ORIGINAL ARTICLE

Relationship Between Sexual Pain and Neuroticism Among Malaysian Women: Does Age and Sexual Frequency Matter?

Nurul Azreen Hashim[1], Wan Saffana Wan Mohtar[2], Leny Suzana Suddin[3], Lin Naing[4], Rosliza Yahaya[5], Ang Ai Ling [6], Mohammad Farris Iman Leong Abdullah[7], Hatta Sidi[8]

[1] Department of Psychiatry, Faculty of Medicine, Faculty of Medicine, Universiti Teknologi MARA (UiTM), Sg Buloh, Selangor, Malaysia.
[2] Department of Psychiatry, Hospital Tengku Ampuan Rahimah, Klang.
[3] Department of Public Health Medicine, Faculty of Medicine, Universiti Teknologi MARA (UiTM), Puncak Alam, Selangor, Malaysia.
[4] PAPRSB Institute of Health Sciences, Universiti Brunei Darussalam, Bandar Seri Begawan, BE1410, Brunei.
[5] Department of Psychiatry & Mental Health, Faculty of Medicine, Universiti Sultan Zainal Abidin (UnisZA), Kampus Perubatan, Terengganu, Malaysia.
[6] Faculty of Medicine and Health Sciences, Universiti Malaysia Sarawak, Kota Samarahan, Sarawak, Malaysia.
[7] Department of Psychiatry & Mental Health, Faculty of Medicine, Universiti Sultan Zainal Abidin (UnisZA), Kampus Perubatan, Terengganu, Malaysia.
[8] Dean's Office, Faculty of Medicine, Universiti Kebangsaan Malaysia, 56000 Cheras, Kuala Lumpur, Malaysia.

ABSTRACT

Introduction: Sexual pain is part of female sexual dysfunction, and it affects females worldwide. The data available in Malaysia that investigated the relationship between sexual pain and neuroticism is limited. We aim to determine the association between these dyads and the factors associated with sexual pain in the Malaysian population. **Material and methods:** A total of 362 samples were recruited, and socio-demographic data were acquired from respondents. The instruments used were the validated sexual pain domain in the Malay versions of the Female Sexual Function Inventory (MVFSFI) and the neuroticism score in the Big Five Inventory (BFI) to assess females' sexual pain and neurotic personality traits, respectively. **Results:** Most respondents are less than 40 years old, of Malay ethnicity, and have a tertiary education. The multifactorial Analysis of Variance (ANOVA) revealed a strong negative relationship between sexual pain score and neuroticism ($p<0.001$). We found the pattern of relationship between sexual pain score and neuroticism consistent across subgroups, except in age groups ($p=0.023$) and sex frequency ($p=0.018$), i.e. the pattern among those aged 50 and above was different from the rest of the age groups and a significantly different pattern between the two groups of sexual frequency. Other significant factors for pain were age ($p=0.002$), level of education (0.009), and contraceptive use (0.023). **Conclusion:** Women with neuroticism have a characteristic feature concerning sexual pain, and a strategy to cope with sexual pain needs further research, i.e., a prospective study for understanding these dyads in more holistic patient management.
Malaysian Journal of Medicine and Health Sciences (2026) 22(SUPP4):2-8. doi:10.47836/mjmhs.22.s4.2

Keywords: Female Sexual Dissatisfaction, Female Sexual Dysfunction, Sexual Pain, Neuroticism, Personality traits

Corresponding Author:
Rosliza Yahaya, MD, MMed (Psych)
Email: roslizayahaya@unisza.edu.my
Tel : +609-6275528

INTRODUCTION

Pain during sexual intercourse (SI) or dyspareunia is inadequately understood as a medical disorder despite it being a common psychopathology among women. The prevalence of sexual pain is around 10 to 20% among sexually active adult women, with its incidence found to be rising (1,2). Women with sexual difficulties may experience effects on their mental state, quality of life (QoL), physical well-being, and intimacy (3,4). Dyspareunia, or the sensory part of the sexual pain, and vaginismus, a recurring and repeated involuntary spasm of the muscular structure of the lower 1/3 of the vaginal barrel that restricts SI, are previously categorised

under the DSM-5-TR subcategory of female sexual dysfunctions (FSD).

There is an expanding consideration of the pain constituent of sexual pain, prompting the claims that sexual pain is best examined from a prism of the holistic, the biopsychosocial perception as a pain disorder (5). The holistic viewpoint of pain is based on the unique interactions between the mind and bodily processes, as well as the changing social circumstances (6). It has led the way to a better comprehension of how acute sexual pain may develop into consistent pain and how therapists might mitigate the discomfort and prevent it (7). Analysing dyspareunia from a holistic viewpoint is a future trend within the fraternity of sexual medicine. Female sexual dysfunction (FSD) has continually been regarded as an interactional domain, contributions from a bio-physio-psycho-social continuum by both therapists in the clinical setting, clinicians, and academicians (8). However, there was a significant lack of explanation for the theoretical model of the biophysio-psychosocial process involved in the aetiology of dyspareunia. Additionally, there is a crucial need to recognise better the fundamental domains necessary to manage sexual pain effectively, especially in the personality realm.

Personality is commonly depicted as a pattern of pervasive behaviour and thoughts, global predispositions constant across time, and dependable for stress determination when a human is subjected to stress (9,10). Personality traits like neuroticism have been proposed as predisposing and vulnerability-determining factors or characteristics for the formation and continuation of psychopathology, including sexual problems, particularly neuroticism (11). Based on the Five-Factor Model, traits are considered by five dimensions or domains presented as the Big Five: neuroticism (N), openness (O), conscientiousness (C), extraversion (E), and agreeableness (A) (9,10,12). There was evidence that people with neuroticism tend to catastrophize pain, as pointed out by Costa and McCrae (13,14). Neuroticism, which is the inclination to acknowledge a wide range of negative emotional responses, such as concern, fear, and anxiety, has been linked to an increased awareness of somatic and bodily feelings (15). Persons who score highly on neuroticism are more likely to notice and attend to inner physical sensations and lesser aches since their attentional inspecting of both the outward and inner environment is burdened with anxiety, fear, and uncertainty (16). A study by Meana and Lykins (2009) (17) found that females who stated pain on > 50% of SI (the pain group) had greater scores of neuroticism, anxiousness, emotional sensitivity, and bodily pain amplification than the control group.

To the best of our clinical expertise, there has been no local research on the relationship between neuroticism and female sexual pain and their associated risk factors in Malaysia. This study aimed to establish the association between these two dyads in the Malaysian population in primary healthcare clinics.

MATERIALS AND METHODS

Our research work was a cross-sectional study with the samples collected for two months, from 1st October 2021 to 30th November 2021, at three government health clinics in Melaka, a state in the southern part of Peninsular Malaysia. Female respondents were selected at outpatient clinics by convenience sampling based on the inclusion and exclusion criteria. Explanations regarding the study and the participant information sheet were given to the respondents. Written informed consent was recorded from the patients. A replacement was chosen if the respondent was not keen to consent. Participants with a significant MVFSFI score were offered a referral to the psychiatric clinic for further assessment.

The female respondents attended Aye Keroh, Ayer Molek, or Tengkera health clinics. They were recruited with the inclusion criteria of females aged between 18 and 60 years and engaging in SI at least once a month. Other inclusion criteria were women who could read and understand the Malay language and agreed to participate in the study. The exclusion criteria were severe illnesses such as chronic renal, cardiovascular, and cerebrovascular diseases. Our study also excluded pregnant women or those 8 weeks postpartum at the time of the survey.

Instruments

We used instruments such as the sociodemographic data form, the MVFSFI, and the BIG 5 Inventory personality-Malay to assess female sexual functioning and neuroticism, respectively.

The MVFSFI is an instrument comprising the 19-item multidimensional self-rating framework developed initially by Rosen and validated for use in Malay (18). The MVFSFI measures overall sexual domain function, including sexual pain. It assesses sexual function during the last 4 weeks before the questionnaire is given. A score of ≤ 7 for sexual pain was determined based on the findings by Sidi et al. (18,19). The sexual pain score was calculated as a summation of three sexual pain item scores (items 17, 18, and 19), ranging from 0 to 15 points. The lower the score, the more pain the respondents experienced.

The Big Five Inventory (BFI) is a self-report questionnaire that measures the magnitude of the Big Five personality traits. It consists of 44 items in total and short phrases with relatively accessible vocabulary (20). The Malay version of the BFI showed good internal consistency and validity. The Malay-translated and validated BFI offers a reasonable psychometric assessment to measure personality traits 18). We measured the neuroticism domain of the BFI. For the 5 BFI, the neuroticism domain contains questions like anxiety (tense), irritability,

hostility, and self-consciousness (shy). The higher the score, the stronger the neuroticism trait tendency (18).

Ethical consideration

The research was approved by the National Medical Research and Ethics Committee (MREC), Ministry of Health Malaysia, via the National Medical Research Registry (NMRR) (Registration number: NMRR-21-1397-60192 (IIR).

Statistical analysis

The data were analysed using R for Windows 4.4.2 (21) and RStudio for Windows 2024.09.1 (22). Descriptive analysis was done for each of the variables. The categorical data were presented as frequency and percentage, while the continuous variables were presented as mean and standard deviation.

Pain score was calculated as a summation of three pain item scores (items 17, 18 and 19), ranging from 0 to 15 points. The relationship between pain and neuroticism was not consistently linear, and therefore, the neuroticism variable was categorised by quartile. A linear model, multifactorial ANOVA, was applied to identify significant variables for the pain outcome. The following variables were included - age-groups, education level, race, ethnics, work status, household income, household income, smoking status, alcohol intake, age of menarche, period cycle, dysmenorrhea, menopause status, having medical condition, marital status, sexual activity, sex frequency, use of contraceptives, partner age and duration of marriage. The relationship between pain and neuroticism was analysed in various subgroups, and significant subgroups were presented. P less than 0.050 was considered statistically significant.

RESULTS

A total of 368 respondents were recruited for this study. However, only 362 completed the questionnaire (response rate = 98.4%). Most of the respondents were less than 40 years old (n=265, 73.2%); of Malay ethnicity (n=333, 92.0%); were Muslims (n=335, 92.5%); had a tertiary level of education (n=203, 56.1%); currently working (n=261, 72.1%); and came from B40 economic status (n=207, 57.2%).

Most were non-smokers (n=357, 98.6%) and did not consume alcohol (n=358, 98.9%). Regarding their gynaecological history, most respondents achieved menarche at 12 (n=155, 42.8%). The mean and standard deviation of the age of menarche were 12.5 and 1.2, respectively.

Most of the respondents were married (n=356, 98.3%) and had a frequency of intercourse once or twice a week (n=271, 74.9%). About 31.2% (n=113) were on contraception. More than half (n=198, 54.2%) had the last childbirth more than 2 years ago, and 58.0% (n=219) gave birth normally. More than half of the respondents (n=214, 59.6%) had two children or fewer, while the majority had been married for less than 5 years (n=143, 39.5%). The partner's age group between 30 and 39 years was the majority (n=153, 42.3%) compared to the other age groups. As for the personality traits, the mean scores for the domain's extraversion, agreeableness, conscientiousness, neuroticism, and openness were published elsewhere (20).

There were significant variables with sexual pain score, namely neuroticism (p<0.001), age group (p=0.002), level of education (0.009), and use of contraceptives (0.023). Those with the first quartile (p<0.001) and second quartile (p=0.014) of neuroticism had significantly higher pain scores as compared to those with the fourth quartile. All three age groups, below 50, have a highly significant higher pain score (p<0.002) as compared to those aged 50 and above. Those with secondary or lower education had a significantly lower pain score than those with higher education (tertiary education) (p=0.009). Those who used contraceptives had significantly higher pain scores than those who did not use (p=0.023). The rest of the variables are not significant with the sexual pain. Details are presented in Table I and Fig. 1.

Table I: Significant factors associated with sexual pain

Independent variables	*b* coeff.[a]	95% CI[b]		*t* stat.	*p-value*
		Lower	Upper		
Neuroticism					<0.001
(≤2.25) Q1	2.12	1.15	3.10	4.27	<0.001
(2.26-2.63) Q2	1.25	0.26	2.24	2.48	0.014
(2.64-3.00) Q3	0.85	-0.20	1.90	1.59	0.112
(3.01+) Q4[c]	0.00				
Age group					0.002
<30	2.80	1.11	4.49	3.26	0.001
30-39	3.32	1.65	4.98	3.92	<0.001
40-49	2.71	0.99	4.43	3.10	0.002
≥50[c]	0.00				
Education level					
Secondary or lower	-0.94	-1.65	-0.24	-2.62	0.009
Tertiary[c]	0.00				
Contraceptive use					
Yes	0.89	0.13	1.65	2.29	0.023
No[c]	0.00				

Outcome variable: Pain score
[a] regression coefficient; [b] confidence interval; [c] reference level

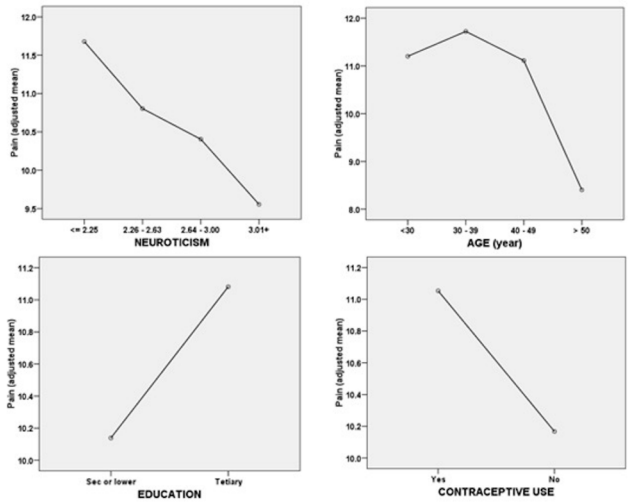

Fig 1. Significant factors with the sexual pain score
The line graph illustrates the adjusted mean pain scores across different categories of neuroticism, age, education and contraceptive use.

We explored the relationship of sexual pain and neuroticism among subgroups and found that, the relationships were significantly different across age groups (p=0.023) (Table II, Fig. 2). Though overall, the higher the neuroticism score, the lower the sexual pain score (Figure 1), the pattern of relationship was somewhat consistent across age groups <30, 30-39 and 40-49, whereas the pattern was somewhat opposite in age 50 and above (Figure 2).

Table II: Relationship between sexual pain and neuroticism in each age group

Age group	*b* coeff.[a]	95% CI[b]		*t* stat.	*p*-value
Neuroticism		Lower	Upper		
<30					0.025
(≤2.25) Q1	2.52	0.71	4.33	2.77	0.007
(2.26-2.63) Q2	1.00	-0.81	2.81	1.10	0.276
(2.64-3.00) Q3	2.45	0.35	4.54	2.31	0.023
(3.01+) Q4[c]	0.00	.	.	.	.
30-39					0.001
(≤2.25) Q1	2.44	1.20	3.68	3.88	<0.001
(2.26-2.63) Q2	1.44	0.25	2.64	2.38	0.018
(2.64-3.00) Q3	0.69	-0.57	1.96	1.08	0.281
(3.01+) Q4[c]	0.00	.	.	.	.
40-49					0.056
(≤2.25) Q1	2.00	-0.39	4.38	1.67	0.099
(2.26-2.63) Q2	0.65	-1.96	3.27	0.50	0.620
(2.64-3.00) Q3	-0.89	-3.44	1.65	-0.70	0.486
(3.01+) Q4[c]	0.00	.	.	.	.
≥50					0.632
(≤2.25) Q1	-4.67	-16.17	6.83	-0.88	0.394
(2.26-2.63) Q2	-0.50	-10.92	9.92	-0.10	0.918
(2.64-3.00) Q3	0.17	-11.67	12.00	0.03	0.976
(3.01+) Q4[c]	0.00			.	.

Outcome variable: Pain score
[a] regression coefficient; b confidence interval; [c] reference level

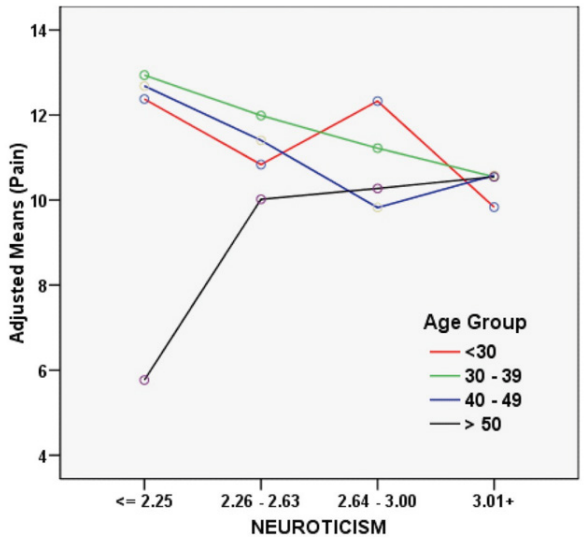

Fig. 2: Relationship between sexual pain and neuroticism in each age group
The line graph shows adjusted mean pain scores across neuroticism levels stratified by age groups. The relationship between neuroticism and pain varies across age groups, with notable differences in trends.

We also found that the sexual pain and neuroticism relationships were significantly different across sexual frequency (p=0.018) (Table III, Fig. 3). The pattern of relationship between sexual pain and neuroticism was somewhat consistent with overall (as in Figure 1) for sexual frequency once or twice (in a week), whereas the pattern was somewhat different for those having sexual frequency 3 or more (Figure 3).

Table III: Relationship between sexual pain and neuroticism in each sexual frequency

Sexual frequency	*b* coeff.[a]	95% CI[b]		*t*-stat.	*p*-value
Neuroticism		Lower	Upper		
1-2					<0.001
(≤2.25) Q1	2.51	1.32	3.69	4.17	<0.001
(2.26-2.63) Q2	2.10	0.95	3.25	3.59	<0.001
(2.64-3.00) Q3	1.37	0.13	2.60	2.18	0.030
(3.01+) Q4[c]	0.00	.	.	.	.
≥3					0.041
(≤2.25) Q1	0.67	-1.02	2.35	0.79	0.435
(2.26-2.63) Q2	-1.79	-3.73	0.15	-1.84	0.070
(2.64-3.00) Q3	-0.88	-2.87	1.12	-0.87	0.385
(3.01+) Q4[c]	0.00	.	.	.	.

Outcome variable: Pain score,
[a] regression coefficient; b confidence interval; c reference level

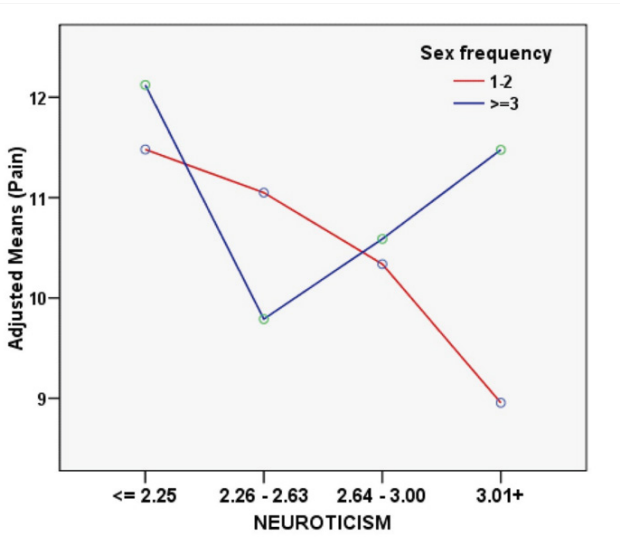

Fig. 3: Relationship between sexual pain and neuroticism in each sexual frequency
The graph presents adjusted mean pain scores across neuroticism levels, stratified by sexual frequency. Women with higher neuroticism and lower sexual frequency report higher pain scores, highlighting an interaction effect.

DISCUSSION

In Malaysian society, especially in Malay society, women are not expected to willingly express their sexual needs and discomforts, especially in communicating their sexual pain and other sexual matters, as cultural factors, and Islam prohibits public sexual disclosure except only for medical management reasons and counselling (23). Our study focused on women in suburban and rural areas to maintain the heterogeneity of the sample. To the best of our knowledge, there were no studies done on the Malaysian female population regarding neuroticism personality traits and their association with sexual pain. Our study demonstrated that neuroticism among women was associated with sexual pain, and our findings supported that age and frequency of sexual intercourse (SI) do matter in these two dyadic relationships. As this is a cross-sectional study, we can only establish a correlation.

To our understanding, personality is a pattern of pervasive characteristics that include behaviour and thoughts, which are stable and consistent across time and responsible for determining and modifying stress when a human is exposed to a high-stress level. Neuroticism has been proposed as a predisposing determinant for the development and perpetuation of psychopathology, including sexual problems (11). Based on the Five-Factor Model, personality is measured by five dimensions. The described domains include neuroticism, openness, conscientiousness, and agreeableness (11,12,24,25).

Neuroticism refers to the lack of affective or emotional firmness and the presence of negative affect. The adverse effect includes extraversion, which consists of the ability to socialise, the presence of a constructive affect, and conscientiousness. A study by Eysenck (26,27) found that the poor emotionality attribute of neuroticism, such as anxiety and guilty feelings, would deter the expression of sexuality. Similarly, a study also reported a moderate relationship between neuroticism and sexually specific fears; thus, more anxiety was experienced and negatively related to sexual expression and motivation (26).

Neuroticism, as a complex-order personality trait, was confirmed to be directly associated with sexual pain, and pain catastrophising served as a potential mediating factor to this association (28). First, pain catastrophising partly intervened in the correlation between neuroticism and pain intensity, indicating the significance of pain catastrophising in increasing exposure to pain (29). Second is the role of hypervigilance, as Payne and colleagues found a study on attentional developments in women with sexual pain using an unspoken measure, as women with sexual pain were hypervigilant to "pain-based" evidence as determined by the Emotional Stroop Task (30). The experience of hypervigilance is repeatedly quoted to explain the heightened experience of pain. Third, mental health issues play a role in mediation, as a higher score on neuroticism is more likely to notice and attend to internal bodily sensations and less aches (31). Therefore, they have an attentional scanning of both external and internal environments and are charged with anxiety, psychopathology, and uncertainty. Also, the personality attribute of introversion–extraversion may change the selection of attention to pain (10,11). Fourth, neuroticism may even reduce the pain threshold, which is perceived as threatening, exacerbating the pain elicitation of catastrophic thoughts. Our study may support a dynamic perspective of personality where behaviours are adapted to the setting or context.

The findings of this study have important implications both in theory and in practice. Our study found a substantial relationship between sexual pain and a decreased SI. The study revealed that females who have sexual pain may reduce their SI frequency due to the possible discomfort experienced, which is the best explanation for this association. Women with neuroticism who have sexual pain may have less SI to avoid the pain. Given that one of the defining components of neuroticism is negative affectivity, perhaps part of the effect of neuroticism on pain experience is due to the operating negative mood regulation.

In terms of the relationship between sexual pain and aging, this study indicates that aging is associated with a decrease in sexual pain. At this current juncture, a partial list of mechanisms responsible is possibly due to age-related adjustments in pain sensitivity, including physiological (e.g., central sensitisation), anatomical, age-related plasticity, neuroendocrine-inflammatory, and autonomic dysregulation, with each factor having its inherent level of intricacy and complexity. For example, ageing can be considered as one of the factors. Ageing

brings life transitions that can create opportunities for older adults to redefine what sexual pain, sexuality, and intimacy mean to them. Some older adults strive for both a sexual and intimate relationship, some are content with one without the other, and the observed reduced sexual pain is probably due to the lesser sensation among elderly females.

Individuals socialized with traditional gender roles may perceive pain differently. They are more or less likely to report it based on those expectations. As an example, men may be more likely to suppress their pain expression due to perceived "defender and masculine norms". At the same time, women may be more likely to report pain due to societal expectations about their pain experience. Culture influences the experience, meaning, and expression of sexual pain, as well as help-seeking behaviour. For example, different cultures have variable norms regarding how pain is articulated and perceived. Different cultures may encourage the expression of indifference in facial pain, while others may communicate it more openly. Cultural and social beliefs about pain, including its causes and significance, can influence how individuals interpret and cope with sexual pain.

Due to the predominance of Malay women among respondents, the findings may not accurately reflect the perspectives of all women from diverse backgrounds within the Malaysian population. Most non-Malays approached were not fluent in Malay or English; thus, they were reluctant to participate in the study. With these limitations, the authors soon recommended using other validated FSFI questionnaires in various languages. Another constraint that we had was the lack of inclusion of all sexually active females and reporting bias. These limitations might also contribute to the inability to grasp the substantial problems related to sexual pain in the population. In our study, those who were not married were approached, and only 1.7% of the respondents were unmarried but sexually active.

CONCLUSION

Neuroticism personality traits and other factors, such as older age, less sexual frequency, and lower education, are associated with sexual pain. Identifying the type of personality the patients may have is pivotal for more holistic and comprehensive management. These findings have significant consequences and considerations for the knowledge of sexual problems and the development of treatment and preventive measures. Personality assessment, especially neuroticism, should be incorporated into routine history taking and evaluation, as this will help better understand the patient in planning the treatment protocol. Hopefully, the findings of this study will support health practitioners in including the screening of personality traits in the treatment of sexual pain. Further research is paramount to understanding the dynamics of the dyad, which would enable a more holistic approach to treatment.

ACKNOWLEDGEMENT

Gratitude is extended to all participants for their time and insights, which were crucial to this study. Appreciation is also expressed to the Public Health Department of Malacca and Health Clinics for the support provided in facilitating the research process. Lastly, the contributions of the research team and colleagues, whose constructive feedback and encouragement were invaluable, are gratefully acknowledged.

REFERENCE

1. Arafa AE, Senosy SA. Female sexual dysfunction in Egyptian women with anxiety: prevalence and patterns. Journal of Public Health. 2018 Oct 1 [cited 2025 Jan 20];26(5):545–9. Available from: https://doi.org/10.1007/s10389-018-0896-6
2. Aksaray Cem Kaptanoğlu Süleyman Oflu Murat Ilzaltin Gıkay BY. Sexuality in Women with Obsessive Compulsive Disorder. J Sex Marital Ther [Internet]. 2001 May 1;27(3):273–7. Available from: https://doi.org/10.1080/009262301750257128
3. Basson R, Leiblum S, Brotto L, Derogatis L, Fourcroy J, Fugl-Meyer K, et al. Revised Definitions of Women's Sexual Dysfunction. J Sex Med. 2004 Jul 1;1(1):40–8. Available from: https://doi.org/10.1111/j.1743-6109.2004.10107.x
4. Basson R. Women's sexual dysfunction: revised and expanded definitions. Can Med Assoc J. 2005 May 10;172(10):1327–33. Available from: http://doi.org/10.1503/cmaj.1020174
5. Forbes MK, Baillie AJ, Eaton NR, Krueger RF. A Place for Sexual Dysfunctions in an Empirical Taxonomy of Psychopathology. The Journal of Sex Research. 2017 Jun 13;54(4–5):465–85. Available from: https://doi.org/10.1080/00224499.2016.1269306
6. Christensen BS, Grønbæk M, Osler M, Pedersen B V, Graugaard C, Frisch M. Sexual Dysfunctions and Difficulties in Denmark: Prevalence and Associated Sociodemographic Factors. Arch Sex Behav. 2011;40(1):121–32. Available from: https://doi.org/10.1007/s10508-010-9599-y
7. Corretti G, Baldi I. The Relationship Between Anxiety Disorders and Sexual Dysfunction. Psychiatric Times [Internet]. 2007 Aug 1 [cited 2025 Jan 20];24:58–9. Available from: https://www.psychiatrictimes.com/view/relationship-between-anxiety-disorders-and-sexual-dysfunction
8. Figueira I, Possidente E, Marques C, Hayes K. Sexual Dysfunction: A Neglected Complication of Panic Disorder and Social Phobia. Arch Sex Behav. 2001;30(4):369–77. Available from: https://doi.org/10.1023/A:1010257214859.
9. Eysenck HJ. Personality and Sexual Adjustment.

British Journal of Psychiatry. 2018/01/29. 1971;118(547):593–608. Available from: https://doi.org/10.1192/bjp.118.547.593.
10. McCrae RR, Costa PT. A contemplated revision of the NEO Five-Factor Inventory. Pers Individ Dif. 2004 Feb;36(3):587–96. Available from: https://doi.org/10.1016/S0191-8869(03)00118-1.
11. Peixoto MM, Nobre P. Personality Traits, Sexual Problems, and Sexual Orientation: An Empirical Study. J Sex Marital Ther. 2016 Apr 2;42(3):199–213. Available from: https://doi.org/10.1080/0092623X.2014.985352.
12. McCrae RR, John OP. An Introduction to the Five-Factor Model and Its Applications. J Pers. 1992 Jun 1;60(2):175–215. Available from: https://doi.org/10.1111/j.1467-6494.1992.tb00970.x
13. Costa Jr. PT, McCrae RR. Neuroticism, Somatic Complaints, and Disease: Is the Bark Worse than the Bite? J Pers [Internet]. 1987 Jun 1;55(2):299–316. Available from: https://doi.org/10.1111/j.1467-6494.1987.tb00438.x
14. Costa PT, McCrae RR. The Revised NEO Personality Inventory (NEO-PI-R). In: Boyle GJ, Matthews G, Saklofske DH, editors. The SAGE Handbook of Personality Theory and Assessment: Volume 2 — Personality Measurement and Testing. 1st ed. London, United Kingdom: SAGE Publications Ltd; 2008. p. 179–98. Available from: https://doi.org/10.4135/9781849200479.n9.
15. Geisser ME, Roth RS, Theisen ME, Robinson ME, Riley JLIII. Negative Affect, Self-Report of Depressive Symptoms, and Clinical Depression: Relation to the Experience of Chronic Pain. Clin J Pain. 2000;16(2). Available from: https://doi.org/10.1097/00002508-200006000-00004.
16. Watson D, Pennebaker JW. Health complaints, stress, and distress: Exploring the central role of negative affectivity. Psychol Rev. 1989;96(2):234–54. Available from: https://doi.org/10.1037/0033-295X.96.2.234.
17. Meana M, Lykins A. Negative Affect and Somatically Focused Anxiety in Young Women Reporting Pain With Intercourse. J Sex Res. 2009 Feb 3;46(1):80–8. Available from: https://doi.org/10.1080/00224490802624422.
18. Muhamad H, Roodenburg J, Moore DW. The adaptation of the Big Five Inventory in measuring Malaysian youths' personality traits. International Journal of Advanced and Applied Sciences. 2018 Jul;5(7):8–14. Available from: https://doi.org/10.21833/ijaas.2018.07.002.
19. Sidi H, Abdullah N, Puteh SEW, Midin M. The Female Sexual Function Index (FSFI): Validation of the Malay Version. J Sex Med. 2007;4(6):1642–54. Available from: https://doi.org/10.1111/j.1743-6109.2007.00476.x.
20. Goldberg LR. The structure of phenotypic personality traits. American Psychologist. 1993;48(1):26–34. Available from: https://doi.org/10.1037/0003-066X.48.1.26.
21. R Core Team. R: A Language and Environment for Statistical Computing [Internet]. Vienna, Austria: R Foundation for Statistical Computing; 2024. Available from: https://www.R-project.org/
22. RStudio Team. RStudio: Integrated Development for R. . Boston, MA: RStudio, Inc.; 2024.
23. Sidi H, Shaharom MH, Hassan R. Seksualiti Manusia : Keharmonian Jalinan Antara Jantina (Human sexuality: The Harmony Between Sexes). Kuala Lumpur: Dewan Bahasa dan Pustaka; 2006.
24. John OP. The 'Big Five' factor taxonomy: Dimensions of personality in the natural language and in questionnaires. In: Pervin LA, editor. Handbook of personality: Theory and research . The Guilford Press; 1990. p. 66–100.
25. MacDonald K. Evolution, the Five-Factor Model, and Levels of Personality. J Pers. 1995 Sep 28;63(3):525–67. Available from: https://doi.org/10.1111/j.1467-6494.1995.tb00505.x.
26. Mitchell RLC, Kumari V. Hans Eysenck's interface between the brain and personality: Modern evidence on the cognitive neuroscience of personality. Pers Individ Dif. 2016 Dec;103:74–81. Available from: https://doi.org/10.1016/j.paid.2016.04.009.
27. Bech P. Neuroticism (Eysenck's Theory). In: Zeigler-Hill V, Shackelford TK, editors. Encyclopedia of Personality and Individual Differences. Rochester, USA: Springer International Publishing; 2016. p. 1–4. Available from: https://doi.org/10.1007/978-3-319-28099-8_1094-1.
28. Rhudy JL, Martin SL, Terry EL, France CR, Bartley EJ, DelVentura JL, et al. Pain catastrophizing is related to temporal summation of pain but not temporal summation of the nociceptive flexion reflex. Pain. 2011 Apr;152(4):794–801. Available from: https://doi.org/10.1016/j.pain.2010.12.041.
29. Banozic A, Miljkovic A, Bras M, Puljak L, Kolcic I, Hayward C, et al. Neuroticism and pain catastrophizing aggravate response to pain in healthy adults: an experimental study. Korean J Pain. 2018 Jan 31;31(1):16–26. Available from: https://doi.org/10.3344/kjp.2018.31.1.16
30. Payne KA, Binik YM, Amsel R, Khalifй S. When sex hurts, anxiety and fear orient attention towards pain. European Journal of Pain. 2005 Aug 11;9(4):427–427. Available from: https://doi.org/10.1016/j.ejpain.2004.10.003.
31. Hosseini F, Beygi Z, Yazdanpanahi Z, Akbarzadeh M. The Relationship Between Personality Types and Sexual Dysfunction. Current Women's Health Reviews. 2021 Mar 16;17(2):128–35. Available from: https://doi.org/10.2174/1573404817666201221121247