. R., Friedman, B., Bagby, R. M., & Costa, P. T. (2009). The personality domains and styles of the five-factor model are related to incident depression in Medicare recipients aged 65 to 100. *The American Journal of Geriatric Psychiatry, 17*(7), 591-601.

Welbourne, J. L., Eggerth, D., Hartley, T. A., Andrew, M. E. & Sanchez, F. (2007). Coping strategies in the workplace: Relationships with attributional style and job satisfaction. *Journal of Vocational Behavior, 70*(2), 312-325.

Welker-Hood, K. (2006). Does workplace stress lead to accident or error? Many nurses feel the pressure. *AJN: The American Journal of Nursing, 106*(9), 104-113.

Wennerberg, R. W. (2011). A systemic perspective of stress in emergency medical personnel, emergency medical technicians and firefighters (Unpublished Doctoral thesis). Pepperdine University, California, United States.

Westland, C. J. (2010). Lower bounds on sample size in structural equation modeling. *Electronic Commerce Research and Applications, 9*(6), 476-487.

Westman, M., & Eden, D. (1991). Implicit stress theory: The spurious effects of stress on performance ratings. *Journal of Social Behavior and Personality, 6*(7), 127-140.

Westman, M., & Eden, D. (1996). The inverted-U relationship between stress and performance: A field study. *Work and Stress, 10*(2), 165-173.

Wetzel, R. D., Margulies, T., Davis, R., & Karam, E. (1980). Hopelessness, depression, and suicide intent. *The Journal of Clinical Psychiatry, 41*(5), 159-160.

Whelan, L. (2006). Competency assessment of nursing staff. *Orthopedic Nursing, 25*(3), 198-202.

Whelton, W. J., & Henkelman, J. J. (2002). A verbal analysis of forms of self-criticism. *Alberta Journal of Educational Research*, *48*(1), 88-90.

Whelton, W. J., & Greenberg, L. S. (2005). Emotion in self-criticism. *Personality and Individual Differences*, *38*(7), 1583-1595.

Whelton, W. J., Paulson, B., & Marusiak, C. W. (2007). Self-criticism and the therapeutic relationship. *Counselling Psychology Quarterly*, *20*(2), 135-148.

Whitehead, D. (2013). An overview of research theory and process. In Schneider, Z., Whitehead, D., LoBiondo-Wood, G., & Haber, J. (Eds.), *Nursing & midwifery research Methods and appraisal for evidence-based practice*, (4th ed., pp. 20-34). Sydney, Australia: Elsevier.

Widiger, T. A., & Trull, T. J. (1992). Personality and psychopathology: an application of the Five-Factor Model. *Journal of Personality*, *60*(2), 363-393.

Widiger, T. A., Verheul, R., & van den Brink, W. (1999). Personality and psychopathology. In Pervin, L. A., & John, O. P. (Eds.), *Handbook of personality: Theory and research* (pp. 347-366). New York, USA: Guilford Press.

Wilk, S. L., & Moynihan, L. M. (2005). Display rule" regulators": The relationship between supervisors and worker emotional exhaustion. *Journal of Applied Psychology*, *90*(5), 917-927.

Wilkins, K., & Beaudet, M. P. (1998). Work stress and health. *Health Reports*, *10*(3), 47-62.

Wills, T. A., Ainette, M. G., Baum, A., Revenson, T., & Singer, J. (2012). Social Networks and Social Support. *Handbook of Health Psychology*, *7*(1), 465-492.

Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management, 17*(3), 601-617.

Williams, L. J., & O'Boyle, E. H. (2008). Measurement models for linking latent variables and indicators: A review of human resource management research using parcels. *Human Resource Management Review, 18*(4), 233-242.

Witt, L. A., & Carlson, D. S. (2006). The work-family interface and job performance: Moderating effects of conscientiousness and perceived organizational support. *Journal of Occupational Health Psychology, 11*(4), 343-357.

Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and Psychological Measurement, 73*(6), 913-934.

Wolfe, F., & Hawley, D. J. (1998). The long term outcomes of rheumatoid arthritis. Work disability: A prospective 18-year study of 823 patients. *The Journal of Rheumatology, 25*(1), 2108-2117.

Wothke, W. (1993). Nonpositive definite matrices in structural modeling. In Bollen, K. A., & Long, J. S. (Eds.), *Testing structural equation models* (pp. 256–293). California, USA: Sage Publications.

Wray, N. R., Birley, A. J., Sullivan, P. F., Visscher, P. M., & Martin, N. G. (2007). Genetic and phenotypic stability of measures of neuroticism over 22 years. *Twin Research and Human Genetics, 10*(5), 695-702.

Wright, T. A., & Hobfoll, S. E. (2004). Commitment, psychological well-being and job performance: An examination of conservation of resources (COR) theory and job burnout. *Journal of Business and Management, 9*(4), 389-406.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management, 14*(2), 121-141.

Xanthopoulou, D., Bakker, A. B., Dollard, M. F., Demerouti, E., Schaufeli, W. B., Taris, T. W., & Schreurs, P. J. (2007). When do job demands particularly predict burnout? The moderating role of job resources. *Journal of Managerial Psychology*, *22*(8), 766-786.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009a). Reciprocal relationships between job resources, personal resources, and work engagement. *Journal of Vocational Behavior, 74*(3), 235-244.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009b). Work engagement and financial returns: A diary study on the role of job and personal resources. *Journal of occupational and Organizational Psychology, 82*(1), 183-200.

Xu, Y., Bach, E., & Orhede, E. (1997). Work environment and low back pain: the influence of occupational activities. *Occupational and Environmental Medicine*, *54*(10), 741-745.

Yang, T., Shen, Y. M., Zhu, M., Liu, Y., Deng, J., Chen, Q., & See, L. C. (2016). Effects of co-worker and supervisor support on job stress and presenteeism in an aging workforce: a structural equation modelling approach. *International Journal of Environmental Research and Public Health*, *13*(1), 72-87.

Yassi, A., Khokhar, J., Tate, R., Cooper, J., Snow, C., & Vallentype, S. (1995). The epidemiology of back injuries in nurses at a large Canadian tertiary care hospital: implications for prevention. *Occupational Medicine*, *45*(4), 215-220.

Yassi, A., Cooper, J., & Tate, R. (2000). Early intervention for back-injured nurses at a large hospital. *Spine*, *25*(19), 25-49.

Yassi, A., Cooper, J. E., Tate, R. B., Gerlach, S., Muir, M., Trottier, J., & Massey, K. (2001). A randomized controlled trial to prevent patient lift and transfer injuries of health care workers. *Spine*, *26*(16), 1739-1746.

Yerkes, R. M., & Dodson, J. D. (1908). The relation of strength of stimulus to rapidity of habit-formation. *Journal of Comparative Neurology and Psychology, 18*(5), 459-482.

Yousef, S. (2013). Challenges for nurses: Staff development and funding. *Pakistan Today*. Retrieved from http://www.pakistantoday.com.pk

Yozgat, U., Yurtkoru, S., & Bilginoğlu, E. (2013). Job stress and job performance among employees in public sector in Istanbul: examining the moderating role of emotional intelligence. *Procedia-Social and Behavioral Sciences, 75*(3), 518-524.

Zeidner, M. (1994). Personal and Contextual Determinants of Coping and Anxiety in an Evaluative Situation: A Prospective Study. *Personality and Individual Differences, 16*(6), 899-918.

Zhou, M., Li, J., Zhang, H., Qiu, K., & Yang, J. (2010). A Study on influential factors of job burnout in Kunming enterprise employees. *Journal of Environmental amd Occupational Medicine, 27*(9), 1-4.

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business research methods*. Boston, USA: Cengage Learning.

Zuckerman, M., Kuhlman, D. M., Joireman, J., Teta, P., & Kraft, M. (1993). A comparison of three structural models for personality: The Big Three, the Big Five, and the Alternative Five. *Journal of Personality and Social Psychology*, *65*(4), 757-768.

Zuroff, D. C., & Mongrain, M. (1987). Dependency and self-criticism: Vulnerability factors for depressive affective states. *Journal of Abnormal Psychology*, *96*(1), 14-22.

Zuroff, D. C. (1994). Depressive personality styles and the five-factor model of personality. *Journal of Personality Assessment, 63*(3), 453-472.

Zuroff, D. C., & Fitzpatrick, D. K. (1995). Depressive personality styles: Implications for adult attachment. *Personality and Individual Differences, 18*(2), 253-265.

Zuroff, D. C., Moskowitz, D. S., & Côté, S. (1999). Dependency, self-criticism, interpersonal behaviour and affect: Evolutionary perspectives. *British Journal of Clinical Psychology, 38*(3), 231-250.

Zuroff, D. C., Mongrain, M., & Santor, D. A. (2004). Conceptualizing and Measuring Personality Vulnerability to Depression: Comment on Coyne and Whiffen (1995). *Psychological Bulletin, 130*(3), 489-511.

Zuroff, D. C., Santor, D., & Mongrain, M. (2005). Dependency, self-criticism, and maladjustment. In Auerbach, J. S., Levy, K. N., & Schaffer, C. E. (Eds.), *Relatedness, self-definition and mental representation. Essays in honour of Sidney J. Blatt* (pp. 75-90). New York, USA: Routledge.

Zuroff, D. C., Koestner, R., Moskowitz, D. S., McBride, C., & Bagby, R. M. (2012). Therapist's autonomy support and patient's self-criticism predict motivation during brief treatments for depression. *Journal of Social and Clinical Psychology, 31*(9), 903-932.

APPENDIX

ACADEMIC SURVEY

Department of Business and Management, Faculty of Economics and Business, Universiti Malaysia Sarawak, 94300, Kota Samarahan, Sarawak, Malaysia

Subject: An academic survey related to the job stress and job performance of hospital nurses

Dear Madam,

I am a doctoral student at Universiti Malaysia Sarawak (UNIMAS) and as part of my degree requirements, I am conducting a research study on nurses' job stress and job performance in private sector hospitals of Punjab, Pakistan.

In order to successfully complete my degree, I need your assistance in completing this questionnaire attached to this letter. Participation in this study is entirely on voluntary basis and you may very well choose not to participate in this study for any reason whatsoever. However, this research is very important for me and for hospital administration in order to improve your working conditions and work experience at the hospital, so I would encourage you to please take some time out of your busy schedule and complete this survey.

The accuracy of how you feel about these statements is very crucial for my study. I guarantee that the information which will be gathered from this study will entirely be used for academic purposes only, will remain strictly confidential, and your identity will stay anonymous.

After completing this survey, kindly return it to the person who has distributed it to you or in case if it is mailed to you, kindly return it by using the pre-addressed envelope attached herewith.

Should you want to know more about this survey or study, please do not hesitate to contact me via e-mail on a.usman@live.com or you can call at this number: +923248442360.

Thank you for your time and kind help in this regard.

Have a good day ahead.

Best Regards,
Ahmad Usman

Using the scale given below, indicate how often do you encounter the following situations at work?

1 (Never) 2 (Rarely) 3 (Sometimes) 4 (Often) 5 (Always)

		N	R	S	O	A
1	Illness or any other human suffering.	1	2	3	4	5
2	Aggressive patients.	1	2	3	4	5
3	Troublesome patients in your work.	1	2	3	4	5
4	Death.	1	2	3	4	5
5	I have to perform a lot of physically strenuous tasks to carry out my job.	1	2	3	4	5
6	I have to bend and/or to stretch a lot at work.	1	2	3	4	5
7	I have to work in uncomfortable or impractical postures to do my work.	1	2	3	4	5
8	I have to lift or move heavy persons or objects (more than 10 kg).	1	2	3	4	5
9	I have to perform physical activity in a quick and continuous fashion.	1	2	3	4	5
10	How often do you lack time to complete all your work tasks?	1	2	3	4	5
11	Can you pause in your work whenever you want?	1	2	3	4	5
12	Do you have to work very fast?	1	2	3	4	5
13	Is your workload unevenly distributed so that things pile up?	1	2	3	4	5
14	Do you have enough time to talk to patients?	1	2	3	4	5
15	How often do you get help and support from your colleagues?	1	2	3	4	5
16	How often are your colleagues willing to listen to your work related problems?	1	2	3	4	5
17	How often do you get help and support from your immediate superior?	1	2	3	4	5
18	How often is your immediate superior willing to listen to your work related problems?	1	2	3	4	5
19	When I fail at something important to me I become consumed by feelings of inadequacy. **(R)**	1	2	3	4	5
20	I try to be understanding and patient towards those aspects of my personality I don't like.	1	2	3	4	5
21	When something painful happens I try to take a balanced view of the situation.	1	2	3	4	5
22	When I'm feeling down, I tend to feel like most other people are probably happier than I am. **(R)**	1	2	3	4	5
23	I try to see my failings as part of the human condition.	1	2	3	4	5
24	When I'm going through a very hard time, I give myself the caring and tenderness I need.	1	2	3	4	5
25	When something upsets me I try to keep my emotions in balance.	1	2	3	4	5
26	When I fail at something that's important to me, I tend to feel alone in my failure. **(R)**	1	2	3	4	5
27	When I'm feeling down I tend to obsess and fixate on everything that's wrong. **(R)**	1	2	3	4	5
28	When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.	1	2	3	4	5
29	I'm disapproving and judgmental about my own flaws and inadequacies. **(R)**	1	2	3	4	5
30	I'm intolerant and impatient towards those aspects of my personality I don't like. **(R)**	1	2	3	4	5
Because of your work, have you recently…						
31	… Lost much sleep over worry?	1	2	3	4	5
32	… Felt constantly under strain?	1	2	3	4	5
33	… Been getting scared or panicky for no good reason?	1	2	3	4	5
34	… Found everything getting on top of you?	1	2	3	4	5
35	… Been feeling nervous and strung-up all the time?	1	2	3	4	5
36	… Been thinking of yourself as a worthless person?	1	2	3	4	5
37	… Felt that life is entirely hopeless?	1	2	3	4	5
38	… Felt that life isn't worth living?	1	2	3	4	5
39	… Found at times you couldn't do anything because your nerves were too bad?	1	2	3	4	5

Using the scale below, indicate your level of agreement/disagreement with following statements:

1 (Strongly Disagree) 2 (Disagree) 3 (Neutral) 4 (Agree) 5 (Strongly Agree)

		SD	D	N	A	SA
40	Often I find that I do not live according to my standards or ideals.	**1**	**2**	**3**	**4**	**5**
41	There is a significant gap between who I am today and who I would like to be.	**1**	**2**	**3**	**4**	**5**
42	I tend not to be content with what I have.	**1**	**2**	**3**	**4**	**5**
43	I find it hard to accept my weaknesses.	**1**	**2**	**3**	**4**	**5**
44	I have a tendency to be very self-critical.	**1**	**2**	**3**	**4**	**5**
45	I compare myself often to standards or goals.	**1**	**2**	**3**	**4**	**5**
46	I meet criteria for the performance.	**1**	**2**	**3**	**4**	**5**
47	I fulfill all the requirements of the job.	**1**	**2**	**3**	**4**	**5**
48	I am competent in all areas of the job, handle tasks with proficiency.	**1**	**2**	**3**	**4**	**5**
49	I plan and organize to achieve objectives of the job and meet deadlines.	**1**	**2**	**3**	**4**	**5**
50	I perform well in the overall job by carrying out tasks as expected.	**1**	**2**	**3**	**4**	**5**
51	I cooperate fully with others by willingly sacrificing my own personal interests for the good of the team.	**1**	**2**	**3**	**4**	**5**
52	I go out of my way to congratulate others for their achievements.	**1**	**2**	**3**	**4**	**5**
53	I know and follow both the letter and the spirit of organizational rules and procedures, even when the rules seem personally inconvenient.	**1**	**2**	**3**	**4**	**5**
54	I avoid performing any tasks that are not normally a part of my own duties by arguing that they are somebody else's responsibility. **(R)**	**1**	**2**	**3**	**4**	**5**
55	I consistently take the initiative to pitch in and do anything that might be necessary to help accomplish team or organizational objectives, even if such actions are not normally part of my own duties.	**1**	**2**	**3**	**4**	**5**
56	I look for opportunities to learn new knowledge and skills from others at work and from new and challenging job assignments.	**1**	**2**	**3**	**4**	**5**
I see myself as someone who…						
57	…Is depressed, Blue.	**1**	**2**	**3**	**4**	**5**
58	…Is relaxed, handles stress well. **(R)**	**1**	**2**	**3**	**4**	**5**
59	…Can be tense.	**1**	**2**	**3**	**4**	**5**
60	…Worries a lot.	**1**	**2**	**3**	**4**	**5**
61	…Is emotionally stable, not easily upset. **(R)**	**1**	**2**	**3**	**4**	**5**
62	…Can be moody.	**1**	**2**	**3**	**4**	**5**
63	…Remains calm in tense situations. **(R)**	**1**	**2**	**3**	**4**	**5**
64	…Gets nervous easily.	**1**	**2**	**3**	**4**	**5**

Please place (√) in the block that relates to you:

Job Title:

- Student Nurse ☐
- Staff Nurse ☐
- Charge Nurse ☐
- Head Nurse ☐
- Matern ☐

Marital Status:

- Single ☐
- Married ☐
- Divorced ☐
- Widowed ☐

No. of Children _____

Total Experience:

- 1-5 years ☐
- 6-10 years ☐
- 11-15 years ☐
- 16-20 years ☐
- 21-25 years ☐

Your Age:

- 21-30 years ☐
- 31-40 years ☐
- 41-50 years ☐
- 51-60 years ☐

Highest Level of Education:

- Nursing Diploma ☐
- BSc. Nursing ☐
- MSc. Nursing ☐

Nature of Employment:

- Regular ☐
- Temporary ☐

Salary (PKR):

- 11,000-20,000 ☐
- 21,000-30,000 ☐
- 31,000-40,000 ☐
- 41,000-50,000 ☐
- 51,000 or above ☐

Job Status:

- Top Management ☐
- Middle Management ☐
- Lower Management ☐
- Non-managerial ☐

Thank you for your time and cooperation.