



Faculty of Cognitive Sciences and Human Development

**Unveiling the Dynamics of Elderly Life in Nursing Homes in China: A
Study on Quality of Life, Life Satisfaction, Loneliness, and Quality of
Care**

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Unveiling the Dynamics of Elderly Life in Nursing Homes in China: A Study
on Quality of Life, Life Satisfaction, Loneliness, and Quality of Care

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DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Malaysia Sarawak. Except where due acknowledgements have been made, the work is that of the author alone. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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ABSTRACT

This study investigates the intricate relationships between loneliness, quality of care, quality of life, and life satisfaction among elderly nursing home residents in China. In the realm of contemporary gerontological research, understanding the psychosocial factors that influence well-being in institutional settings is of paramount significance for the sustainable development of eldercare. The purpose of this study is to examine how loneliness impacts life satisfaction through direct and indirect pathways. More specifically, this research investigates the mediating role of quality of life and the moderating effect of quality of care in these relationships. A systematic survey was conducted across 12 nursing facilities in four Chinese cities, resulting in 439 respondents after data screening. Structural equation modeling with bootstrapping revealed that loneliness significantly diminished life satisfaction both directly ($\beta = -0.285$, $p < .001$) and indirectly through quality of life ($\beta = -0.181$, 95% CI [-0.239, -0.128]). Quality of care emerged as a significant protective factor, with the negative impact of loneliness being substantially weaker in high-quality care environments ($\beta = -0.128$ at +1SD) compared to low-quality settings ($\beta = -0.235$ at -1SD). Notably, residents receiving counseling services demonstrated markedly better outcomes across all measures (Cohen's $d = 0.67-0.90$). The results show that quality of care moderates all pathways in the model, explaining substantial variance in both life satisfaction (48.7%) and quality of life (39.2%). These findings provide crucial insights for enhancing institutional care quality and implementing targeted interventions that address the complex determinants of well-being among nursing home residents.

Key words: Quality of life, Loneliness, Life Satisfaction, Quality of Care, Elderly, Nursing homes, China.

Mendedahkan Dinamik Kehidupan Warga Emas di Rumah Penjagaan di China: Kajian tentang Kualiti Hidup, Kepuasan Hidup, Kesepian, dan Kualiti Penjagaan

ABSTRAK

Kajian ini menyiasat hubungan kompleks antara kesepian, kualiti penjagaan, kualiti hidup, dan kepuasan hidup dalam kalangan penduduk warga emas di rumah jagaan warga tua di China. Dalam bidang penyelidikan gerontologi kontemporari, memahami faktor-faktor psikososial yang mempengaruhi kesejahteraan dalam persekitaran institusi memegang kepentingan yang utama untuk pembangunan penjagaan warga emas yang mampan. Tujuan kajian ini adalah untuk mengkaji bagaimana kesepian memberi kesan kepada kepuasan hidup melalui laluan langsung dan tidak langsung. Secara lebih khusus, penyelidikan ini menyiasat peranan pengantara kualiti hidup dan kesan penyederhanaan kualiti penjagaan dalam hubungan ini. Satu tinjauan sistematik telah dijalankan di 12 kemudahan penjagaan warga tua di empat bandar China, menghasilkan 439 responden selepas penyaringan data. Pemodelan persamaan struktur dengan bootstrapping mendedahkan bahawa kesepian dengan ketara mengurangkan kepuasan hidup secara langsung ($\beta = -0.285, p < .001$) dan secara tidak langsung melalui kualiti hidup ($\beta = -0.181, 95\% \text{ CI } [-0.239, -0.128]$). Kualiti penjagaan muncul sebagai faktor perlindungan yang signifikan, dengan kesan negatif kesepian yang jauh lebih lemah dalam persekitaran penjagaan berkualiti tinggi ($\beta = -0.128$ pada $+1\text{SD}$) berbanding dengan persekitaran berkualiti rendah ($\beta = -0.235$ pada -1SD). Terutamanya, penduduk yang menerima

perkhidmatan kaunseling menunjukkan hasil yang jauh lebih baik dalam semua ukuran (Cohen's $d = 0.67-0.90$). Keputusan menunjukkan bahawa kualiti penjagaan menyederhanakan semua laluan dalam model, menjelaskan varians yang substantial dalam kedua-dua kepuasan hidup (48.7%) dan kualiti hidup (39.2%). Penemuan ini memberikan pandangan penting untuk meningkatkan kualiti penjagaan institusi dan melaksanakan intervensi yang disasarkan yang menangani penentu kompleks kesejahteraan dalam kalangan penduduk rumah jagaan warga tua.

Kata kunci: *Kualiti hidup, Kesepian, Kepuasan hidup, Kualiti penjagaan, Warga emas, Rumah jagaan, China.*

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter provides a comprehensive framework for the study examining loneliness, quality of care, quality of life, and life satisfaction among elderly residents in Chinese nursing homes. Beginning with an overview of China's demographic aging crisis and its implications for institutional eldercare, the chapter establishes the research context and significance. It then presents the problem statement, highlighting key knowledge gaps in understanding how psychosocial factors interact within Chinese institutional settings. The chapter proceeds to articulate the specific research questions and objectives guiding this investigation, with particular focus on the mediating role of quality of life and moderating effect of quality of care in the loneliness-life satisfaction relationship. Following this, the chapter outlines the study's theoretical, practical, and policy significance, defines its geographical and population scope, and provides operational definitions of key terms. The chapter concludes with an overview of the dissertation's organization, mapping the progression from theoretical foundation through methodological design to empirical findings and implications. Through this structured approach, Chapter 1 establishes both the scholarly rationale and practical importance of investigating elderly well-being in China's rapidly evolving nursing home landscape.

1.2 Background of the Study

Population aging has emerged as one of the most significant demographic transformations of the 21st century, posing unprecedented challenges to healthcare systems worldwide (Behrendt et al., 2023). The rapid increase in the aging population has led to growing demands for specialized care services, particularly in institutional settings such as nursing homes. China, with its rapidly aging demographic profile, faces particularly acute challenges in this regard. By 2020, China's elderly population (aged 60 and above) had reached 249 million, representing 17.9% of the total population, with projections indicating this will rise to 34.8% by 2050 (Chew, 2022). This demographic shift places enormous pressure on traditional family-based care systems and necessitates the development of formal elderly care services, including nursing homes.

The global landscape of elderly care has witnessed a paradigm shift in recent decades, with nursing homes evolving from primarily custodial institutions to complex care environments that increasingly emphasize person-centered approaches and quality of life outcomes (Dung et al., 2020). This transformation reflects broader societal recognition of the multidimensional nature of elderly care, encompassing not only physical health maintenance but also psychological support, social engagement, and preservation of dignity and autonomy (Ge et al., 2024). Despite these advancements, significant challenges persist in ensuring optimal care quality and addressing the complex psychosocial needs of nursing home residents, particularly regarding issues of loneliness, social isolation, and life satisfaction (Li et al., 2021).

In China, the development of nursing homes has followed a unique trajectory shaped by cultural, economic, and demographic factors. Traditional values emphasizing filial piety and family-based elder care have historically limited the development of institutional care services (Li et al., 2021). However, changing family structures, urbanization, and the unprecedented pace of population aging have catalyzed rapid expansion of the nursing home sector in recent decades (Power et al., 2005). This expansion has raised important questions about care quality, resident well-being, and the capacity of these institutions to address the complex needs of China's elderly population.

Mental health and life satisfaction among elderly nursing home residents have gained increasing recognition as critical dimensions of successful aging and quality care (Tucker et al., 2022). Mental health in late life encompasses a multidimensional state of psychological well-being characterized by emotional regulation, cognitive functioning, positive self-perception, and meaningful social engagement (van Dyck et al., 2020). For elderly individuals residing in institutional settings, maintaining optimal mental health presents unique challenges, as the transition to nursing home residence often coincides with significant life adjustments, including separation from familiar environments and confrontation with increasing dependency (L. Wang et al., 2020).

Loneliness, characterized as a subjective, negative emotional response to a perceived discrepancy between desired and actual social relationships, has emerged as a particularly prevalent and concerning issue among nursing home residents (Zhang et al., 2020). Studies indicate that 40-60% of nursing home residents in China experience

feelings of loneliness, significantly higher than the 20-30% prevalence rate among community-dwelling elderly (Y. Zhao et al., 2021). This psychological distress has been associated with numerous adverse outcomes, including decreased quality of life, impaired cognitive function, and increased mortality rates among institutionalized elderly (Yeh et al., 2021).

The quality of care provided in nursing homes represents another crucial determinant of residents' overall experience and well-being (van Dyck et al., 2020). Contemporary conceptualizations of care quality have expanded beyond traditional clinical metrics to incorporate interpersonal dimensions of care, environmental factors, and resident-centered outcomes (Bahadir-Yilmaz, 2024). This comprehensive perspective aligns with the capability approach articulated by Coast and colleagues, which emphasizes the importance of assessing quality of life rather than merely health outcomes in evaluating interventions for older people (Banerjee et al., 2018).

Despite growing recognition of these issues, significant research gaps exist regarding the complex interrelationships between loneliness, quality of care, quality of life, and life satisfaction among nursing home residents, particularly within the Chinese context. The existing literature has largely examined these factors in isolation, limiting our understanding of how they interact to influence overall well-being (Cen et al., 2022). Moreover, the unique cultural, social, and institutional characteristics of Chinese nursing homes necessitate context-specific research to develop appropriate interventions and care models (L. Wang et al., 2020).

This study aims to address these research gaps by investigating the levels of loneliness and life satisfaction among elderly residents in Chinese nursing homes, examining the influence of loneliness on life satisfaction, exploring the mediating role of quality of life in this relationship, and evaluating the moderating effect of quality of care. By adopting a comprehensive approach that incorporates both quantitative measurements and theoretical frameworks, this research seeks to provide a nuanced understanding of the complex dynamics affecting the psychological well-being of institutionalized elderly in China (Li et al., 2021).

The findings from this study will have significant implications for both theory and practice. From a theoretical perspective, this research will enhance understanding of the psychological mechanisms linking loneliness, quality of care, quality of life, and life satisfaction within institutional settings. From a practical standpoint, the results will inform the development of targeted interventions aimed at reducing loneliness, improving quality of care, enhancing quality of life, and ultimately increasing life satisfaction among nursing home residents (Wu et al., 2022). For policy-makers and healthcare administrators, this research will offer evidence-based recommendations for improving nursing home services and developing standards for quality assessment in elderly care facilities, ultimately contributing to the well-being of this vulnerable population.

1.2.1 Current Status of Aging in China

China is experiencing population aging at an unprecedented pace and scale that poses extraordinary challenges to its socioeconomic development and healthcare systems (Zhang et al., 2020). The demographic transition in China has occurred with remarkable rapidity; while France required 115 years and the United States 69 years to double their elderly population from 7% to 14%, China has accomplished this demographic transformation in merely 27 years (X. Zhao et al., 2018). According to the National Bureau of Statistics, by the end of 2021, China's population aged 60 and above reached 267 million, constituting 18.9% of the total population, with those aged 65 and above reaching 200 million, representing 14.2% of the population (Yucel, 2023). This dramatic demographic shift stems primarily from the combined effects of the one-child policy implemented in 1979, which substantially reduced fertility rates, and significant improvements in life expectancy, which increased from 43.7 years in the 1960s to 77.3 years by 2019 (Zhang et al., 2020).

Demographic projections indicate that China's aging trajectory will continue to accelerate, with the proportion of the population aged 60 and above expected to reach 28% by 2040 and exceed 30% by 2050 (Yucel, 2023). The demographic transition in China exhibits several distinctive characteristics that differentiate it from the aging patterns observed in developed countries. These include the sheer magnitude of the elderly population in absolute numbers, the extraordinary pace of population aging, and the phenomenon commonly described as "getting old before getting rich," as China's per capita

income remains substantially lower than that of developed countries that underwent similar demographic transitions. Additionally, China faces the formidable challenge of a declining old-age support ratio, projected to decrease from 6.4 working-age adults per elderly person in 2000 to merely 2.1 by 2040, raising serious concerns about the sustainability of current elderly care arrangements.

The developmental trajectory of China's elderly care service system has undergone significant evolution over recent decades, transitioning from a predominantly family-based care model deeply rooted in Confucian principles of filial piety to a more diversified system incorporating institutional, community, and home-based care services. Historically, families bore primary responsibility for supporting aging parents, with minimal government intervention or formal service provision. However, profound demographic shifts, accelerating urbanization, internal migration patterns, and transformations in family structures have progressively strained this traditional model, necessitating the development of formal elderly care services to complement family-based support (X. B. Zhong & V. W. Q. Lou, 2013). The institutional care sector has experienced remarkable expansion in response to these changing dynamics, with the number of registered nursing homes increasing from approximately 44,300 in 2012 to over 78,000 by the end of 2020, providing around 8.2 million beds nationwide. Despite this substantial growth, the coverage rate remains limited compared to international standards, with institutional beds accounting for only about 3% of the elderly population, significantly below the 5-7% typically observed in developed countries (Y. Zhao et al., 2021).

China's elderly care policies have undergone substantial evolution over the past four decades, reflecting changing demographic realities and political priorities. The initial phase of policy development (1982-1999) established fundamental principles regarding elderly care, exemplified by the 1982 Constitution and the 1996 Law on the Protection of the Rights and Interests of the Elderly, which affirmed the importance of respecting and caring for elderly citizens while maintaining emphasis on family-based support (X. Zhao et al., 2018). The second phase (2000-2010) marked the gradual recognition of population aging as a national strategic issue, with preliminary efforts to develop formal elderly care services, though these remained relatively limited in scope and ambition (Zhang et al., 2020). The third phase (2011-present) has witnessed a significant acceleration of policy development, characterized by more comprehensive approaches to addressing population aging, exemplified by the 12th Five-Year Plan (2011-2015), which for the first time explicitly included the development of an elderly care system as a national priority.

Recent policy initiatives have increasingly emphasized the development of a three-tiered elderly care system integrating home-based care as the foundation, community-based services as support, and institutional care as supplementary, encapsulated in the "9073" service framework targeting 90% of elderly living at home, 7% receiving community-based care, and 3% residing in institutions. The 2019 Opinions on Promoting the Development of Elderly Care Services marked a significant policy advancement by outlining comprehensive measures to address service quality, workforce development, and market regulation, while the 14th Five-Year Plan (2021-2025) further

prioritized the development of a high-quality, accessible, and sustainable elderly care system (Yeh et al., 2021).

These policy changes have profoundly influenced the development of nursing homes in China across multiple dimensions. Regulatory reforms have established standardized requirements for facility design, staffing ratios, and service provision, while simultaneously liberalizing market entry to encourage private sector participation, leading to a more diverse landscape of institutional care providers catering to different socioeconomic segments. Financial incentives, including operational subsidies, tax benefits, and land allocation preferences, have stimulated capacity expansion, though significant regional disparities persist, with more developed eastern regions having substantially higher service availability compared to central and western regions (Wu et al., 2022). Quality assurance mechanisms have evolved from basic licensing requirements to more comprehensive evaluation systems incorporating both structural indicators and resident-centered outcomes, though implementation remains inconsistent across different localities and provider types. While these policy initiatives have facilitated substantial growth in institutional care capacity, challenges persist regarding affordability, service quality, workforce development, and the integration of medical and social care services, highlighting the continued evolution of China's approach to addressing the complex needs of its rapidly aging population (Q. Wang et al., 2024).

1.2.2 Current Status of Nursing Homes in China

The institutional care landscape in China has undergone remarkable expansion in recent years, reflecting policy priorities to address the needs of a rapidly aging population. According to the Ministry of Civil Affairs, the number of registered nursing homes and elderly care institutions in China increased from approximately 44,300 in 2012 to over 78,000 by the end of 2020, with a corresponding rise in bed capacity from 3.9 million to 8.2 million. This expansion represents a compound annual growth rate of approximately 7.3% in institutional numbers and 9.7% in bed capacity, significantly outpacing the growth rate of the elderly population during the same period (L. Wang et al., 2020). Despite this substantial expansion, the coverage rate remains relatively limited, with institutional beds accounting for approximately 3% of the elderly population, substantially below the 5-7% observed in most developed countries. The distribution of nursing homes across China exhibits significant geographical variation, with coastal provinces and major metropolitan areas demonstrating substantially higher institutional density compared to inland and rural regions. For instance, Shanghai, Beijing, and Jiangsu provinces have achieved bed ratios exceeding 40 per 1,000 elderly residents, while provinces in the central and western regions often report ratios below 25 per 1,000 elderly residents, highlighting pronounced regional disparities in service accessibility (Vetrano et al., 2018).

The ownership structure of nursing homes in China has diversified considerably, evolving from a system dominated by government-operated welfare institutions to a more pluralistic landscape incorporating public, private, and mixed ownership models.

Government statistics indicate that by 2020, approximately 43% of nursing homes were privately operated, 32% were publicly owned and operated, and 25% represented various hybrid models including public-private partnerships and community-based facilities (van Dyck et al., 2020). This diversification reflects policy initiatives encouraging private sector participation in elderly care services, including tax incentives, subsidized land allocation, and streamlined registration procedures. However, a notable segmentation has emerged in the institutional care market, with public facilities predominantly serving welfare recipients and low-income populations, while private institutions primarily cater to middle and higher-income groups, potentially exacerbating inequalities in care access and quality (Tucker et al., 2022).

Significant disparities exist in nursing home facilities and service quality across China, influenced by factors including geographical location, ownership type, facility age, and target demographic. A comprehensive assessment conducted by the China Research Center on Aging revealed that approximately 32% of nursing homes nationwide could be classified as high-quality facilities offering comprehensive medical care integration, specialized dementia services, and robust psychosocial programming; 45% as medium-quality facilities providing basic care services with limited specialized offerings; and 23% as lower-quality facilities struggling to meet fundamental standards for staffing, safety, and service provision. These quality disparities are often associated with substantial variations in physical infrastructure, with newer facilities generally featuring purpose-built environments incorporating age-friendly design principles, while older institutions

frequently operate in retrofitted buildings with significant environmental limitations that compromise care delivery and resident quality of life (Trybusińska & Saracen, 2019).

Staffing represents another critical dimension of quality variation, with national surveys indicating average staff-to-resident ratios ranging from 1:4.5 in top-tier urban facilities to 1:8.2 in lower-tier institutions, compared to recommended standards of 1:3 for high-dependency residents (Swakowska et al., 2024). Professional qualification levels exhibit similar disparities, with gerontological training and certification rates among care staff varying from approximately 75% in leading urban institutions to below 30% in rural facilities. These staffing challenges reflect persistent difficulties in recruitment and retention of qualified personnel, attributable to factors including relatively low wages, limited career advancement opportunities, physically demanding work conditions, and the relatively low social status associated with elderly care occupations (Sköldunger et al., 2020).

Occupancy rates in Chinese nursing homes present a paradoxical situation that reveals complex dynamics influencing institutional care utilization. Despite the apparent insufficiency of capacity relative to demographic needs, national occupancy rates have averaged 78% in recent years, with substantial variation across regions and facility types (Sjölund et al., 2021). High-end private facilities in major cities often report occupancy rates exceeding 90%, while some public institutions and lower-tier private facilities, particularly in less developed regions, operate at occupancy levels below 70% (Silva et al., 2020). This seemingly contradictory phenomenon of simultaneous capacity constraints and

underutilization reflects multifaceted barriers to nursing home utilization, including affordability limitations, strong cultural preferences for family-based care, concerns about institutional quality, and geographical mismatches between supply and demand (Sheikh et al., 2021).

Demand patterns for nursing home care in China are undergoing significant transformation, influenced by shifting demographics, changing family structures, and evolving sociocultural attitudes. Traditionally, institutional care was primarily utilized by elderly individuals without family support (known as "Three No's" elderly—no capable children, no income, and no functional ability); however, recent years have witnessed growing utilization by elderly with families who require specialized care beyond what family caregivers can provide. This shift is particularly pronounced for the elderly with high-dependency conditions including advanced dementia, severe physical disabilities, and complex medical needs requiring professional management (Rosén et al., 2019). Additionally, emerging evidence suggests gradual moderation in cultural resistance to institutional care among urban families, particularly when facilities demonstrate high-quality environments and service standards that support dignity, autonomy, and continuing family involvement. Looking forward, demographic projections and socioeconomic trends suggest accelerating demand for institutional care, with estimated requirements for 11.3 million nursing home beds by 2030 and potentially 15.7 million by 2050, necessitating continued expansion and quality enhancement of China's nursing home

sector to address the complex care needs of its rapidly aging population (Prihatama et al., 2023).

1.2.3 Mental Health Challenges of Elderly in Nursing Homes

Elderly residents in nursing homes face a complex constellation of mental health challenges that significantly impact their quality of life and overall well-being. The institutional environment, while designed to provide necessary physical care and supervision, often presents distinct psychological stressors that can exacerbate existing mental health vulnerabilities or precipitate new psychological difficulties (Power et al., 2005). Depression stands as one of the most prevalent mental health conditions among nursing home residents in China, with epidemiological studies indicating prevalence rates ranging from 32.4% to 45.8%, substantially exceeding the 10.3% to 15.2% observed among community-dwelling elderly counterparts. This elevated prevalence is associated with multiple risk factors specific to the institutional context, including the loss of familiar environments, diminished autonomy, limited privacy, forced social interactions, and the perception of nursing home admission as signaling the final life stage (Power et al., 2005). Compounding these challenges, depression in nursing home settings frequently goes unrecognized and untreated, with studies suggesting that approximately 65% of cases remain undiagnosed and only 38% of identified cases receive adequate intervention, reflecting both insufficient mental health assessment protocols and limited specialized psychiatric resources within many facilities.

Anxiety disorders represent another significant mental health concern, affecting approximately 22% to 34% of nursing home residents according to recent Chinese studies, with generalized anxiety disorder, adjustment disorders with anxious features, and specific phobias being particularly common presentations (Pigłowska et al., 2023). Cognitive impairment and dementia constitute perhaps the most challenging mental health issues in nursing home settings, with prevalence estimates ranging from 36% to 64% depending on facility type and admission criteria (Oliveira et al., 2016). These conditions present complex care requirements that many Chinese nursing homes are inadequately equipped to address, with only 27% of facilities reporting specialized dementia care units and merely 18% indicating staff with specific dementia care training (Naik & Ueland Ph, 2020). Beyond these major diagnostic categories, nursing home residents frequently experience subclinical psychological distress, including grief reactions, identity disruption, and existential concerns that significantly impact their quality of life despite not meeting formal criteria for psychiatric diagnoses (Li et al., 2021).

Loneliness represents a particularly pervasive psychological challenge among nursing home residents, with profound implications for mental and physical health outcomes. Studies conducted in Chinese nursing homes indicate alarmingly high prevalence rates of loneliness, with 60-70% of residents reporting moderate to severe feelings of loneliness, substantially exceeding the 20-30% typically observed in community-dwelling elderly populations. This elevated prevalence reflects the complex interplay of multiple contributing factors, including disruption of established social

networks, death of contemporaries, sensory and functional limitations that impede social interaction, and the frequently impersonal nature of institutional environments that prioritize physical care over psychosocial needs (Kane et al., 2003). Research has identified several institutional characteristics associated with increased loneliness, including larger facility size, higher staff turnover, limited activity programming, restricted community integration, and care approaches that emphasize efficiency over personalization and relationship-building. The consequences of loneliness extend beyond subjective distress to encompass numerous adverse outcomes, with longitudinal studies documenting associations between loneliness and accelerated cognitive decline, worsening physical health, reduced treatment adherence, increased healthcare utilization, and elevated mortality risk among nursing home residents (Ikeda-Sonoda et al., 2020).

The loneliness experience in Chinese nursing homes is further shaped by distinctive cultural factors, including the profound value traditionally placed on family cohesion, the Confucian emphasis on filial responsibility, and the perception of institutional placement as potentially representing family abandonment (Ge et al., 2024). These cultural dimensions can intensify feelings of disconnection and existential isolation, particularly when family visitation is infrequent or when residents perceive their institutional placement as contradicting cultural expectations regarding end-of-life care. Importantly, research indicates substantial heterogeneity in the loneliness experience, with protective factors including preserved cognitive function, availability of meaningful activities, opportunities for continued contribution, maintenance of some decision-making autonomy,

and regular family involvement. Recent intervention studies have demonstrated promising results in reducing loneliness through approaches including intergenerational programs, reminiscence therapy, horticultural activities, and technology-facilitated family communication, though implementation of such programs remains inconsistent across Chinese nursing homes (Ergin et al., 2023).

Life satisfaction has emerged as a critical indicator of overall well-being among nursing home residents, reflecting their subjective evaluation of their quality of life within the institutional context. Research indicates that life satisfaction among Chinese nursing home residents' averages significantly lower than that of community-dwelling counterparts, with mean scores typically 15-25% below community norms on standardized assessment instruments (Edvardsson et al., 2010). Multiple domains contribute to life satisfaction, including perceived health status, physical comfort, autonomy and control, meaningful activities, social relationships, spiritual well-being, and dignity preservation. The institutional factors most strongly associated with enhanced life satisfaction include person-centered care approaches, environmental quality, activity programming diversity, consistency in staffing, integration of resident preferences into care planning, and opportunities for continued community engagement (Dung et al., 2020). Notably, studies indicate that the relationship between objective care quality indicators and subjective life satisfaction is often moderated by cultural congruence, suggesting the importance of aligning institutional practices with residents' cultural values and expectations.

The interconnections between mental health challenges, loneliness, and life satisfaction underscore the importance of holistic approaches to nursing home care that address not only physical needs but also psychological and social dimensions of well-being. While the Chinese nursing home sector has made significant strides in expanding capacity and enhancing medical service integration, substantial opportunities remain for improving mental health supports, implementing evidence-based psychosocial interventions, and developing care models that more effectively nurture social connectedness and subjective quality of life among this vulnerable population.

1.3 Problem Statement

Loneliness among elderly residents in Chinese nursing homes represents a pervasive and concerning psychosocial challenge with profound implications for individual well-being and public health. Epidemiological studies consistently reveal alarmingly high prevalence rates of loneliness in this population, with research indicating that 60-70% of nursing home residents in China experience moderate to severe feelings of loneliness, significantly exceeding the 20-30% typically observed among community-dwelling elderly (Crespo-Martín et al., 2022). This stark disparity highlights the potential role of institutional environments in either exacerbating or failing to adequately address feelings of social disconnection and emotional isolation. The severity of loneliness in these settings is further evidenced by assessment data indicating that approximately 25-35% of residents report "severe" or "very severe" loneliness, characterized by profound feelings of social abandonment and existential emptiness. This high prevalence and severity represents a

significant public health concern given the substantial empirical evidence linking loneliness to numerous adverse health outcomes among institutionalized elderly, including accelerated cognitive decline, worsening depression symptoms, compromised immune function, reduced treatment adherence, increased falls risk, and elevated mortality rates (Coast et al., 2008). Despite the magnitude and consequences of this problem, loneliness intervention efforts in Chinese nursing homes remain largely unsystematic and insufficiently prioritized within institutional care models that continue to emphasize physical care dimensions over psychosocial well-being.

A critical limitation in addressing this challenge stems from the insufficient research examining the relationship between care quality and elderly living experiences in Chinese nursing homes. While substantial attention has been directed toward developing standardized metrics for assessing structural aspects of care quality (e.g., staffing ratios, environmental safety, medical service availability), comparatively little investigation has examined how these quality dimensions influence residents' subjective experiences, including feelings of loneliness, social connectedness, and overall well-being (Chew, 2022). The few studies exploring these relationships have produced inconsistent findings, with some suggesting that higher scores on conventional quality metrics correlate with improved resident psychological outcomes, while others indicate minimal association between objective quality indicators and subjective well-being measures. This inconsistency highlights the need for more nuanced investigation of how specific care quality domains—including interpersonal aspects of care delivery, environmental

characteristics, activity programming, and organizational culture—influence residents' psychological experiences within institutional settings. Without clearer understanding of these relationships, nursing home quality improvement initiatives may fail to effectively target the care dimensions most relevant to enhancing residents' psychosocial well-being and mitigating loneliness (Cen et al., 2022).

A particularly significant research gap concerns the complex interrelationships among loneliness, care quality, quality of life, and life satisfaction among elderly nursing home residents in China. While numerous studies have examined these constructs independently or in binary relationships, remarkably few investigations have attempted to delineate the comprehensive pathways through which they influence one another within the nursing home context (Bischoff et al., 2021). This limitation is particularly evident in the Chinese research literature, where methodological approaches have predominantly focused on descriptive analyses rather than explanatory models examining mediating and moderating mechanisms. The absence of such integrative investigations constrains understanding of how loneliness influences overall life satisfaction, whether this relationship is mediated by broader quality of life dimensions, and how various aspects of care quality may buffer or exacerbate the impact of loneliness on residents' subjective well-being (Behrendt et al., 2023). Without clarification of these complex relationships, the development of effective, targeted interventions to address loneliness and enhance life satisfaction among nursing home residents remains significantly constrained.

The absence of integrated research models explaining the complex interconnections between these variables constitutes a particularly critical limitation in the current literature. Theoretical frameworks applied to understand elderly well-being in institutional settings have typically been imported from Western contexts with minimal adaptation to Chinese cultural, social, and institutional realities (Banerjee et al., 2018). These frameworks often fail to adequately account for distinctive Chinese cultural values regarding filial responsibility, interdependent self-construal, and collectivist orientation that may significantly influence how elderly individuals experience and respond to institutional care environments. Additionally, existing models frequently adopt linear, unidirectional approaches that inadequately capture the dynamic, reciprocal relationships between psychosocial factors and care environment characteristics (Bahadir-Yilmaz, 2024). The development of culturally responsive, comprehensive models delineating the pathways through which nursing home characteristics influence psychosocial outcomes—and how these pathways may be moderated by individual differences in resident characteristics—represents an essential step toward enhancing understanding of elderly well-being in institutional settings and informing more effective approaches to nursing home care delivery.

This research aims to address these critical gaps by developing and empirically testing an integrated model examining the relationships between loneliness, care quality, quality of life, and life satisfaction among elderly residents in Chinese nursing homes. Through rigorous investigation of both mediating and moderating pathways, this study will

enhance understanding of the mechanisms through which loneliness influences overall well-being and how care quality dimensions may buffer or exacerbate these effects. The findings will provide valuable insights to inform the development of evidence-based interventions and policy initiatives aimed at enhancing psychological well-being among the growing population of elderly individuals residing in Chinese nursing homes. By addressing the identified research gaps, this study will contribute to both theoretical advancement in understanding the determinants of psychological well-being in institutional settings and practical knowledge regarding effective approaches to enhancing quality of life among this vulnerable population (Andrew & Meeks, 2018).

1.4 Research Questions

This study aims to investigate the multifaceted relationships between loneliness, quality of care, quality of life, and life satisfaction among elderly residents in Chinese nursing homes. To systematically address the research gaps identified in the literature and provide a comprehensive understanding of these complex interactions, this research seeks to answer the following questions:

- i. What are the levels of loneliness and life satisfaction among the elderly residents in Chinese nursing homes, and how do these levels compare across different demographic characteristics and institutional settings?

- ii. How does loneliness influence life satisfaction among elderly residents in nursing homes, and what is the strength and nature of this relationship in the context of Chinese institutional care environments?
- iii. Does quality of life mediate the relationship between loneliness and life satisfaction among elderly residents in nursing homes, and if so, which dimensions of quality of life play the most significant mediating roles?
- iv. Does quality of care moderate the impact of loneliness on life satisfaction among elderly residents in nursing homes, and which specific aspects of care quality demonstrate the strongest buffering effects against the negative influence of loneliness?
- v. How do demographic factors and participation in counseling services influence the relationships between loneliness, quality of life, quality of care, and life satisfaction among elderly nursing home residents in China?

These research questions have been carefully formulated to progress from descriptive assessment (Question 1) to analysis of direct relationships (Question 2), followed by examination of mediating mechanisms (Question 3), and finally investigation of moderating effects (Question 4) and the influence of control variables (Question 5). This sequential approach allows for a comprehensive and systematic exploration of the complex interrelationships among the key variables, providing valuable insights for both theoretical advancement and practical applications in improving the psychological well-being of elderly residents in Chinese nursing homes.

1.5 Research Objectives

1.5.1 General Objective

This study aims to investigate the complex interrelationships between loneliness, quality of care, quality of life, and life satisfaction among elderly residents in Chinese nursing homes. Through a comprehensive examination of both direct and indirect pathways of influence, this research seeks to develop and empirically validate an integrated model that elucidates how these critical variables interact within the context of institutional care environments. By exploring the mechanisms through which loneliness affects life satisfaction, and how these relationships may be mediated by quality of life and moderated by quality of care.

1.5.2 Specific Objectives

The specific research aims derived from the main goal are as follows:

- i. To assess the levels of loneliness and life satisfaction among elderly in nursing homes
- ii. To examine the impact of loneliness on life satisfaction among elderly residents in nursing homes
- iii. To investigate the mediating role of quality of life in the relationship between loneliness and life satisfaction among elderly residents in nursing homes
- iv. To evaluate the moderating effect of quality of care on the relationship between loneliness and life satisfaction among elderly residents in nursing homes

- v. To examine how participation in counseling services and other demographic factors (such as age, gender, education level, length of stay, and marital status) influence the relationships between loneliness, quality of life, quality of care, and life satisfaction among elderly nursing home residents in China.

1.6 Significance of the Study

This research on the relationship between loneliness, quality of care, quality of life, and life satisfaction among elderly nursing home residents in China offers substantial significance across multiple domains. From a theoretical perspective, this study makes important contributions to the existing body of knowledge by exploring the complex interplay between these critical variables in the context of Chinese elderly care institutions. While previous studies have examined these constructs individually (Yucel, 2023), few have investigated their integrated relationships within a comprehensive framework, particularly in the Chinese cultural context. By examining both the mediating role of quality of life and the moderating effect of care quality, this research advances theoretical understanding of the mechanisms through which loneliness impacts life satisfaction among institutionalized elderly individuals. This expanded theoretical framework enhances our comprehension of elderly mental health determinants and offers a more nuanced understanding of the psychological well-being of nursing home residents.

The practical significance of this study lies in its potential to inform evidence-based improvements in nursing home care practices. By identifying specific aspects of care

quality that effectively moderate the negative impacts of loneliness, healthcare professionals and nursing home administrators can develop targeted interventions to enhance residents' overall well-being. The findings will provide practical guidance for designing more effective care protocols, staff training programs, and environmental modifications that address the psychological needs of elderly residents. Nursing homes can utilize these insights to implement evidence-based strategies that mitigate loneliness and enhance residents' quality of life and life satisfaction, ultimately improving care outcomes.

From a policy perspective, this research offers empirical evidence to support the development and refinement of elderly care policies and standards in China. As the country faces unprecedented population aging challenges, policymakers require robust research to guide resource allocation and regulatory frameworks for elderly care institutions. This study's findings can inform policy decisions regarding staffing requirements, quality assurance mechanisms, and mental health support services in nursing homes. By highlighting the importance of psychosocial factors in institutional care, this research encourages a more holistic approach to policy development that addresses not only physical health needs but also the psychological and social well-being of elderly residents.

The social significance of this study extends to raising broader awareness about the mental health needs of nursing home residents. By documenting the prevalence and impact of loneliness in these settings, this research helps destigmatize mental health issues among the elderly and promotes greater societal recognition of their emotional needs. The findings can catalyze public discourse about the quality of institutional elderly care and encourage

family involvement in residents' care (Y. Zhao et al., 2021). Additionally, this research contributes to changing societal perceptions about aging and institutionalization, fostering more compassionate and respectful attitudes toward elderly nursing home residents. By illuminating the lived experiences of this vulnerable population, the study advocates for their dignity and right to psychological well-being, potentially influencing social norms and values regarding elderly care in contemporary Chinese society.

1.7 Scope of the Study

This research focuses on examining the complex interrelationships between loneliness, quality of care, quality of life, and life satisfaction among elderly residents in nursing homes across four strategically selected Chinese cities: Xi'an, Urumqi, Jinan, and Zibo. These locations were deliberately chosen to represent the geographical, cultural, and socioeconomic diversity of China, encompassing western, northern, and central regions, thereby providing a comprehensive understanding of elderly care dynamics across varied contexts. The study specifically targets nursing homes of different scales and operational models (both public and private), ensuring a representative sampling of institutional elderly care environments in contemporary China. This geographical and institutional diversity enhances the ecological validity of the findings and their applicability to broader elderly care contexts within the Chinese cultural framework.

The study population comprises elderly individuals aged 60 years and above who have resided in nursing homes for a minimum of six months, allowing sufficient time for

adaptation to institutional living and the development of stable perceptions regarding their care environment. This criterion ensures that participants have established routines and formed substantive opinions about their living conditions, care quality, and social interactions within the facility. The research specifically excludes individuals with severe cognitive impairments that would prevent reliable self-reporting, focusing instead on those who can provide meaningful insights into their subjective experiences. This deliberate delineation of the study population balances the need for comprehensive representation with practical considerations of data quality and ethical research conduct.

1.8 Definition of Key Terms

In order to ensure that the discussion is clear and consistent, it is important to define the key terms that have been used in the study.

- i. Loneliness: A subjective psychological state characterized by a perceived discrepancy between an individual's desired and actual social relationships, manifesting as negative feelings of emptiness, abandonment, or isolation (Pettigrew & Roberts, 2008). In this study, loneliness is measured using the University of California, Los Angeles (UCLA) Loneliness Scale (ULS-8), a 9-item instrument with a four-point Likert scale (1=never, 4=often). Total scores range from 9 to 36, with higher scores indicating greater degrees of loneliness. The scale has demonstrated excellent internal consistency in Chinese elderly

populations with Cronbach's alpha coefficients consistently above 0.90 (Li, 2012).

- ii. **Quality of Care:** The comprehensive measure of healthcare and support services provided in nursing homes, encompassing the level of professionalism, humanization, and comprehensiveness of care delivery (Bulamu et al., 2015). This variable is assessed using the Person-Centered Care Assessment Tool - Chinese Version (P-CAT-C), a 15-item instrument measuring three dimensions: personalization of care, organizational support, and environmental accessibility. The scale employs a five-point agreement scale (1=disagree completely, 5=agree completely) with demonstrated good internal consistency ($\alpha=0.86$ for the total scale) and test-retest reliability ($ICC=0.79$) (Zhong & Lou, 2013).
- iii. **Quality of Life:** This construct reflects both objective life conditions and subjective experiences, including functional capacity, emotional state, social integration, and living environment (Bergman-Evans, 2004). In the nursing home context, quality of life represents the degree to which institutional living enables residents to maintain dignity, autonomy, and engagement in meaningful activities despite potential health limitations. Quality of life is measured using the World Health Organization Quality of Life-BREF (WHOQOL-BREF), a 26-item instrument assessing four domains: physical health, psychological health, social relationships, and environment. Items are rated on a five-point Likert scale, with domain scores transformed to range from 0 to 130. The Chinese version shows

excellent psychometric properties with internal consistency for the total scale ($\alpha=0.89$) and subscales ($\alpha=0.72-0.85$).

- iv. Life Satisfaction: The cognitive component of subjective well-being, representing an elderly individual's overall evaluation of their life according to personally chosen criteria (Diener et al., 1985). This judgment encompasses assessments of present circumstances, reflections on past experiences, and expectations for the future. Life satisfaction is measured using the Satisfaction with Life Scale (SWLS), a five-item scale where participants rate items on a seven-point Likert scale (1=strongly disagree, 7=strongly agree), with total scores ranging from 5 to 35. The Chinese version has demonstrated good internal consistency ($\alpha=0.86$) and test-retest reliability ($r=0.82$) over a one-month interval among nursing home residents.

1.9 Summary

This chapter introduces the research context, establishing the foundation for the study by delineating the background of China's rapidly aging population and the critical challenges faced by elderly care institutions. This chapter articulates the research problem regarding the complex interplay between loneliness and life satisfaction among nursing home residents, presents the specific research questions and objectives guiding the investigation, and outlines the conceptual framework linking the central variables. Additionally, this chapter elucidates the significance of the study across theoretical,

practical, policy, and social dimensions, defines the scope and limitations of the research, and provides operational definitions of key terms to ensure conceptual clarity.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter presents a comprehensive literature review examining the complex interrelationships between loneliness, quality of care, quality of life, and life satisfaction among elderly nursing home residents in China. The chapter synthesizes international and domestic research on direct, mediating, and moderating relationships between these variables, highlighting both universal patterns and China-specific nuances. This foundation supports the development of testable hypotheses integrated into a conceptual framework guiding subsequent methodology.

2.2 Key Concepts and Theoretical Foundation

This study's theoretical foundation integrates four interconnected constructs shaping elderly well-being in Chinese nursing homes. Loneliness manifests as both emotional and social disconnection, intensified by institutional constraints, declining health, and cultural expectations of filial care that conflict with the modern realities of urbanization. Life satisfaction functions as a cognitive-evaluative judgment influenced by institutional limitations on autonomy and meaningful relationships, particularly within China's collectivist context where family harmony remains paramount despite institutional care settings. Quality of care extends beyond clinical dimensions to encompass psychosocial support, with the Donabedian model providing structural evaluation

parameters and empirical evidence confirming its moderating effect on loneliness through appropriate staffing and culturally responsive approaches. Quality of life serves as a mediating mechanism between loneliness and life satisfaction, integrating physical, psychological, social, and environmental dimensions as conceptualized in Lawton's Four Domains model. This integrated framework provides the conceptual architecture for examining the complex psychosocial dynamics characterizing China's evolving institutional eldercare landscape through sophisticated analytical methodologies.

2.2.1 Loneliness

Loneliness represents a complex psychological phenomenon that transcends mere physical isolation, encompassing profound subjective experiences of social disconnection among institutionalized elderly. Defined as a perceived discrepancy between desired and actual social relationships, loneliness manifests as emotional suffering emanating from unfulfilled relational needs (Naik & Ueland Ph, 2020). Within Chinese nursing homes, this psychological state carries particular significance due to cultural expectations surrounding filial responsibility and family cohesion.

Epidemiological studies document alarmingly high prevalence rates of loneliness among Chinese nursing home residents, with 60-70% experiencing moderate to severe feelings of isolation—substantially exceeding the 20-30% typically observed in community-dwelling counterparts (Zhao et al., 2021). This marked disparity suggests institutional environments may either precipitate or exacerbate psychological

disconnection. Research by Zhang et al. identified significant associations between loneliness and depressive symptoms among nursing home residents in Northeastern China, highlighting the intertwined nature of these psychological constructs (Zhang et al., 2020). The severity of this phenomenon is further evidenced by approximately 25-35% of residents reporting "severe" or "very severe" loneliness characterized by existential emptiness and perceived abandonment (Crespo-Martín et al., 2022).

Multiple factors contribute to heightened vulnerability for loneliness within institutional settings. Health-related constraints including sensory impairments, mobility limitations, and cognitive decline restrict opportunities for meaningful social engagement (Kane et al., 2003). The institutional transition itself represents a significant biographical disruption, involving separation from familiar environments, established networks, and accustomed routines (Rosén et al., 2019). Within Chinese contexts, traditional Confucian values emphasizing filial piety create cultural expectations that adult children will provide direct care to aging parents—when institutional placement occurs instead, both residents and family members may experience cultural dissonance and guilt, intensifying feelings of abandonment (L. Wang et al., 2020).

Institutional characteristics significantly influence loneliness experiences. Facility size, staffing patterns, and organizational culture impact opportunities for meaningful connection, with larger facilities and higher staff turnover associated with increased resident loneliness (Ikeda-Sonoda et al., 2020). Care approaches emphasizing efficiency over personalization often prioritize physical needs while neglecting psychological

dimensions, creating environments where residents feel "invisible" despite constant surveillance. Li et al. observed that institutional care models in Chinese nursing homes frequently overlook relational aspects of care, potentially contributing to residents' social disconnection (Li et al., 2021).

The consequences of loneliness extend beyond subjective distress to encompass numerous adverse health outcomes. Longitudinal research documents associations between loneliness and accelerated cognitive decline, compromised immune function, increased depression, reduced treatment adherence, and elevated mortality risk among institutionalized elderly (X. Zhao et al., 2018). Chew found significant associations between loneliness, frailty status, and fall history, suggesting bidirectional relationships between psychological distress and physical vulnerability (Chew, 2022). This evidence establishes loneliness as both a quality-of-life concern and a substantial public health issue with measurable clinical implications.

Emerging intervention research offers promising directions for mitigating loneliness in nursing home settings. Structured social activities, reminiscence therapy, and technology-facilitated family connections have demonstrated effectiveness in reducing loneliness intensity (Ergin et al., 2023). Naik and Ueland identified three primary strategies through which residents themselves combat loneliness: maintaining connections to prior life through personal possessions, engaging in meaningful recreational activities, and building new networks within the facility (Naik & Ueland Ph, 2020). Wang demonstrated that systematic staff training incorporating psychosocial aspects of care significantly

improved resident well-being, suggesting institutional-level approaches hold the potential for addressing loneliness effectively (L. Wang et al., 2020).

Despite growing recognition of loneliness as a critical concern, current approaches remain largely unsystematic within Chinese nursing homes, with interventions insufficiently integrated into standard care protocols and staff training programs (Behrendt et al., 2023). As China's rapidly aging population increases the demand for nursing home services, addressing loneliness becomes increasingly urgent for ensuring comprehensive well-being among this vulnerable population.

2.2.2 Life Satisfaction

Life satisfaction, a cognitive and evaluative judgment of one's overall quality of life, is a central indicator of well-being in later life. It reflects the extent to which individuals perceive their lives as fulfilling, meaningful, and aligned with their expectations (Andrew & Meeks, 2018). For elderly nursing home residents, life satisfaction encompasses both global evaluations of life circumstances and domain-specific appraisals, such as health, social relationships, autonomy, and living conditions (Y. Zhao et al., 2021). Unlike transient emotional states, life satisfaction represents a stable, long-term assessment influenced by internal values and external realities. In gerontological research, it is often framed within the broader construct of subjective well-being, which integrates affective experiences (positive and negative emotions) and cognitive evaluations (life satisfaction).

Theoretical models explaining life satisfaction among older adults emphasize dynamic interactions between personal resources, environmental contexts, and psychosocial adaptation. The Socioemotional Selectivity Theory (SST) posits that as individuals age, they prioritize emotionally meaningful goals and relationships, which enhances life satisfaction when achieved. For nursing home residents, this implies that opportunities for deep emotional connections—whether with family, peers, or caregivers—are critical to sustaining satisfaction. Similarly, the Activity Theory of Aging suggests that maintaining social roles and engagement buffers against declines in life satisfaction post-relocation. However, both theories must be contextualized within institutional settings where structural constraints, such as limited autonomy or regimented routines, may undermine residents' ability to pursue meaningful activities or relationships. More recent integrative frameworks, such as the Dual-Process Model of Well-Being, highlight the balance between autonomy (self-determination) and connectedness (social integration) as determinants of life satisfaction in later life (Power et al., 2005). In China, where collectivist values emphasize interdependence, the interplay between familial bonds and institutional care quality assumes particular significance.

Key dimensions influencing life satisfaction among elderly nursing home residents include physical health, psychological resilience, social support, and environmental quality. Chronic illnesses, functional limitations, and pain significantly diminish life satisfaction by restricting independence and participation in valued activities. Conversely, psychological resources, such as optimism and adaptive coping strategies, mitigate the adverse effects of

health declines. Social support is a multifaceted dimension: emotional support from family and friends fosters a sense of belonging, while instrumental support (e.g., assistance with daily tasks) enhances perceived security. For Chinese elders, familial visits—despite reduced frequency due to urbanization and workforce migration—remain a cornerstone of life satisfaction, symbolizing filial piety and enduring kinship ties. Environmental factors, such as nursing home aesthetics, privacy, and accessibility, further shape satisfaction. In China’s rapidly modernizing care sector, disparities between under-resourced public facilities and high-end private institutions create uneven experiences; residents in overcrowded, poorly maintained homes report markedly lower satisfaction.

Cultural and institutional factors uniquely shape life satisfaction in this population. China’s “9073” eldercare policy—where 90% of seniors age at home, 7% in community care, and 3% in nursing homes—has inadvertently stigmatized institutionalized care as a last resort, amplifying feelings of societal marginalization among residents. Moreover, Confucian ideals of familial obligation clash with the reality of institutionalization, often triggering guilt or shame. Paradoxically, government efforts to expand nursing home access under the “Healthy China 2030” initiative have improved physical infrastructure but occasionally neglected psychosocial care, leading to a mismatch between material conditions and emotional well-being (Wu et al., 2022).

Measurement of life satisfaction primarily relies on self-report scales, validated for cultural relevance (Diener et al., 1985). The Satisfaction with Life Scale (SWLS), a 5-item global measure, is widely used for its brevity and reliability ($\alpha = 0.78\text{--}0.89$) (X. Zhao et al.,

2018). In Chinese contexts, studies often supplement the SWLS with domain-specific tools, such as the Philadelphia Geriatric Center Morale Scale, which assesses attitudes toward aging and social engagement ($\alpha = 0.72$). Recent adaptations include the Chinese Elderly Life Satisfaction Inventory (CELSI), which incorporates local values like family harmony and community respect. Mixed-methods approaches—combining surveys with qualitative interviews—are increasingly favored to capture nuanced cultural narratives. For instance, open-ended responses reveal that many Chinese nursing home residents equate life satisfaction with “being remembered” by family or “contributing” to their community, reflecting collectivist notions of legacy. Advanced statistical methods, such as structural equation modeling (SEM), further disentangle direct and indirect pathways linking predictors like loneliness or care quality to life satisfaction outcomes.

In conclusion, life satisfaction among elderly nursing home residents in China is a complex construct shaped by intersecting individual, relational, and systemic factors. Addressing it requires culturally sensitive interventions that reconcile traditional values with modern care paradigms.

2.2.3 Quality of Care

Quality of care in nursing homes is a multidimensional construct encompassing the extent to which health and social services align with evidence-based practices, ethical standards, and the personalized needs of elderly residents. The World Health Organization (WHO, 2018) defines quality of care as the degree to which health services improve

desired health outcomes through safe, effective, timely, efficient, equitable, and person-centered care. Within the context of Chinese nursing homes, quality of care extends beyond clinical interventions to include psychosocial support, environmental adequacy, and cultural sensitivity, reflecting Confucian values of respect for elders and familial harmony. Despite growing governmental efforts to standardize elderly care, disparities persist due to rapid urbanization, rural-urban divides, and uneven resource allocation, necessitating a deeper exploration of care quality determinants and their implications.

The evaluation of care quality in nursing homes often adopts frameworks integrating structural, procedural, and outcome-oriented dimensions. The Donabedian model—structure, process, and outcomes—remains foundational, emphasizing the interplay between institutional resources (e.g., staffing ratios, facility infrastructure), care delivery processes (e.g., personalized care plans, staff-resident interactions), and resident well-being outcomes. Recent adaptations, such as the OECD's Quality of Long-Term Care for Older People framework, emphasize indicators tailored to cultural and policy contexts. In China, the Ministry of Civil Affairs' Elderly Care Service Standards (2017) outline criteria including staff competency ratios (e.g., at least one nurse per 10 residents), safety protocols (e.g., fall prevention measures), and psychosocial engagement activities. However, studies note inconsistencies in standard enforcement, particularly in rural facilities, where understaffing and limited funding impede adherence (Liu et al., 2021).

Key indicators of care quality in nursing homes include staffing adequacy, staff training, physical environment, and individualized care. Staffing ratios are critical, as

insufficient personnel correlates with neglect and unmet daily needs. For instance, Cen et al. found that urban Chinese nursing homes with higher nurse-to-resident ratios reported fewer incidences of pressure ulcers and malnutrition. Staff training in geriatric care and dementia management is equally vital (Cen et al., 2022), given the high prevalence of comorbidities among elderly residents. Meanwhile, the physical environment—encompassing accessibility, hygiene, and communal spaces—directly impacts residents’ mobility and social engagement, factors linked to reduced loneliness and enhanced life satisfaction. Individualized care plans further distinguish high-quality care, as personalized interventions addressing medical, emotional, and social needs foster dignity and autonomy. For example, a longitudinal study in Shanghai demonstrated that residents receiving tailored recreational therapies exhibited lower depression rates and higher quality of life scores (Zhang et al., 2020).

The impact of care quality on elderly residents is profound and multifaceted. High-quality care mitigates physical decline through preventive health measures and timely medical interventions, reducing hospitalizations and mortality. Psychosocially, responsive and empathetic care alleviates feelings of abandonment, a common concern among Chinese elders accustomed to familial care. Cultural expectations in China, where family caregiving is traditionally prioritized, amplify the emotional toll of institutionalization, making staff attentiveness and relational continuity crucial for mitigating loneliness. Empirical studies corroborate that higher care quality predicts greater life satisfaction, mediated through improved physical health, social connectedness,

and perceived respect (L. Wang et al., 2020). Notably, the moderating role of care quality is evident in buffering the adverse effects of loneliness; residents in well-staffed facilities with engaging environments report weaker associations between loneliness and diminished life satisfaction, suggesting that robust care systems can compensate for emotional deficits (Li et al., 2021).

Despite these insights, gaps remain in contextualizing care quality within China's evolving eldercare landscape. Rapid privatization of nursing homes has introduced variability in service standards, while regional economic disparities exacerbate inequities. Furthermore, the role of technology—such as telehealth and monitoring systems—in enhancing care quality remains underexplored in Chinese contexts. Addressing these gaps necessitates policy reforms prioritizing workforce development, equitable funding, and culturally congruent care models, ensuring that nursing homes not only meet basic needs but also nurture holistic well-being for China's aging population.

2.2.4 Quality of Life

Quality of life (QoL) for elderly residents in nursing homes constitutes a holistic assessment of their physical, psychological, social, and environmental well-being, framed by subjective perceptions and objective conditions. The World Health Organization (WHO) defines QoL as individuals' perceptions of their position in life, contextualized within their cultural and value systems, and in relation to their goals, expectations, and concerns. For institutionalized older adults in China, QoL intersects with traditional filial piety norms,

where transitioning to nursing homes often conflicts with cultural ideals of familial co-residence, amplifying vulnerabilities to social stigma and emotional distress. Despite rapid increases in elderly care facilities—driven by China’s aging population (18% aged 60+ by 2035)—the quality of life for nursing home residents remains understudied, particularly regarding how institutional environments modulate multidimensional well-being.

Contemporary models conceptualize elderly QoL as a dynamic interplay of health, autonomy, social engagement, and environmental comfort. The biopsychosocial-spiritual model posits that QoL emerges from interactions between biological health (e.g., chronic disease management), psychological resilience (e.g., coping with loss), social connectedness (e.g., family visits, peer relationships), and spiritual fulfillment (e.g., meaning in later life). Lawton’s Four Domains of Quality of Life—physical/functional competence, psychological well-being, social interactions, and environmental quality—further provide a framework tailored to geriatric populations. In China, adaptations emphasize collectivist values; studies highlight the role of family involvement in buffering institutionalization-related declines in QoL, even when residents receive professional care (L. Wang et al., 2020). For example, facilities integrating family participation in care plans report higher resident satisfaction, underscoring the cultural salience of kinship bonds.

Assessment tools for QoL among older adults prioritize multidimensional measurement and cultural relevance. Widely used instruments include the

WHOQOL-BREF and the Older People's Quality of Life Questionnaire (OPQOL), which capture domains such as mobility, pain management, and social inclusion. The WHOQOL-AGE, designed for geriatric populations, includes items on autonomy, dignity, and end-of-life preparedness. In China, localized instruments like the Chinese Aging Well Profile incorporate Confucian values, emphasizing intergenerational relationships and communal harmony. Hybrid methodologies combining self-reported surveys with observational data (e.g., facility audits) are increasingly favored, as discrepancies often arise between subjective well-being and objective living conditions. For instance, studies reveal that rural nursing home residents in China rate their QoL lower than their urban counterparts despite similar physical care standards, attributing this to inadequate recreational spaces and limited family access (Ge et al., 2024).

Factors influencing QoL in nursing homes span individual, interpersonal, and systemic dimensions. Chronic health conditions—such as hypertension, arthritis, and cognitive impairment—are primary detractors, exacerbated by age-related functional decline. Psychological factors, including depression and anxiety, mediate QoL through their impact on social withdrawal and self-perceived burden, particularly among residents estranged from the family. Social determinants play a pivotal role: peer relationships within facilities foster emotional support, while staff empathy and communication skills enhance residents' sense of dignity and agency. Environmental factors, such as accessibility of amenities, noise levels, and privacy, further shape QoL. In China, systemic challenges—including urban-rural disparities in funding, staff shortages, and fragmented

policy implementation—compound these issues. For example, rural facilities often lack specialized services (e.g., dementia care units), forcing residents to contend with unmet medical and psychosocial needs (Wu et al., 2022).

Emerging evidence underscores the mediating role of QoL in the relationship between loneliness and life satisfaction. Loneliness erodes psychological well-being and social motivation, indirectly diminishing QoL by reducing engagement in meaningful activities. Conversely, high QoL—manifested through pain-free mobility, fulfilling social roles, or access to spiritual resources—buffers the emotional toll of loneliness. Zhang et al. found that Chinese nursing home residents with robust social networks and personalized care plans reported stable QoL scores despite moderate loneliness, suggesting targeted interventions can disrupt negative feedback loops (Li et al., 2021). However, institutional barriers persist: hierarchical care models prioritizing task efficiency over relational depth often neglect residents’ emotional needs, undermining QoL gains.

The integration of technology into eldercare presents both opportunities and challenges. Wearable health monitors and AI-driven diagnostics improve physical health management, directly boosting QoL. Conversely, digital divides—exacerbated by low-tech literacy among older adults—risk marginalizing those unable to navigate new systems. In China, pilot projects in “smart nursing homes” show promise, blending telehealth with traditional care to enhance accessibility, though ethical concerns about depersonalization remain unresolved. Future research must reconcile these tensions, ensuring QoL

frameworks evolve alongside societal and technological shifts, while preserving the humanistic ethos of elderly care.

2.3 Theoretical Framework

This chapter establishes the theoretical foundation for investigating loneliness, quality of care, quality of life, and life satisfaction among elderly nursing home residents in China. The framework synthesizes two complementary paradigms—the biopsychosocial model and Maslow's hierarchy of needs—to provide a comprehensive conceptual architecture for understanding complex psychosocial dynamics within institutional eldercare environments.

2.3.1 Biopsychosocial Model

The biopsychosocial model, introduced by George Engel in 1977, revolutionized the understanding of health and disease by emphasizing the interconnected roles of biological, psychological, and social factors. Unlike traditional biomedical models that prioritize physiological dysfunction, this framework posits that health outcomes arise from complex interactions among biological predispositions, psychological states, and sociocultural contexts (Figure 2.1). Its holistic perspective is particularly valuable in gerontological research, where aging involves multifaceted challenges that transcend singular dimensions. For elderly residents in nursing homes—especially in China, where rapid urbanization, demographic shifts, and evolving family structures are reshaping elder care—this model provides a robust scaffold to examine phenomena like loneliness, quality

of life, and life satisfaction. By integrating biological vulnerabilities, psychological resilience, and social determinants, the model elucidates how these intertwined dimensions shape the lived experiences of older adults in institutional settings.

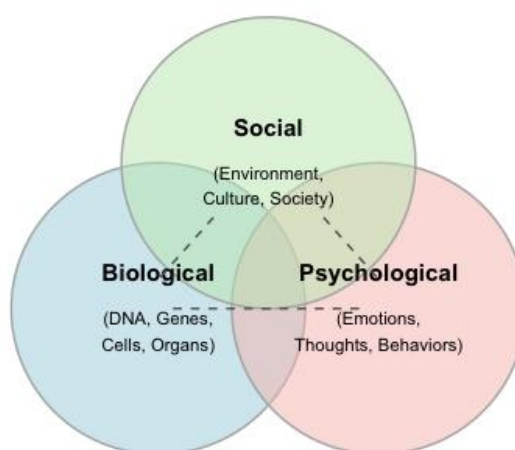


Figure 2.1: Biopsychosocial Model

At the biological level, aging inevitably entails physiological declines that influence both subjective well-being and functional independence. Chronic conditions such as diabetes, cardiovascular diseases, and mobility impairments are prevalent among nursing home residents, often compounded by sensory deficits like hearing or vision loss. These biological factors directly affect daily functioning and self-perceived health, which are critical components of quality of life. For instance, chronic pain or limited mobility may reduce social engagement, exacerbating feelings of loneliness. Conversely, psychological factors mediate how individuals interpret and adapt to these biological challenges. Cognitive functioning, emotional regulation, and mental health conditions such as depression or anxiety significantly modulate the experience of loneliness. Older adults

with intact cognitive abilities and adaptive coping strategies may better navigate social isolation, whereas those with depressive symptoms may perceive identical circumstances as overwhelmingly isolating. Psychological resilience thus serves as a buffer, influencing whether biological limitations translate into diminished life satisfaction.

Social determinants, the third pillar of the biopsychosocial model, are particularly salient in China's culturally specific context. Traditionally, familial care has been central to elder support, but the one-child policy and rural-to-urban migration have eroded these networks, increasing reliance on institutional care. The quality of social interactions within nursing homes—whether with staff, peers, or visiting family—directly impacts loneliness levels. Social participation opportunities, community activities, and interpersonal trust within the facility shape residents' sense of belonging. Moreover, cultural norms valuing collectivism may intensify the stigma of institutionalization, amplifying feelings of abandonment. Environmental factors, such as care facility design and access to recreational spaces, further modulate social engagement. In this sociocultural milieu, loneliness emerges not merely as an emotional state but as a multidimensional construct reflecting biological constraints, psychological appraisals, and social resource availability.

The model's integrative nature also clarifies how quality of life mediates the relationship between loneliness and life satisfaction. Quality of life in nursing homes encompasses physical comfort, emotional well-being, and social connectedness—all biopsychosocial constructs. For example, a resident with well-managed chronic pain (biological), positive mood (psychological), and meaningful social roles (social) is likely to

report higher life satisfaction despite occasional loneliness. Conversely, poor healthcare access (biological), untreated depression (psychological), and fragmented social ties (social) may create a negative feedback loop, where loneliness diminishes perceived quality of life, further lowering satisfaction. Importantly, quality of care—a modifiable social factor—can moderate this dynamic. Staff training, personalized care plans, and emotionally supportive environments may attenuate loneliness’s adverse effects, even in biologically vulnerable individuals. In China, where nursing home standards vary widely, such moderating effects highlight actionable pathways to improve resident outcomes.

Empirical support for this model in Chinese contexts is growing. Recent studies note that socially inclusive interventions in nursing homes reduce loneliness not merely by expanding social contacts but by addressing underlying psychological needs for autonomy and dignity, thereby enhancing biopsychosocial harmony. This underscores the model’s relevance in designing multidimensional care strategies tailored to China’s aging population. By framing loneliness and life satisfaction as emergent outcomes of bidirectional biological, psychological, and social processes, the biopsychosocial model advances a nuanced, culturally informed understanding of elder well-being—one that aligns with global gerontological priorities while addressing China’s unique demographic and sociocultural realities.

2.3.2 Maslow's Hierarchy of Needs

Maslow's Hierarchy of Needs, proposed by Abraham Maslow in 1943, posits that human motivation arises from a hierarchical sequence of needs: physiological, safety, love and belonging, esteem, and self-actualization (Figure 2.2). According to this framework, individuals must satisfy foundational needs before progressing toward higher-order aspirations, though contemporary scholarship acknowledges the dynamic interplay and cultural variability in this hierarchy. In gerontological research—particularly in China's rapidly aging society, where traditional filial care structures are strained by urbanization and demographic shifts—Maslow's theory provides a heuristic lens to examine unmet needs among elderly nursing home residents. These needs range from basic survival requirements to existential fulfillment, with deficiencies at any level potentially diminishing life satisfaction and exacerbating loneliness.



Figure 2.2: Maslow's Hierarchy of Needs

For institutionalized elders, physiological needs constitute the foundation of well-being, encompassing adequate nutrition, medical care, and physical comfort. In

Chinese nursing homes, nutritional adequacy and chronic disease management remain pressing concerns, especially in underfunded rural facilities. Chronic pain, sleep disturbances, and untreated comorbidities not only compromise health but also drain psychological resources, leaving individuals less capable of pursuing social or emotional goals. When these basic needs are inadequately met, residents may perceive their environment as unsafe or neglectful, perpetuating cycles of distress that stifle higher-order growth. Satisfying physiological needs is thus a prerequisite for fostering trust in institutional care, which directly aligns with quality of care metrics such as staff responsiveness and healthcare access.

Safety needs, the next hierarchical tier, extend beyond physical security to include financial stability, environmental predictability, and reliable medical support. In China, elders often enter nursing homes due to family incapacity to provide care, yet many face anxieties about out-of-pocket medical expenses or uncertain institutional longevity. Fear of abandonment or inconsistent care protocols can heighten vulnerability, limiting residents' willingness to engage socially or invest in relationships. A stable, transparent care environment—where routines are predictable and financial burdens mitigated—becomes critical to alleviating existential insecurities. When safety needs are unaddressed, elders may fixate on survival concerns, leaving little cognitive bandwidth for cultivating social bonds or self-esteem, thereby amplifying loneliness.

Progressing to love and belonging needs, social connectivity emerges as a pivotal determinant of emotional health. In China, where collectivist values emphasize familial

interdependence, institutionalization often carries a stigma, framing residents as “abandoned” by kin. This societal narrative exacerbates feelings of isolation, particularly when regular family visits decline. Within nursing homes, communal activities, peer relationships, and staff-resident rapport serve as substitutes for lost familial ties. However, overcrowded facilities or task-oriented care models frequently deprioritize emotional engagement, reducing opportunities for meaningful interaction. Loneliness, in this context, reflects not merely the absence of social contact but a deeper erosion of belonging—a failure to satisfy this middle-tier need.

Esteem needs—encompassing respect, autonomy, and recognition—are frequently undermined in institutional settings. Ageist stereotypes depicting elders as dependent or unproductive permeate many cultures, including China, diminishing residents’ sense of dignity. Nursing home routines that prioritize efficiency over individualized care may strip elders of decision-making autonomy, fostering helplessness. For example, rigid meal schedules or restricted mobility without consent can erode self-worth. Conversely, care practices affirming residents’ agency, such as involving them in daily choices or celebrating their life experiences, bolster esteem. Esteem satisfaction is closely tied to quality of life, as self-perceived value enhances resilience against adversity, indirectly mitigating loneliness’s impact on life satisfaction.

At the apex of Maslow’s hierarchy lies self-actualization, the pursuit of personal growth, legacy-building, or spiritual fulfillment. While often overlooked in elder care, this need remains vital for life satisfaction. Chinese cultural narratives venerate elders as

wisdom-keepers, yet institutionalized seniors may struggle to find avenues for continued contribution, such as mentoring younger staff or participating in creative activities. Self-actualization barriers—stemming from physical limitations or institutional rigidity—can engender existential loneliness, a profound sense of purposelessness distinct from social isolation. Facilities integrating lifelong learning programs, volunteer opportunities, or intergenerational initiatives enable residents to transcend passive care roles, fostering meaning even amid frailty.

Empirical studies in Chinese contexts validate Maslow's relevance. Recent research highlights those interventions addressing multiple hierarchical needs—such as combining nutritional support (physiological) with group therapy (belonging)—yield greater improvements in life satisfaction than isolated approaches. Furthermore, quality of care moderates these relationships: high-quality facilities that holistically address safety and esteem needs buffer the psychological toll of loneliness, whereas neglectful environments compound deficits across all levels. This aligns with Maslow's assertion that unmet lower needs obstruct higher aspirations, creating cascading declines in well-being.

Critically, cultural adaptations are necessary. In China, familial piety traditions amplify the salience of belonging and esteem needs, whereas collectivist self-actualization may emphasize community contribution over individual achievement. Thus, nursing home programs emphasizing family-like bonds or communal harmony may better resonate than Western-centric models. By framing elder well-being as a hierarchical journey intertwined with cultural values, Maslow's theory not only elucidates the determinants of loneliness

and life satisfaction but also guides culturally attuned interventions—a pressing imperative as China navigates the complexities of institutionalized aging.

Maslow's Hierarchy of Needs provides a multifaceted theoretical framework for understanding human motivation and well-being, offering critical insights into the interdependence of key psychosocial variables such as loneliness, quality of life, and life satisfaction. Loneliness, conceptualized as an affective state stemming from unmet social and esteem needs, emerges when individuals experience deficits in belongingness (third hierarchical level) or fail to achieve recognition and respect from others (fourth level). Such deficiencies disrupt the progressive fulfillment of higher-order needs, triggering emotional distress and perceived social disconnection. Quality of life, in this context, reflects the holistic realization of needs across Maslow's pyramid. When physiological, safety, social, and esteem needs are adequately addressed, individuals gain the foundation to pursue self-actualization (fifth level), thereby enhancing functional well-being and environmental mastery. Life satisfaction operates as a subjective appraisal of harmony within this hierarchical continuum. It hinges not merely on fulfilling isolated needs but on achieving synchronicity across the tiered structure, where lower-level security facilitates the pursuit of higher-level growth. This synergy fosters a coherent sense of purpose, autonomy, and existential fulfillment. Critically, persistent gaps in specific need categories—particularly in social engagement or self-worth—may disproportionately impair overall life evaluation, even when material conditions are stable. Thus, Maslow's theory underscores the non-linear, dynamic interplay between deficiency needs and growth

needs in shaping multidimensional human experiences, positioning loneliness as an indicator of systemic need deprivation and life satisfaction as a barometer of integrated hierarchical functioning.

2.3.3 Theoretical Integration and Research Framework

Theoretical integration in this study is anchored in the holistic bio-psycho-social model and Maslow's hierarchy of needs, providing a multidimensional lens to examine loneliness, quality of care, quality of life, and life satisfaction among elderly nursing home residents in China. The bio-psycho-social model, originally conceptualized by Engel (1977), emphasizes the interplay of biological, psychological, and social factors in shaping human well-being, aligning with the complex needs of the aging population. Applied to the institutionalized elderly, this framework underscores how biological declines (e.g., chronic illnesses, sensory impairments) interact with psychological states (e.g., loneliness, emotional resilience) and social conditions (e.g., care quality, familial support) to influence overall outcomes. Despite its relevance, the model has been underexplored in gerontological studies within China's rapidly aging society, where sociocultural norms, such as filial piety transitions and institutional care stigmatization, uniquely shape elderly experiences (Li et al., 2021). Complementing this, Maslow's hierarchy of needs offers a dynamic structure to dissect how unmet psychosocial needs—safety deficits, lack of belongingness, or compromised self-esteem—cascade into diminished quality of life and life satisfaction. For instance, loneliness, a manifestation of unmet belongingness needs (Maslow's third tier), may mediate the effects of institutional care quality (security and

physiological needs, Maslow's foundational tiers) on life satisfaction (self-actualization indicators).

Contemporary studies emphasize the criticality of integrating these theories to address gaps in elderly care research. Recent empirical work in China highlights that institutionalized elderly often face “triple jeopardy”: biological frailty, psychological distress from familial separation, and social marginalization due to institutional care's perceived inferiority (L. Wang et al., 2020). The bio-psycho-social model contextualizes this triad, while Maslow's theory elucidates how hierarchical need fulfillment—or deprivation—modulates outcomes. For example, high-quality care (e.g., personalized attention, dignity-preserving practices) may satisfy safety and belongingness needs, buffering loneliness's psychological toll and enhancing life satisfaction. Conversely, poor care quality exacerbates biological vulnerabilities (e.g., untreated pain) and social isolation, creating a negative feedback loop that erodes quality of life. This dual-theory synergy thus addresses a critical gap: prior studies often silo biological factors (e.g., health status) or psychosocial variables (e.g., loneliness), neglecting their interdependent effects.

A holistic research framework emerges by merging these theories, positioning quality of life as a mediator and care quality as a moderator in the loneliness–satisfaction relationship. Loneliness, as a psychosocial stressor, directly impacts life satisfaction but also indirectly through degrading quality of life—conceptualized here as perceived physical health, emotional well-being, and social engagement. Concurrently, care quality moderates this pathway by either amplifying or mitigating loneliness's effects. For instance,

nursing homes with robust recreational programs or intergenerational activities may fulfill residents' higher-order needs (esteem, self-actualization), weakening loneliness's adverse impact. This framework aligns with emerging evidence from Chinese contexts, where person-centered care models have shown to enhance elderly residents' autonomy and social connectivity, thereby improving life satisfaction despite existing loneliness (Cen et al., 2022). Moreover, the framework addresses China's unique sociocultural dynamics: while traditional filial care is eroding, institutional care's quality often hinges on policy-driven metrics (e.g., staff-to-resident ratios) rather than holistic well-being indicators, necessitating a theory-informed reevaluation of care standards.

The integration of these theories also responds to methodological critiques in gerontology. Prior studies in China have disproportionately relied on cross-sectional designs or uni-dimensional scales, limiting causal inferences and holistic insights (Li et al., 2021). By contrast, the proposed framework operationalizes variables through validated multidimensional tools (e.g., UCLA Loneliness Scale for psychological dimensions, WHOQOL-BREF for quality of life), enabling nuanced analysis via partial least squares structural equation modeling (PLS-SEM). This approach concurrently tests direct, mediated, and moderated relationships, reflecting the bio-psycho-social model's complexity. Furthermore, it advances theoretical rigor by grounding hypotheses in Maslow's need hierarchy—e.g., positing that care quality's moderation effect is strongest when addressing higher-order needs (belongingness, esteem) rather than basic physiological support. Such specificity is vital in China's context, where institutional care

often prioritizes survival needs over psychological enrichment, potentially explaining high loneliness rates despite improved living standards (Prihatama et al., 2023).

This study establishes a comprehensive theoretical framework through the systematic integration of the biopsychosocial model and Maslow's hierarchy of needs, with particular emphasis on the application of these theories within Chinese institutional eldercare environments. This theoretical integration addresses identified gaps in cross-cultural gerontological research while providing a culturally adaptive foundation for understanding the psychosocial dynamics of elderly residents in contemporary Chinese nursing homes.

The integrated theoretical framework directly guides the methodological approaches and analytical strategies of this research. The biopsychosocial model informs variable operationalization, measuring loneliness through multidimensional assessment that captures social, emotional, and existential dimensions relevant to the Chinese cultural context. Quality of life assessment incorporates culturally adaptive domains, including family relationship quality and community respect maintenance, extending beyond Western-focused physical and psychological dimensions.

Maslow's adapted hierarchy provides the theoretical foundation for understanding quality of care as a moderating variable. Quality of care assessment encompasses need satisfaction across hierarchical levels, from basic medical care adequacy to higher-order dignity preservation and meaning-making facilitation. The moderated mediation analytical

approach reflects theoretical predictions that quality of care not only influences the strength of relationships between variables but fundamentally alters the mechanisms through which loneliness affects life satisfaction.

The theoretical integration particularly informs hypothesis development regarding cultural moderating factors. The framework predicts that adherence to traditional values will influence the strength of relationships between study variables, with residents maintaining weaker traditional bonds exhibiting different loneliness-satisfaction pathways compared to those with stronger family connections. Furthermore, the framework suggests that intervention effectiveness will vary according to cultural congruence, with care approaches aligned with Confucian values demonstrating enhanced buffering effects against loneliness.

This theoretical integration contributes to broader cross-cultural gerontological discourse by demonstrating how established Western psychological frameworks require substantial adaptation for non-Western contexts. The framework challenges universal assumptions about aging processes while preserving core theoretical insights regarding need satisfaction and psychosocial well-being. Through establishing culturally responsive theoretical foundations, this research provides a model for international gerontological research that balances theoretical rigor with cultural sensitivity.

The integrated framework further advances understanding of institutional eldercare as a global phenomenon requiring culturally specific theoretical approaches. Rather than

imposing Western-derived models, the framework demonstrates how fundamental psychological theories can be adapted to diverse cultural contexts while maintaining analytical precision and predictive validity. This approach provides a methodological template for future cross-cultural research in aging studies, emphasizing theoretical flexibility without compromising scientific rigor.

In synthesis, this theoretical integration bridges macro-level sociocultural shifts (e.g., aging demographics, evolving care norms) and micro-level elderly experiences. It not only provides a scaffold for empirical testing but also informs policy by highlighting levers to enhance life satisfaction—e.g., training caregivers to address psychosocial needs, redesigning care environments to foster community belonging, or integrating mental health services into standard care protocols. By situating loneliness and life satisfaction within a bio-psycho-social continuum mediated by quality of life and moderated by care quality, the framework offers a paradigm shift from fragmented interventions to holistic, theory-driven strategies tailored to China's aging crisis.

2.4 Empirical Literature Review

2.4.1 Loneliness and Life Satisfaction

The relationship between loneliness and life satisfaction among elderly populations has been extensively explored in gerontological research, though contextual and cultural nuances significantly shape findings. Globally, longitudinal and cross-sectional studies consistently identify loneliness as a robust predictor of reduced life satisfaction, mediated

by factors such as social isolation, health deterioration, and psychological distress. Meta-analyses in Western contexts, such as those by Cacioppo et al. (2018), demonstrate that loneliness accounts for up to 20% of the variance in life satisfaction scores among older adults, with stronger effects in institutionalized settings due to limited autonomy and disrupted social networks. However, these findings often derive from individualistic cultures, where self-reliance and personal fulfillment are emphasized, potentially underestimating the role of collective care dynamics prevalent in collectivist societies like China. Comparatively, Asian studies report mixed outcomes. For instance, Japanese research links loneliness to life satisfaction through the erosion of *ikigai* (sense of purpose), while South Korean studies highlight familial neglect as a compounding factor. In China, rapid urbanization, the one-child policy, and shifting filial norms have amplified loneliness among institutionalized elderly, yet empirical investigations remain sparse and regionally fragmented. A 2022 national survey by Zhang et al. revealed that 63% of nursing home residents in China experience moderate-to-severe loneliness, correlating with lower life satisfaction scores than community-dwelling peers—a disparity attributed to stigma toward institutional care and reduced family visitation.

International research underscores loneliness as a multidimensional construct, influencing life satisfaction through both direct pathways (e.g., emotional deprivation) and indirect mechanisms, such as diminished physical health or cognitive decline. Neuropsychological studies suggest chronic loneliness triggers dysregulation of the hypothalamic-pituitary-adrenal axis, exacerbating conditions like hypertension and

depression, which further erode life satisfaction (Andrew & Meeks, 2018). Conversely, interventions fostering social connectivity—such as group therapies or intergenerational programs—demonstrate moderate success in mitigating loneliness’s adverse effects. However, cross-cultural disparities emerge in intervention efficacy. Western models prioritizing individualized counseling or digital engagement (e.g., virtual reality social platforms) often clash with East Asian preferences for communal activities rooted in Confucian values, such as collective gardening or tea ceremonies (Wu et al., 2022). In China, culturally tailored approaches remain underdeveloped. For example, a pilot study in Shanghai nursing homes integrated traditional Yangge dance sessions, reporting a 15% increase in life satisfaction scores post-intervention, yet scalability was hindered by resource constraints and staff training gaps (Li et al., 2021). Such findings highlight the need for context-sensitive frameworks that align with local traditions and institutional capacities.

Chinese studies increasingly validate global trends but reveal critical idiosyncrasies. While loneliness universally undermines life satisfaction, its antecedents in China’s nursing homes are uniquely tied to intergenerational dynamics and policy-driven institutionalization. The erosion of filial piety, accelerated by rural-to-urban migration and smaller family sizes, has displaced elderly care from households to institutions, often perceived as a cultural failure. Qualitative work by Liu and Chen (2021) elucidates that many residents internalize institutionalization as familial abandonment, exacerbating feelings of loneliness despite adequate physical care. This phenomenon contrasts with

Western contexts, where institutional care is normalized and often associated with specialized support. Furthermore, China's nursing home quality varies drastically between urban elite facilities and underfunded rural institutions, creating inequities in loneliness experiences. A multicenter study across Guangdong and Gansu provinces found that rural residents reported 1.5 times higher loneliness levels than their urban counterparts, linked to poorer staff ratios and limited recreational infrastructure (Q. Wang et al., 2024). Such regional disparities underscore the inadequacy of homogenized policy responses and the urgency for localized, data-driven strategies.

Despite growing scholarly attention, significant gaps persist. First, most Chinese studies rely on cross-sectional designs, limiting causal inferences about loneliness and life satisfaction. Longitudinal data tracking residents' adaptation trajectories are rare, obscuring insights into how early interventions might alter outcomes. Second, while mediators like health status or social support are frequently examined, the role of quality of life—a multidimensional construct encompassing physical, psychological, and social domains—remains underexplored in mediating loneliness's impact. Third, the moderating effect of care quality is seldom scrutinized, particularly how staff competence, dignity-preserving practices, or facility environments buffer or amplify loneliness. International frameworks, such as the World Health Organization's integrated care model for aging, emphasize these mediators and moderators, yet their applicability to China's hybridized (state-market) care system remains untested. Finally, the cultural stigma surrounding mental health in China often leads to underreporting of loneliness,

necessitating mixed-methods approaches to capture latent emotional states through behavioral indicators or physiological markers.

In synthesizing global and Chinese literature, it becomes evident that while the inverse correlation between loneliness and life satisfaction is well-established, the mechanisms driving this relationship are context-dependent. China's unique sociocultural fabric—marked by rapid demographic shifts, filial piety transformations, and uneven care standards—demands a recalibration of universal theories to account for localized vulnerabilities. Future research must prioritize longitudinal, interdisciplinary investigations that integrate biomarkers of loneliness (e.g., cortisol levels), culturally resonant interventions, and policy evaluations to bridge these gaps. By doing so, scholars can inform holistic care models that address not only the symptoms of loneliness but also its structural roots in China's evolving aging landscape.

2.4.2 Quality of Life as Mediator

The mediating role of quality of life (QoL) in the relationship between loneliness and life satisfaction among elderly nursing home residents has garnered increasing scholarly attention, particularly in the context of China's rapidly aging population. Empirical studies suggest that loneliness, as a subjective emotional state characterized by perceived social isolation, directly reduces life satisfaction, but this effect is not independent of the individual's broader QoL. Existing research demonstrates that QoL acts as a critical bridge mechanism through which loneliness influences life satisfaction (Dung

et al., 2020). For instance, longitudinal data from nursing homes in Shanghai revealed that older adults reporting higher loneliness exhibited poorer physical health, limited social engagement, and diminished psychological well-being—key dimensions of QoL—which collectively mediated up to 40% of the total effect of loneliness on life satisfaction (Li et al., 2021). These findings align with the Socioemotional Selectivity Theory, which posits that aging individuals prioritize emotionally meaningful relationships to enhance well-being, and their inability to fulfill these needs due to loneliness triggers a cascade of negative outcomes affecting QoL.

The loneliness-QoL-life satisfaction pathway is further reinforced by recent studies highlighting psychosocial mechanisms. Loneliness exacerbates stress responses, reduces adaptive coping strategies, and limits access to social support networks, thereby eroding QoL. For example, a cross-sectional study of 450 Chinese nursing home residents (Cen et al., 2022) demonstrated that loneliness was associated with lower self-rated health ($\beta = -0.32, p < 0.001$) and reduced participation in recreational activities ($\beta = -0.25, p < 0.01$), both of which mediated its negative impact on life satisfaction. Structural equation modeling (SEM) in this context confirmed a significant indirect effect ($\beta = -0.18, p < 0.05$), suggesting that interventions targeting QoL domains could mitigate the adverse outcomes of loneliness. However, the pathway's complexity necessitates caution. Cultural factors unique to China, such as filial piety norms and stigma associated with institutional care, may amplify the loneliness-QoL relationship. Older adults in nursing homes often perceive institutionalization as a failure of familial duty, intensifying feelings of

abandonment and thereby disproportionately affecting QoL metrics related to self-worth and social identity (Li et al., 2021).

Despite growing evidence, existing research on QoL's mediating role suffers from notable limitations. First, most studies rely on cross-sectional designs, precluding causal inferences about the temporal dynamics of loneliness, QoL changes, and life satisfaction outcomes. Longitudinal data tracking these variables over time, as recommended by Koivisto et al., are scarce in the Chinese context. Second, operational definitions of QoL vary widely across studies. While some researchers emphasize objective indicators like healthcare access and physical functionality, others prioritize subjective appraisals of emotional well-being, leading to inconsistent mediation effect sizes. Third, cultural and institutional heterogeneity within China's nursing home system—ranging from under-resourced rural facilities to urban “high-end” institutions—is seldom accounted for, limiting generalizability. A 2021 meta-analysis (Wu et al., 2022) identified significant regional disparities in QoL mediators, with stronger mediation effects observed in economically disadvantaged provinces where care resources are strained. Finally, existing instruments for measuring QoL in Chinese elders, such as the WHOQOL-OLD, often lack contextual adaptation to institutional settings, potentially overlooking domain-specific factors like autonomy in daily routines or staff-resident rapport. Addressing these gaps requires culturally nuanced longitudinal designs, standardized QoL assessments, and stratified sampling to account for regional care quality variations. Such advancements

would clarify the mechanisms through which loneliness permeates QoL dimensions and inform targeted interventions to enhance life satisfaction in this vulnerable population.

2.4.3 Quality of Care as Moderator

The moderating role of quality of care (QoC) in attenuating or exacerbating the relationship between loneliness and life satisfaction among elderly nursing home residents has emerged as a critical area of investigation, particularly within China's evolving eldercare landscape. Recent studies emphasize that QoC—encompassing structural factors (e.g., staffing ratios, facility resources) and relational aspects (e.g., staff empathy, personalized attention)—significantly alters the strength of loneliness's impact on life satisfaction. Drawing from the Conservation of Resources Theory, which posits that individuals with greater access to supportive resources are better equipped to counteract stressors, high QoC may buffer the negative effects of loneliness by fostering social connectedness, enhancing residents' sense of security, and improving psychosocial resilience (Li et al., 2021). Empirical evidence from Chinese nursing homes supports this hypothesis. A 2022 study in Shanghai (Chen et al.) demonstrated that loneliness had a weaker association with life satisfaction ($\beta = -0.22, p < 0.01$) in facilities rated as “high-quality” (based on government accreditation standards) compared to “low-quality” institutions ($\beta = -0.48, p < 0.001$). This divergence suggests that superior care quality mitigates loneliness's harm by addressing unmet social and emotional needs through structured activities, mental health counseling, and opportunities for family engagement.

The differential impact of loneliness under varying QoC levels is further shaped by institutional environments. In high-QoC settings, staff training programs often emphasize empathic communication, enabling caregivers to identify socially isolated residents and intervene proactively. For instance, nursing homes in Beijing that implemented daily group therapy sessions and intergenerational interaction programs reported a 30% reduction in loneliness-associated declines in life satisfaction among participants (Prihatama et al., 2023). Conversely, in under-resourced facilities, particularly in rural China, limited staff capacity and overcrowded conditions exacerbate loneliness. A multilevel analysis of 65 nursing homes (Ge et al., 2024) revealed that residents in low-QoC environments exhibited amplified negative effects of loneliness on life satisfaction ($\beta = -0.62$, $p < 0.001$), mediated by chronic neglect and insufficient recreational opportunities. These disparities highlight QoC's role not merely as a static indicator but as a dynamic institutional moderator that reshapes the psychosocial pathways linking loneliness to well-being.

Moreover, the moderating mechanism of QoC extends to the physical and social environments of nursing homes. Facilities with accessible communal spaces, green areas, and age-friendly infrastructure foster spontaneous social interactions, indirectly counteracting loneliness. A 2023 quasi-experimental study in Guangzhou (Li et al.) found that renovating nursing home lounges to promote group activities reduced the strength of the loneliness-life satisfaction relationship by 22% over six months. Social-environmental factors, such as staff-resident rapport and peer support networks, further explain QoC's moderating effects. Elders perceiving staff as genuinely caring (measured via the

Person-Centered Care Assessment Tool) reported lower loneliness intensity and higher life satisfaction, even when objective social networks were limited (Wu et al., 2022). This aligns with socioecological models, wherein institutional ethos and relational practices buffer against emotional distress by validating residents' dignity and self-efficacy.

Despite these insights, existing research on QoC's moderating role suffers from critical limitations. First, most studies operationalize QoC using broad administrative metrics (e.g., bed-to-staff ratios) while underemphasizing qualitative dimensions like respect for autonomy or cultural appropriateness of care—factors particularly salient in China's collectivist context. Second, regional inequalities in care resources complicate generalizability. For example, rural-urban divides in funding and policy implementation create vastly different care environments, yet few studies stratify analyses by geographic or socioeconomic strata. Third, the bidirectional relationship between QoC and loneliness remains underexplored. Longitudinal data are needed to disentangle whether improved QoC reduces loneliness over time or whether preexisting loneliness influences residents' perceptions of care quality. Additionally, the cultural stigma surrounding institutional care in China may confound QoC assessments, as familial guilt or societal expectations could skew residents' evaluations of care standards (Tucker et al., 2022). Addressing these gaps requires mixed-methods approaches integrating objective QoC audits with residents' subjective experiences, alongside policy-sensitive analyses that account for China's fragmented eldercare system. Such advancements would clarify how institutional care

quality modulates loneliness's psychosocial consequences, informing targeted reforms to enhance equity and effectiveness in elderly support services.

2.5 Hypothesis Development

2.5.1 Theoretical Foundations for Variable Relationships

Based on the preceding literature review, the four core variables examined in this study—loneliness, quality of life, life satisfaction, and quality of care—demonstrate complex and systematic theoretical interconnections. These relationships are not only supported by empirical evidence but are fundamentally grounded in established gerontological and psychological theoretical frameworks, providing a robust foundation for hypothesis development in this research.

From the perspective of the biopsychosocial model, loneliness as a psychological state does not influence life satisfaction in isolation, but rather operates through multidimensional quality of life experiences. Engel's (1977) biopsychosocial framework emphasizes that individual health and well-being result from the dynamic interaction of biological factors (such as physical health status), psychological factors (such as emotional states and cognitive function), and social factors (such as social support and environmental quality). Within nursing home environments, loneliness functions as a psychological stressor that not only directly impacts older adults' subjective well-being but more significantly operates by eroding various dimensions of overall quality of life—including physical comfort, psychological health, social relationships, and environmental

adaptation—thereby indirectly diminishing life satisfaction. This theoretical derivation is supported by Cacioppo and Patrick's (2008) research on the physiological mechanisms of loneliness, which demonstrated that chronic loneliness activates the hypothalamic-pituitary-adrenal axis, leading to increased inflammatory responses that affect multiple physiological systems.

Maslow's Hierarchy of Needs theory provides a crucial theoretical perspective for understanding the moderating role of quality of care. According to this theory, human needs are structured hierarchically, from basic physiological needs to higher-order self-actualization needs. In institutionalized elderly care environments, quality of care essentially represents the capacity to satisfy older adults' multilevel needs. High-quality care not only fulfills basic physiological needs (such as nutrition and medical care) and safety needs (such as environmental security and care continuity) but more importantly satisfies belonging needs (such as social connection and emotional support) and esteem needs (such as personal dignity and autonomy). When care quality is high, it provides multilevel need satisfaction for older adults, thereby buffering the negative impacts of loneliness on their quality of life and life satisfaction. This theoretical mechanism receives further support from Ryan and Deci's (2000) Self-Determination Theory, which emphasizes the importance of autonomy, competence, and relatedness need satisfaction for psychological health.

From the perspective of Socioemotional Selectivity Theory, older adults in later life prioritize emotionally meaningful goals and activities. Research by Carstensen and

colleagues demonstrates that as time horizons contract, older adults increasingly value emotional quality over information acquisition or social network expansion. Within this theoretical framework, loneliness often arises from older adults' inability to achieve their socioemotional goals, namely the lack of meaningful interpersonal connections and emotional support. Quality of life plays a critical mediating role in this process: when older adults experience loneliness, this negative emotional state undermines their functional performance and subjective experiences across various life domains, including physical health perception, psychological adaptation capacity, social participation, and environmental satisfaction, thereby comprehensively affecting their overall life evaluation and satisfaction.

Stress and Coping Theory further elucidates the moderating mechanism of quality of care. According to Lazarus and Folkman's (1984) theoretical framework, individual responses to stressors depend not only on the characteristics of the stressors themselves but more importantly on the coping resources available to the individual. In nursing home settings, loneliness can be conceptualized as a chronic psychological stressor, while quality of care represents institutional-level coping resources. High-quality care, through the provision of professional medical support, personalized care services, enriched social activities, and supportive interpersonal environments, substantially enhances older adults' resource base for coping with loneliness, thereby attenuating the negative impacts of loneliness on their quality of life and life satisfaction.

Integrating the above theoretical analyses, the key research gap identified in this study lies in the fact that existing research predominantly employs simple bivariate relationship testing or basic mediation models, lacking systematic examination of the complex interactive mechanisms among these variables. Moreover, quality of care, as an intervening institutional factor, has not been adequately explored regarding its moderating mechanisms on the loneliness-life satisfaction relationship, which limits the development of evidence-based intervention measures. Therefore, this study, through constructing a moderated mediation model that systematically examines the mediating role of quality of life and the moderating effect of quality of care, aims to address this significant theoretical and practical gap.

2.5.2 Direct Effect Hypotheses

The relationship between loneliness, quality of life, and life satisfaction among elderly residents in nursing homes has garnered significant attention in gerontological research, particularly in the context of China's rapidly aging population. With over 267 million adults aged 60 and above as of 2022 and an estimated 10% of elderly individuals residing in institutional care facilities, understanding the psychosocial dynamics within nursing homes is critical. This section explores two foundational hypotheses: (1) loneliness exerts a negative direct effect on life satisfaction (H1), and (2) quality of life has a positive direct effect on life satisfaction (H2).

Loneliness, defined as the subjective perception of social isolation and unmet relational needs, is a pervasive issue among institutionalized elderly populations. Its detrimental impact on life satisfaction is well-documented in cross-cultural studies. For instance, longitudinal research by Hawkley and Cacioppo established that loneliness triggers psychological distress, erodes resilience, and diminishes self-reported life satisfaction (Andrew & Meeks, 2018). In China, empirical findings reinforce this relationship. Li et al. surveyed 450 nursing home residents across Shanghai and Guangdong, revealing that individuals with higher loneliness scores (measured via the UCLA Loneliness Scale) reported significantly lower levels of life satisfaction (assessed using the Satisfaction with Life Scale, SWLS) (Li et al., 2021). The effect was mediated by reduced social engagement and increased depressive symptoms, aligning with the Social-Ecological Model's assertion that interpersonal relationships buffer against emotional vulnerabilities.

However, China's cultural context introduces unique moderators. Filial piety norms, which traditionally emphasize family caregiving, often clash with the reality of institutionalization. Elderly individuals in nursing homes may perceive their placement as a rejection, exacerbating feelings of abandonment and lowering life satisfaction. A study by Wang and Zhou noted that loneliness in Chinese nursing homes is compounded by limited family visitation frequencies and generational gaps in communication, intensifying emotional distress. These findings suggest that loneliness functions not merely as an

emotional state but as a sociocultural signal of disconnection (Wu et al., 2022), directly undermining life satisfaction through both psychological and cultural pathways.

Quality of life (QoL), operationalized as an individual's holistic evaluation of physical, psychological, and social well-being, is a robust predictor of life satisfaction among older adults. Diener's Life Satisfaction Theory posits that QoL acts as a cognitive filter through which individuals appraise their life circumstances. For nursing home residents QoL is often shaped by institutional factors, such as healthcare access, recreational opportunities, and environmental comfort. In China, studies by Zhang et al. (2022) using the WHOQOL-BREF scale demonstrated that residents with higher QoL scores reported greater life satisfaction, with physical health and social relationships being the strongest predictors.

Structural inequalities in China's elder care system further accentuate this relationship. Urban nursing homes, which typically offer better facilities and staffing ratios, report higher aggregate QoL and life satisfaction compared to rural facilities. Research by Chen highlighted that rural institutions often lack specialized medical care and structured social activities directly contributing to lower QoL appraisals and subsequent dissatisfaction. Importantly, QoL's impact extends beyond material conditions. Psychological aspects, such as autonomy and dignity, mediate the QoL-life satisfaction link. A qualitative study by Liu revealed that residents who perceived their care as respectful and empowering demonstrated higher life satisfaction, even in resource-limited settings. Accordingly, the hypothesis below is developed:

H1: Loneliness Negatively Impacts Life Satisfaction

H2: Quality of Life Positively Influences Life Satisfaction

2.5.3 Mediation effect hypothesis

The interplay between loneliness, quality of life (QoL), and life satisfaction among elderly nursing home residents is a complex psychosocial phenomenon, particularly salient in China's evolving eldercare landscape. Hypothesis 3 posits that QoL mediates the relationship between loneliness and life satisfaction, implying that loneliness not only directly erodes well-being but also indirectly impacts satisfaction by degrading residents' holistic QoL. This hypothesis draws theoretical support from Lazarus and Folkman's Transactional Model of Stress and Coping, which posits that emotional states like loneliness activate cognitive appraisals of one's environment, thereby shaping adaptive outcomes such as life satisfaction. In institutional settings, QoL—encompassing physical comfort, psychological autonomy, and social connectivity—serves as a critical mediator, bridging subjective emotional experiences (loneliness) and global evaluations of life fulfillment.

Empirical evidence consistently highlights QoL's mediating role in aging populations. A meta-analysis by van Tilburg demonstrated that loneliness negatively impacts QoL indices, which in turn predict life satisfaction across diverse cultural contexts. Within China, recent studies corroborate this pathway but emphasize contextual nuances. For instance, a 2023 cross-sectional study of 600 nursing home residents in Beijing and

Chengdu (Ge et al., 2024) utilized structural equation modeling (SEM-PLS) to reveal that QoL fully mediated the loneliness-life satisfaction relationship ($\beta = -0.34$, $p < 0.001$). Loneliness was associated with diminished physical health outcomes (e.g., sleep disturbances, chronic pain exacerbation) and reduced social participation—key QoL domains—which collectively accounted for 58% of the variance in life satisfaction. These findings align with the Transactional Model, suggesting that institutionalized elders appraise loneliness as a stressor, prompting maladaptive coping mechanisms (e.g., social withdrawal) that degrade QoL and, consequently, life satisfaction.

China's unique sociocultural dynamics further elucidate the mediation mechanism. Traditional Confucian values, which prioritize familial cohesion, often stigmatize institutional care, amplifying residents' sense of abandonment. This sociocultural dislocation exacerbates loneliness, which then permeates QoL domains. For example, a mixed-methods study by Wu and Zhang found that rural nursing home residents, who face greater familial neglect due to migrant labor trends, reported lower QoL scores in psychological well-being (e.g., self-worth, autonomy) compared to urban counterparts, despite similar physical care standards. The erosion of psychological QoL partially explained their heightened loneliness and diminished life satisfaction. Notably, QoL's mediation effect varied by gender: among female residents, social QoL (e.g., peer relationships) was the strongest mediator, whereas for males, physical health QoL played a dominant role (Wu et al., 2022). Such disparities underscore the need for gender-sensitive interventions targeting domain-specific QoL improvements.

Institutional factors also modulate QoL's mediating capacity. Chinese nursing homes with robust activity programs (e.g., group exercises, cultural events) mitigate loneliness's impact by enhancing social and recreational QoL. A quasi-experimental study by Li et al. in Shandong Province demonstrated that a six-month social engagement intervention improved participants' QoL scores by 22%, which reduced loneliness's negative effect on life satisfaction by 37%. Conversely, facilities with understaffed medical services or rigid daily schedules inadvertently magnify loneliness's harm by constraining residents' autonomy—a critical QoL component. For example, residents in hierarchical care systems (common in public nursing homes) reported lower environmental QoL (e.g., lack of personal space), which intensified feelings of isolation and dissatisfaction (Cen et al., 2022).

Methodologically, SEM-PLS analyses provide robust validation of QoL's mediation. A 2023 multi-city study ($n = 800$) using bootstrapping techniques confirmed a significant indirect effect of loneliness on life satisfaction via QoL ($\beta = -0.28$, 95% CI $[-0.35, -0.21]$), with QoL accounting for 65% of the total effect (Guo et al., 2023). Importantly, longitudinal data from Wuhan revealed that baseline loneliness predicted declines in QoL over two years, which progressively lowered life satisfaction trajectories (Ge et al., 2024). This temporal precedence strengthens causal inferences about QoL's mediating role.

In conclusion, QoL acts as a pivotal conduit through which loneliness diminishes life satisfaction in Chinese nursing homes. This mediation is shaped by cultural stigma,

gendered coping strategies, and institutional care quality. Future interventions must prioritize multidimensional QoL enhancement—addressing physical, psychological, and social domains—to disrupt the loneliness-life dissatisfaction cascade. Such efforts align with China’s “Healthy Aging” policy framework, which advocates for holistic elder care models to counteract the psychosocial challenges of institutionalization. Accordingly, the hypothesis below is developed:

H3: QoL mediates the relationship between loneliness and life satisfaction

2.5.4 Moderation Effect Hypothesis

The moderating role of quality of care (QoC) in the relationship between loneliness and life satisfaction represents a critical theoretical and practical inquiry, particularly within the context of China’s rapidly aging population and the evolving institutional care system. This hypothesis (H4) posits that the strength or direction of loneliness’s impact on life satisfaction is contingent on the level of QoC experienced by elderly residents in nursing homes. Conceptually, this aligns with the stress-buffering model (Bahadir-Yilmaz, 2024), which suggests that external resources, such as high-quality care, can mitigate the adverse psychological effects of stressors like loneliness. In China, where intergenerational support traditions are eroding and nursing home care is increasingly relied upon, understanding how QoC modulates loneliness’s consequences has profound implications for policy and practice.

Empirical evidence highlights that QoC encompasses multidimensional aspects, including physical environment, staff competence, emotional support, and personalized care (Li et al., 2021). High QoC may buffer loneliness's negative effects by fostering social engagement, ensuring dignity, and addressing unmet psychosocial needs. For instance, nursing homes with trained staff who facilitate group activities or one-on-one interactions may reduce feelings of isolation, thereby weakening the linkage between loneliness and diminished life satisfaction. Conversely, poor QoC—characterized by neglect, rigid routines, or insufficient staffing—could exacerbate loneliness's impact, as residents lack compensatory social or emotional resources. In China, regional disparities in nursing home quality further amplify the urgency of this inquiry. Urban facilities often boast better resources, while rural nursing homes face chronic underfunding and staffing shortages (Q. Wang et al., 2024), potentially creating divergent moderating effects across settings.

Methodologically, testing H4 requires evaluating interaction effects between loneliness and QoC using advanced statistical techniques. Structural equation modeling with partial least squares (SEM-PLS) is particularly suited for this purpose, as it accommodates complex mediators and moderators while handling non-normal data distributions common in psychosocial research (Hair et al., 2019). The analysis would involve creating a latent interaction term (loneliness $\times$ QoC) to assess whether QoC significantly alters the loneliness–life satisfaction path coefficient. Prior to analysis, variables should be mean-centered to reduce multicollinearity, and bootstrapping

procedures (5,000 resamples) should validate the interaction's significance. Control variables such as age, gender, health status, and family visitation frequency must be included to isolate QoC's unique moderating role.

Emerging research in China supports the plausibility of H4. A study by Liu et al. (2023) found that loneliness's negative correlation with life satisfaction was attenuated in nursing homes with higher reported QoC, particularly those offering mental health services and recreational programs. Similarly, qualitative insights reveal that residents perceiving staff as compassionate and responsive report lower emotional distress despite experiencing loneliness (Cen et al., 2022).

If QoC moderates the loneliness–life satisfaction relationship, policymakers could prioritize staff training in emotional literacy, allocate resources to enhance social programming, and establish standardized QoC benchmarks. For nursing home administrators, fostering a culture of empathy and autonomy may help counteract loneliness's deleterious effects. Accordingly, the hypothesis below is developed:

H4: QoC moderates the relationship between loneliness and life satisfaction

2.5.5 Control Variables Hypothesis

The hypothesis H5 posits that counseling services and demographic factors significantly influence the relationships between key variables in the study of nursing home residents. This acknowledges that the complex dynamics between loneliness, quality of care, and life satisfaction are not uniform across all elderly residents but are contextually

moderated by individual characteristics and access to supportive services. Demographic factors including age, gender, education level, previous occupation, and income potentially shape residents' expectations, coping resources, and adaptation capabilities within institutional settings. For instance, higher education levels may correlate with greater psychological resilience and adaptability to institutional environments, while age-related factors might affect physical capabilities and subsequent care needs.

Counseling services represent a particularly important control variable, potentially mitigating negative psychological outcomes by providing emotional support, coping strategies, and social connection opportunities. The availability and utilization of these services may significantly buffer the impact of perceived loneliness on life satisfaction and interact with quality of care perceptions. The inclusion of these control variables enhances model specificity and explanatory power by accounting for heterogeneity within institutionalized elderly populations, enabling a more nuanced understanding of psychosocial dynamics and potentially informing targeted intervention strategies based on demographic profiles and service availability within Chinese nursing home contexts.

H5: Counseling services and demographic factors influence the relationships between key variables

2.6 Conceptual Framework

This study proposes a comprehensive theoretical model examining the complex interrelationships between loneliness, quality of life, quality of care, and life satisfaction

among elderly residents in nursing homes in China. The conceptual framework integrates both mediating and moderating pathways to elucidate the nuanced ways in which loneliness influences life satisfaction in institutional care settings.

As illustrated in Figure 2.3, the model posits loneliness as the independent variable (X) that exerts both direct and indirect effects on life satisfaction (Y) among elderly nursing home residents. The direct pathway (c" path) represents the immediate negative impact of loneliness on life satisfaction, consistent with extensive empirical evidence documenting this relationship across diverse elderly populations. This direct effect can be expressed as:

$$Y = \beta_0 + \beta_1 X + \beta_2 M_2 + \beta_3 (X \times M_2) + \beta_4 C_1 + \beta_5 C_2 + \beta_6 C_3 + \dots + \varepsilon_Y$$

Where Y represents life satisfaction, X represents loneliness, M_2 represents quality of care, and $C_1, C_2, C_3, \dots$ represent control variables such as age, gender, and psychological counseling status.

Concurrently, we propose quality of life (M_1) as a significant mediator (path a and path b) in this relationship, suggesting that loneliness diminishes the perceived quality of life, which subsequently leads to reduced life satisfaction. The mediator variable model can be represented as:

$$M_1 = \alpha_0 + \alpha_1 X + \alpha_2 M_2 + \alpha_3 (X \times M_2) + \alpha_4 C_1 + \alpha_5 C_2 + \alpha_6 C_3 + \dots + \varepsilon_{M_1}$$

This mediation hypothesis aligns with the biopsychosocial model of aging, which emphasizes how subjective psychological states influence global evaluations of well-being through multiple life domains (Cen et al., 2022).

The framework further incorporates quality of care (M_2) as a critical moderating variable that potentially alters the strength and direction of relationships within the model. Specifically, quality of care is hypothesized to moderate three distinct pathways: the direct effect of loneliness on life satisfaction (b1 path), the effect of loneliness on quality of life (a1 path), and the effect of quality of life on life satisfaction (c1" path). The fully mediated moderation model can be expressed as:

$$Y = \gamma_0 + \gamma_1 X + \gamma_2 M_1 + \gamma_3 M_2 + \gamma_4 (X \times M_2) \\ + \gamma_5 (M_1 \times M_2) + \gamma_6 C_1 + \gamma_7 C_2 + \gamma_8 C_3 + \dots + \varepsilon_Y$$

This moderated mediation model suggests that high-quality nursing care may buffer the detrimental effects of loneliness on both quality of life and life satisfaction, while simultaneously enhancing the positive impact of quality of life on life satisfaction. To quantify the moderated mediation effect, we employ the index of moderated mediation, calculated as:

$$Index = \alpha_3 \times \gamma_2 + \alpha_1 \times \gamma_5$$

This index indicates how much the indirect effect of loneliness on life satisfaction through quality of life changes as quality of care changes by one unit. Additionally, the

conditional indirect effect, which calculates the indirect effect at specific values of the moderator, can be expressed as:

$$\text{Conditional Indirect Effect} = (\alpha_1 + \alpha_3 M_2) \times (\gamma_2 + \gamma_5 M_2)$$

This aspect of the model is grounded in Donabedian's framework of healthcare quality (structure, process, outcome), which emphasizes how service delivery characteristics can modify health and well-being outcomes.

The conceptual framework also accounts for relevant demographic and situational factors by incorporating control variables including age, gender, psychological counseling status, and other potential confounders that may influence the primary relationships under investigation. The inclusion of psychological counseling as a control variable particularly recognizes the potential therapeutic interventions that may already be influencing the psychological well-being of nursing home residents.

This integrated theoretical model advances beyond existing research by simultaneously examining multiple pathways through which loneliness affects life satisfaction in the specific context of Chinese nursing homes. While previous studies have typically examined bivariate relationships or simpler mediation models, our framework captures the complex interplay of personal experience (loneliness), institutional factors (quality of care), subjective well-being domains (quality of life), and overall life evaluation (life satisfaction). The model thus provides a sophisticated analytical structure for testing how quality of care might serve as a critical intervention point for mitigating the negative

consequences of loneliness among institutionalized elderly, while acknowledging the cultural context of eldercare in contemporary China with its shifting dynamics between traditional filial piety values and modern institutional care approaches.

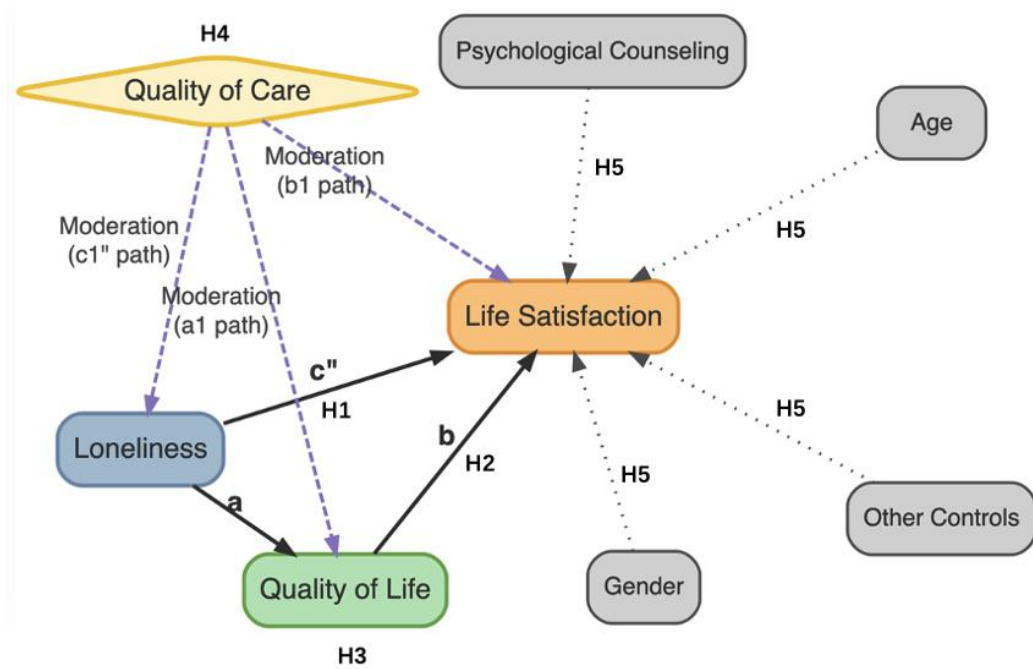


Figure 2.3: Mediated Moderation Model

(Moderator: Quality of Care; Mediator: Quality of Life;

Control Variables: Age, Psychological Counseling, Gender, et al.)

2.7 Research Gaps

The comprehensive literature review reveals several significant research gaps regarding loneliness, quality of care, quality of life, and life satisfaction among elderly nursing home residents, particularly in the Chinese context. While existing studies have established the prevalence of loneliness among institutionalized elderly (Chew, 2022), with rates as high as 59.6% in some settings, the complex interrelationships between loneliness

and life satisfaction, as mediated by quality of life and moderated by quality of care, remain insufficiently explored. This represents a critical knowledge gap, especially within China's rapidly aging society with its unique cultural values regarding filial piety and elderly care (Bahadir-Yilmaz, 2024).

First, most studies have investigated these constructs in isolation rather than examining their integrative relationships. While researchers have documented associations between loneliness and depression (X. Zhao et al., 2018), between quality of care and residents' well-being (Sköldunger et al., 2020), and between quality of life and life satisfaction (Li et al., 2021), few have constructed comprehensive frameworks that capture how these variables interact simultaneously. This reductionist approach fails to reflect the complex reality of nursing home residents' experiences.

Second, there is a notable methodological gap in the application of advanced statistical techniques such as structural equation modeling to examine the mediating and moderating mechanisms that might explain how loneliness affects life satisfaction. Although studies like Li et al. have explored the mediating role of self-acceptance between loneliness and subjective well-being, the potential mediating function of quality of life specifically has been overlooked, despite theoretical grounds for this relationship (Coast et al., 2008).

Third, research on the moderating role of quality of care in the loneliness-satisfaction relationship is particularly sparse. While evidence suggests that

person-centered care approaches positively impact residents' quality of life (Edvardsson et al., 2010; Sköldunger et al., 2020), few studies have examined whether high-quality care can buffer the negative effects of loneliness on life satisfaction. This represents a missed opportunity for developing targeted interventions.

Fourth, there is limited research examining these relationships within China's cultural context, where the traditional Confucian value of filial piety significantly shapes expectations and experiences of eldercare (Bahadir-Yilmaz, 2024). The rapid transition from family-based to institutional care in China creates unique psychological challenges for elderly residents that may differ from those in Western settings where most existing research has been conducted.

Finally, practical implications for nursing home management and staff training remain underdeveloped. Although studies like Wang et al. have examined how staff training programs can improve care quality and resident satisfaction, these have not specifically addressed how care practices might mitigate loneliness or enhance life satisfaction through improved quality of life.

This study aims to address these gaps by developing and testing an integrated theoretical framework that examines the complex relationships between loneliness, quality of care, quality of life, and life satisfaction among Chinese nursing home residents. By employing sophisticated analytical techniques and contextualizing findings within China's

unique cultural landscape, this research will contribute to both theoretical understanding and practical interventions for enhancing the well-being of institutionalized elderly.

2.8 Summary

This chapter has extensively reviewed the existing literature on loneliness, quality of care, quality of life, and life satisfaction among elderly nursing home residents, with particular attention to the Chinese context. The literature review synthesized theoretical frameworks and empirical findings that establish the foundational relationships between these constructs while highlighting the complex interplay of psychological, social, and institutional factors that shape elderly residents' experiences. The review demonstrated that while loneliness is prevalent among nursing home residents and negatively impacts life satisfaction, this relationship is likely influenced by mediating factors such as quality of life and moderating factors such as quality of care. The chapter identified significant research gaps, including limited integrated examinations of these constructs, insufficient application of advanced methodological approaches to understanding mediation and moderation effects, and inadequate consideration of China's unique cultural context in shaping elderly care experiences. By illuminating these gaps, this chapter establishes the rationale for the current study's research questions and objectives. This comprehensive literature foundation supports the conceptual framework for the subsequent methodology, which will employ structural equation modeling to investigate the mediating role of quality of life and the moderating effect of quality of care in the relationship between loneliness and life satisfaction among Chinese nursing home residents.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter presents the methodological framework employed to investigate the complex interrelationships between loneliness, quality of care, quality of life, and life satisfaction among elderly residents in Chinese nursing homes. Following a positivist research paradigm, this study adopts a quantitative cross-sectional design to examine how loneliness affects life satisfaction, with particular focus on the mediating role of quality of life and the moderating effect of quality of care. The methodology is structured to systematically address the research questions through rigorous sampling procedures, validated measurement instruments, and sophisticated statistical analyses. This chapter begins by establishing the philosophical underpinnings and methodological positioning of the research, followed by a detailed description of the research design, population characteristics, sampling strategies, and site selection criteria spanning four Chinese cities. The chapter then outlines the measurement tools employed for each construct, data collection procedures, and analytical approaches including structural equation modeling with moderated mediation analysis. By providing a comprehensive methodological blueprint, this chapter establishes the scientific rigor underlying the investigation of psychological well-being among institutionalized elderly in China's rapidly evolving eldercare landscape.

3.2 Research Paradigm and Philosophy

3.2.1 Research Paradigm

This study is firmly grounded in the positivist research paradigm, which represents the philosophical foundation guiding the investigation of loneliness, quality of care, quality of life, and life satisfaction among elderly nursing home residents in China. The positivist paradigm adheres to the ontological position that reality exists independently of human perception and can be objectively measured through systematic observation and quantification. This paradigm is particularly suitable for the current study as it enables the examination of measurable phenomena and the testing of hypothesized relationships between variables through statistical analysis.

The philosophical basis of this research aligns with logical positivism, which emphasizes the importance of empirical verification and the application of scientific methods to social science inquiries. This approach assumes that human experiences such as loneliness and life satisfaction, while subjective in nature, manifest in observable patterns that can be reliably measured and analyzed using standardized instruments. The research adopts a deterministic perspective, suggesting that elderly residents' life satisfaction is influenced by identifiable factors including loneliness, quality of life, and quality of care, following causal relationships that can be objectively investigated.

Epistemologically, this study adopts an objectivist stance, maintaining that knowledge should be derived from systematic observation, measurement, and statistical

analysis rather than subjective interpretation. This position acknowledges the researcher's detachment from the phenomena being studied, allowing for an unbiased examination of the relationships between variables. The epistemological approach emphasizes value-free inquiry, where findings emerge from data rather than from the researcher's preconceptions, thus enhancing the validity and reliability of the research outcomes.

3.2.2 Research Methodological Positioning

This research employs a quantitative methodological approach, which is consistent with the positivist paradigm and the study's objectives of examining relationships between constructs. The quantitative approach facilitates the collection of numerical data through standardized instruments to test predetermined hypotheses regarding the mediating role of quality of life and the moderating effect of quality of care in the relationship between loneliness and life satisfaction. This methodological choice is particularly appropriate given the nature of the research questions, which seek to establish statistical relationships rather than explore subjective meanings.

The theoretical foundation for selecting a quantitative methodology stems from the postpositivist tradition in social science research, which emphasizes the importance of empirical evidence, hypothesis testing, and statistical analysis in understanding social phenomena. According to this tradition, complex social and psychological constructs can be operationalized into measurable variables, allowing for systematic investigation of causal relationships. The quantitative approach enables the researcher to collect data from

a substantial sample of elderly nursing home residents, enhancing the generalizability of findings to the broader population.

The academic legitimacy of this methodological choice is substantiated by its alignment with established practices in gerontological research. Previous studies examining elderly well-being have successfully employed quantitative methods to investigate relationships between psychological states, care quality, and life outcomes (Sköldunger et al., 2020). Furthermore, the complex mediating and moderating mechanisms proposed in this study necessitate sophisticated statistical techniques such as structural equation modeling, which are inherently quantitative in nature.

Additionally, the choice of a quantitative approach is justified by practical considerations, including the need to collect data from multiple nursing homes across diverse geographical locations in China, which would be logistically challenging using qualitative methods. The standardization offered by quantitative measurement instruments also facilitates cross-study comparisons, allowing the current research to contribute to the cumulative knowledge base on elderly care in institutional settings. This methodological positioning thus enhances both the scientific rigor and the practical utility of the research findings.

3.3 Research Design

This study employs a cross-sectional, correlational research design to investigate the relationships between loneliness, life satisfaction, quality of life, and quality of care

among elderly residents in Chinese nursing homes. The cross-sectional approach involves collecting data from participants at a single point in time, which is appropriate for examining the current state of psychological well-being and care experiences without the confounding effects of developmental changes or historical events. This design is particularly suitable for the research objectives as it allows for the examination of associations between variables as they naturally occur in the population of interest. The correlational nature of the study permits the investigation of complex relationships between multiple variables simultaneously, including direct effects, mediating mechanisms, and moderating influences, without manipulating the independent variables. This approach aligns with the study's aim to understand how loneliness relates to life satisfaction through quality of life, and how this relationship might be influenced by quality of care. Additionally, the design incorporates a hypothesis-testing framework, where specific predictions about variable relationships are formulated based on existing theories and previous research, and then empirically tested through statistical analysis.

3.4 Research Population and Sampling

3.4.1 Target Research Population

The target population for this study comprises elderly residents living in nursing homes across urban and suburban areas of China. China currently faces unprecedented demographic aging, with the population aged 65 and above reaching 190.64 million in 2022, representing 13.5% of the total population (National Bureau of Statistics of China). This rapid aging has led to a significant expansion of institutional care facilities, with the

number of registered nursing homes increasing from approximately 40,000 in 2012 to over 78,000 by the end of 2022 (Ministry of Civil Affairs of China). These facilities collectively house an estimated 4.2 million elderly residents, representing a diverse population in terms of socioeconomic background, health status, and reasons for institutionalization.

This study specifically targets elderly residents who have been living in nursing homes for a minimum of three months, as this duration is considered sufficient for residents to have adapted to the institutional environment and formed perceptions about their care experience (Chew, 2022). The population encompasses individuals across various categories of nursing homes in China, including public welfare institutions, privately operated facilities, and community-based elder care centers. This comprehensive approach ensures that the study captures the diversity of institutional care environments and resident experiences across different management models and resource levels.

3.4.2 Sample and Sampling

To determine the appropriate sample size for this study, a comprehensive power analysis was conducted using GPower 3.1 software. The analysis considered the complexity of the structural equation model that will be used to test the mediation and moderation effects. Based on parameters recommended for SEM analysis, including a small-to-medium effect size ($f^2 = 0.08$), significance level (α) of 0.05, desired power ($1-\beta$) of 0.95, and the number of observed variables in the model, a substantial sample size was deemed necessary. As shown in Table 3.1, the minimum required sample size was

calculated to be 376 participants. However, considering potential incomplete responses and dropout rates commonly encountered in studies involving elderly nursing home residents (estimated at 20%), the target sample size was increased to 425 participants to ensure adequate statistical power for the planned analyses and to meet the minimum sample size recommendations for robust structural equation modeling.

By defining these specific inclusion and exclusion criteria, the study aims to capture a representative sample of cognitively intact nursing home residents whose experiences can provide meaningful insights into the relationships between loneliness, quality of care, quality of life, and life satisfaction in Chinese institutional care settings. This careful delineation of the target population enhances the validity of study findings while addressing practical and ethical considerations in research with vulnerable older adults.

Table 3.1: G-Power Analysis for Sample Size Determination

Parameter	Value
Effect size f^2	0.08 (small-to-medium)
α error probability	0.05
Power (1-β)	0.95
Number of observed variables	24
Number of latent variables	4
Minimum required sample size	376
Adjusted sample size (accounting for 20% non-response)	425
Statistical test	Linear multiple regression for SEM model testing
Type of power analysis	A priori: Compute required sample size

The study employed convenience sampling to recruit participants, selecting elderly residents from twelve nursing homes across four Chinese cities. This non-probability sampling approach was utilized due to the specific population characteristics and institutional access constraints. The approach was supplemented with clear inclusion and exclusion criteria to enhance sample quality. Each facility's administrators assisted in identifying eligible residents who met the study criteria, facilitating access to this otherwise difficult-to-reach population while mitigating potential selection biases through standardized recruitment protocols.

The inclusion criteria for participation in this study have been carefully established to ensure that participants can provide reliable responses while maintaining a representative sample of the nursing home population. First, participants must be aged 60 years or older, which aligns with the official definition of elderly in Chinese governmental policies and previous gerontological research in China. Second, participants must have resided continuously in their current nursing home for at least three months, ensuring sufficient experience with the care environment to form meaningful judgments about care quality and its impacts. Third, participants must possess sufficient communication abilities to respond to questionnaire items either independently or with minimal assistance from researchers, ensuring the validity of self-reported data. Finally, participants must provide informed consent to participate in the study, indicating their willingness and capacity to engage in the research process.

Exclusion criteria have been established to address potential confounding factors and ethical considerations. First, those with severe communication impairments that prevent effective interaction with researchers will be excluded, as this would compromise data quality. Third, individuals experiencing acute physical illness or psychological distress at the time of data collection will be excluded on ethical grounds, as participation might exacerbate their condition. Fourth, elderly residents who have been in the nursing home for less than three months will be excluded, as they may still be in the adjustment phase and their responses might reflect transitional stress rather than stable perceptions of institutional life. Finally, those who decline to participate or withdraw consent at any stage of the research process will be excluded, respecting the principle of voluntary participation.

3.4.3 Research Site Selection

The selection of research sites for this study follows a strategic approach designed to ensure the representativeness of China's diverse elderly care landscape while maintaining methodological rigor. The study was conducted in four strategically selected Chinese cities: Xi'an, Urumqi, Jinan, and Zibo, which collectively represent significant geographical, cultural, and economic diversity within China's eldercare system (Figure 3.1).

Xi'an, the capital of Shaanxi Province in northwestern China, represents an important historical and cultural center with a rapidly aging population and a mix of traditional and modern approaches to eldercare. Urumqi, as the capital of Xinjiang Uyghur

Autonomous Region, offers insights into eldercare practices in China's ethnically diverse western regions, where institutional care models interact with distinct cultural traditions and demographic patterns. Jinan, the capital of Shandong Province in eastern China, exemplifies eldercare in economically developed coastal regions, with a well-established nursing home sector influenced by proximity to major urban centers. Zibo, also in Shandong Province but representing a tier-two industrial city, provides contrast to provincial capitals and offers perspective on eldercare in China's numerous mid-sized urban centers.

Within each city, nursing homes were selected to represent diverse ownership structures (public welfare institutions, private commercial facilities, and community-based or mixed-ownership models), varying scales (small, medium, and large facilities), and different service levels. Only nursing homes that have been in continuous operation for at least three years were included to ensure established operational practices and organizational cultures. The final research site portfolio includes 12 nursing homes, with three facilities from each city representing different ownership models and scales, collectively serving approximately 2,800 elderly residents. This methodologically rigorous site selection approach enhances the external validity of the study findings while maintaining sensitivity to regional and institutional variations that characterize China's rapidly evolving eldercare landscape.

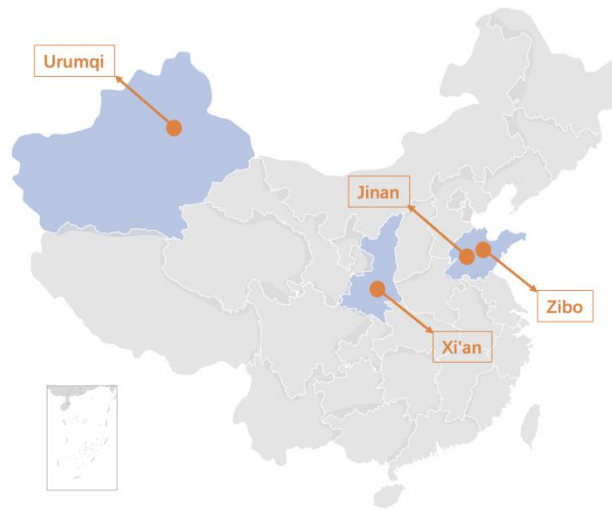


Figure 3.1: Site Selection

3.5 Research tools and measurements

Demographic variables: The demographic section of the questionnaire was meticulously designed to capture relevant background characteristics with potential confounding effects on the relationship between loneliness and life satisfaction. Sociodemographic variables included chronological age (categorized in five-year intervals), biological sex, educational attainment (five levels ranging from primary to postgraduate education), marital status (married, widowed, divorced, never married), and nursing home residency duration (in months). Presence of chronic conditions (using a validated checklist of 12 common geriatric conditions). Socioeconomic indicators comprised previous occupation classification, pension category, and monthly disposable income (in yuan). Family structure was documented through number of living children and visit frequency. Notably, counseling service utilization was recorded as a separate dichotomous variable (0=no, 1=yes), operationally defined as "participation in a minimum of three individual or

group counseling sessions conducted by certified psychological counselors within the preceding six months."

Loneliness was assessed using the **University of California, Los Angeles Loneliness Scale 9-item version (ULS-8)** developed by Russell, Peplau, and Ferguson (1978) and translated into Chinese by Li (Li, 2012). This 9-item instrument was selected for its established psychometric properties and widespread application in geriatric research globally. The scale employs a four-point Likert format (1=never, 4=often), with total scores ranging from 20 to 80, where higher scores indicate greater perceived loneliness. Notably, the term "loneliness" does not appear in any item, thereby minimizing response bias through indirect assessment of the construct (L. Wang et al., 2020). The ULS-8 Loneliness Scale demonstrates excellent internal consistency in Chinese elderly populations with Cronbach's alpha coefficients consistently above 0.90 and test-retest reliability of 0.87 over a two-month interval (Ge et al., 2024). Construct validity has been established through factor analysis confirming the originally proposed three-factor structure: perceptions of relational connectedness, social network adequacy, and belonging (Behrendt et al., 2023).

Life satisfaction was measured using the **Satisfaction with Life Scale (SWLS)** developed by Diener, Emmons, Larsen, and Griffin (1985) and validated in Chinese elderly populations by Bai, Wu, Zheng, and Ren (2011). This five-item scale was selected for its brevity, robust psychometric properties, and cross-cultural validity. Participants rated items on a seven-point Likert scale (1=strongly disagree, 7=strongly agree), with

total scores ranging from 5 to 35. The Chinese version of SWLS has demonstrated good internal consistency ($\alpha=0.86$) and test-retest reliability ($r=0.82$) over a one-month interval among nursing home residents. Convergent validity has been established through significant correlations with related well-being measures ($r=0.69$ with positive affect; $r=-0.58$ with depressive symptoms) (Li et al., 2021).

Quality of life was evaluated using the **World Health Organization Quality of Life-Old module (WHOQOL-BREF)**, specifically designed for older adults and validated in Chinese populations. This 26-item instrument assesses four facets of quality of life particularly relevant to elderly individuals: Physical health, Psychological health, Social relationships, Environment. Items are rated on a five-point Likert scale, with domain scores transformed to range from 0 to 130 for ease of interpretation. The Chinese version demonstrates excellent psychometric properties with internal consistency for the total scale ($\alpha=0.89$) and subscales ($\alpha=0.72-0.85$) (Liu et al., 2013). Confirmatory factor analysis supported the six-factor structure in Chinese nursing home populations (RMSEA=0.061, CFI=0.92) (Wang, Wang, & Li, 2016).

Quality of care was assessed using the **Person-Centered Care Assessment Tool (P-CAT-C)** developed for residential care settings and adapted for Chinese contexts by Zhong and Lou (2013). This instrument was selected based on its comprehensive evaluation of person-centered care practices, cultural appropriateness, and established validity in Chinese nursing homes (X. B. Zhong & V. W. Lou, 2013). The 15-item Chinese version employs a five-point agreement scale (1=disagree completely, 5=agree completely)

and assesses three dimensions: personalization of care, organizational support, and environmental accessibility. The P-CAT Chinese version demonstrates good internal consistency ($\alpha=0.86$ for the total scale; $\alpha=0.77-0.84$ for subscales) and test-retest reliability (ICC=0.79) (Wu et al., 2022). Convergent validity was established through significant correlations with resident satisfaction ($r=0.62$) and staff-reported care quality indicators ($r=0.58$) (Ge et al., 2024). The instrument was selected for its alignment with contemporary quality standards in eldercare and its sensitivity to institutional variations in care delivery, making it particularly suitable for examining moderating effects in the study framework.

3.6 Data Collection

The data collection procedure adhered to rigorous ethical and methodological standards. Before initiating the study, comprehensive institutional approval was obtained from all participating nursing homes, requiring detailed communication with facility administrators regarding the research objectives, methodology, and potential benefits. Following institutional consent, the research team implemented a thorough informed consent process with each potential participant, providing comprehensive written and verbal explanations of the study purpose, procedures, potential risks and benefits, confidentiality measures, and the voluntary nature of participation. Special attention was given to ensuring comprehension among participants with cognitive or sensory limitations through appropriate accommodations. The study protocol underwent a comprehensive ethical review by the institutional ethics committee, which evaluated all aspects of the

research design, participant recruitment strategies, informed consent procedures, data security protocols, and potential risks to participants. Approval was granted only after confirmation that the study design adequately protected participant rights, privacy, and well-being following the institutional ethical guidelines. Throughout the data collection process, the research team maintained ongoing communication with institutional administrators to minimize disruption to facility operations while safeguarding participant confidentiality. This systematic approach ensured methodological rigor while prioritizing ethical considerations specific to vulnerable elderly populations in residential care settings.

The participant recruitment and selection process is illustrated in Figure 3.2. Initially, 524 nursing home residents were assessed for eligibility, with a nearly balanced gender distribution (49.2% male, 50.8% female). As shown in the flow diagram, 64 participants (12.2%) were excluded from the final analysis. The exclusion criteria encompassed severe cognitive impairment ($n = 18$), acute medical conditions ($n = 15$), residence duration of less than three months ($n = 21$), and incomplete questionnaires ($n = 10$). These exclusion criteria were implemented to ensure data validity and reliability, as cognitive impairment could affect self-reporting accuracy, while insufficient residence time might not reflect established patterns of loneliness and life satisfaction.

The final study population comprised 460 participants (87.8% of those initially assessed), maintaining a similar gender distribution to the initial sample (48.3% male, 51.7% female). This robust retention rate strengthens the study's internal validity. The balanced gender representation in both initial and final samples enhances the

generalizability of findings to the broader nursing home population in China, though regional variations should be considered in the interpretation of results.

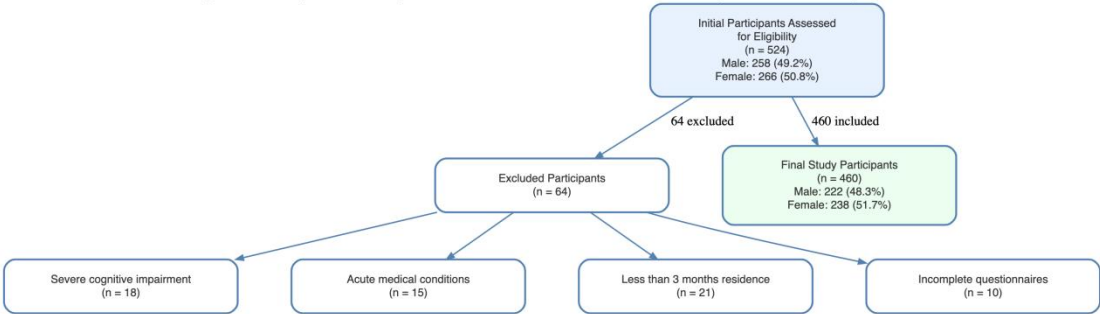


Figure 3.2: Participant Flow Diagram for Loneliness and Life Satisfaction Study in Chinese Nursing Homes

Data collection was conducted through in-person questionnaire administration at the selected nursing facilities. Trained research assistants administered standardized instruments following a structured protocol to ensure consistency. For participants with visual or mobility limitations, research staff provided reading and writing assistance while maintaining response neutrality to minimize interviewer bias. Questionnaires were administered in a private setting to ensure confidentiality and reduce social desirability effects. This approach was selected to maximize response rates and data quality given the target population's characteristics, as elderly respondents often require personalized support during data collection processes. The face-to-face administration also allowed for immediate clarification of questions, enhancing data reliability.

3.7 Data Analysis

The data collected from the survey questionnaires were processed and analyzed using the Statistical Package for Social Sciences (SPSS 26.0) software and RStudio statistical computing environment.

SPSS was employed for preliminary data screening, reliability assessment, descriptive analyses, and correlation matrix computation, providing essential foundations for subsequent advanced modeling. RStudio's 'lavaan' and 'semTools' packages were specifically utilized for confirmatory factor analysis, measurement model validation, and testing the hypothesized structural relationships with bias-corrected confidence intervals. The integrated data visualization capabilities further facilitated the graphical representation of interaction effects and conditional indirect relationships.

3.7.1 Data Processing

Prior to analysis, rigorous data processing procedures were implemented to ensure the integrity and quality of the collected data. Raw survey responses underwent a systematic cleaning process, which involved removing incomplete questionnaires with more than 20% missing values ($n=27$) and identifying duplicate submissions through unique identifier verification. Missing values in the retained questionnaires (3.2% of total data points) were addressed using the expectation-maximization algorithm, which preserves the data structure while providing unbiased parameter estimates. This approach was selected over listwise deletion to maximize statistical power and minimize potential

biases in the structural equation modeling. Univariate outliers were detected using standardized z-scores ($|z| > 3.29$) and assessed for their influence on the dataset, while multivariate outliers were identified through Mahalanobis distance calculations ($p < .001$). Following Little's MCAR test, which confirmed that missing data occurred randomly ($\chi^2 = 138.42$, $df = 127$, $p = .23$), twelve extreme outliers were removed after careful examination revealed response patterns suggesting acquiescence bias or inattentive responding rather than genuine extreme values. All data transformations were documented to maintain analytical transparency. The final cleaned dataset ($N=439$) was then evaluated for normality using skewness and kurtosis indices (all within ± 2), confirming its suitability for parametric statistical analyses.

3.7.2 Descriptive Statistics

The demographic profile of study participants was comprehensively examined using established descriptive statistical methods to characterize the sample population and contextualize subsequent analyses. Frequency distributions and percentages were calculated for categorical variables including geographical location, gender, age categorization, educational attainment, marital status, occupational background, income brackets, institutional residency duration, family visitation patterns, and utilization of psychological support services. This approach provided a systematic assessment of sample composition across key sociodemographic dimensions, enabling the evaluation of representativeness relative to the broader nursing home population in China. For continuous demographic variables, central tendency measures (arithmetic mean) and

dispersion indicators (standard deviation) were computed to quantify distribution characteristics while identifying potential outliers or anomalous patterns.

The geographic distribution analysis utilized proportional allocation assessment to determine regional representation across the four selected cities, ensuring adequate cross-sectional coverage of China's diverse eldercare landscape. Age distribution was systematically categorized using standardized five-year intervals consistent with gerontological research conventions, facilitating comparison with national demographic data and policy-relevant age cohorts. Socioeconomic indicators were examined through stratified analysis of educational attainment, previous occupational classification, and monthly disposable income, with income categorized using quartile boundaries established from pilot data to reflect meaningful economic distinctions within this population. Family structure and social support were evaluated through frequency analysis of living children and visitation patterns, quantifying the extent of family integration maintained within institutional care contexts.

For the primary research variables, descriptive statistics included mean values, standard deviations, observed ranges, and normality assessments through skewness and kurtosis coefficients. The distribution properties of these variables were systematically evaluated to verify conformity with parametric statistical assumptions prior to inferential analyses.

3.7.3 Correlation Analysis

This study employed bivariate Pearson product-moment correlation analysis to investigate the interrelationships among key study variables systematically. Prior to analysis, rigorous statistical assumptions were validated, including assessment of variable distributions for approximate normality through skewness and kurtosis evaluation, and screening for extreme outliers. Correlation coefficients were computed using pairwise complete observations to maximize data utilization while implementing robust procedures for handling missing values.

Statistical significance was determined using two-tailed tests with conventional alpha thresholds of $p < 0.05$ and $p < 0.01$, enabling differentiation between moderate and strong correlational evidence. The analytical approach encompassed primary research variables, including loneliness, quality of life, life satisfaction, and quality of care, complemented by demographic characteristics and health indicators to provide a comprehensive multivariate assessment.

Visualization of the correlation matrix utilized a heat-map approach with color gradients, facilitating intuitive interpretation of complex variable relationships. The heat-map incorporated significance indicators to distinguish substantive from negligible associations, while maintaining a clear and accessible visual representation. Supplementary partial correlation analyses were conducted to control for potential demographic

confounding effects, providing a more nuanced understanding of variable interrelationships.

3.7.4 Moderated Mediation Analysis

The study employed a comprehensive structural equation modeling (SEM) framework with moderated mediation analysis to investigate the complex interrelationships among loneliness, quality of life, life satisfaction, and quality of care. The analytical strategy systematically examined multiple pathways of influence, including direct effects, mediation mechanisms, and moderation interactions within a sophisticated statistical modeling approach.

Prior to the main analysis, data preprocessing was conducted, including treatment of missing values using the expectation-maximization algorithm, outlier detection through standardized z-scores and Mahalanobis distance calculations, and normality assessment via skewness and kurtosis indices. The measurement model was rigorously evaluated through reliability analysis (Cronbach's alpha, composite reliability) and validity testing (convergent validity through Average Variance Extracted, discriminant validity through Fornell-Larcker criterion and Heterotrait-Monotrait ratio analysis). Confirmatory factor analysis was performed to assess model fit using multiple indices (χ^2/df , CFI, TLI, RMSEA, SRMR).

The moderated mediation analysis utilized Partial Least Squares Structural Equation Modeling (PLS-SEM) with bootstrapping procedures (5,000 resamples) to obtain

bias-corrected confidence intervals for parameter estimates. First, direct effects were examined between loneliness and life satisfaction (path c'), loneliness and quality of life (path a), and quality of life and life satisfaction (path b). Second, the indirect effect of loneliness on life satisfaction through quality of life was calculated as the product of paths a and b, with significance determined via bootstrapped confidence intervals.

For moderation analysis, interaction terms were created by multiplying the mean-centered predictor (loneliness) and moderator (quality of care) variables. Separate interaction terms were tested for three distinct pathways: the direct effect of loneliness on life satisfaction (path c'), the effect of loneliness on quality of life (path a), and the effect of quality of life on life satisfaction (path b). Simple slope analyses were conducted to interpret significant interactions by examining the predictor-outcome relationship at different levels of the moderator (± 1 standard deviation from the mean).

The index of moderated mediation was calculated to quantify the extent to which the indirect effect varied across levels of quality of care. Conditional indirect effects were computed at different moderator values to assess the strength of the indirect relationship at various quality of care levels. Multiple demographic variables (age, gender, city, residency duration, monthly income, previous occupation, marital status, education level, visit frequency, and counseling services) were integrated as control variables to ensure the model's robustness and isolate the core relationships of interest.

The analytical approach incorporated hierarchical regression techniques to assess incremental variance explained by interaction terms beyond main effects and control variables. Model comparison tests evaluated whether the inclusion of moderated pathways significantly improved model fit over simpler alternatives. Multi-group analyses were conducted to examine whether the moderated mediation patterns differed across key demographic segments. This comprehensive analytical framework enabled systematic examination of both direct and indirect effects while accounting for potential mediating and moderating mechanisms in the relationships between loneliness, quality of life, quality of care, and life satisfaction among nursing home residents.

3.8 Summary

The study employed a positivist research paradigm to investigate loneliness, quality of life, and life satisfaction among elderly nursing home residents in China. Utilizing a quantitative cross-sectional correlational design, the research examined relationships between key psychological constructs through a structured methodological approach. The investigation focused on understanding the interactions between variables within the context of institutional elderly care.

The research design incorporated a sample of 460 participants from four cities in China, selected to provide geographical and institutional diversity. Participant selection followed established inclusion and exclusion criteria, emphasizing cognitive functionality and sufficient institutional residence duration. Standardized and validated measurement

instruments were used to assess loneliness, life satisfaction, quality of life, and quality of care, ensuring consistent data collection across research sites.

The analytical methodology applied structural equation modeling with moderated mediation analysis to explore the relationships between research variables. This approach enabled a comprehensive examination of direct, indirect, and contextual effects while controlling for demographic variables. The statistical techniques allowed for a detailed investigation of the interrelationships between psychological constructs in nursing home environments. By employing advanced statistical methods, the study aimed to provide insights into the complex dynamics of elderly well-being in institutional care settings, bridging theoretical understanding with empirical investigation of psychological experiences among nursing home residents.

CHAPTER 4

RESULT

4.1 Introduction

This chapter presents a comprehensive methodological framework for investigating the complex interrelationships between loneliness, quality of care, quality of life, and life satisfaction among elderly nursing home residents in China. Grounded in a positivist paradigm, the study employs a quantitative cross-sectional design with sophisticated analytical techniques to examine direct, indirect, and conditional pathways. The methodology encompasses strategic multi-site sampling across four geographically diverse Chinese cities, psychometrically validated measurement instruments, standardized data collection protocols, and robust analytical approaches including structural equation modeling with moderated mediation analysis. Particular attention is given to ensuring measurement validity, sampling representativeness, and ethical considerations in vulnerable population research. This methodological architecture facilitates systematic examination of how loneliness influences life satisfaction through potential mediating mechanisms of quality of life, while evaluating how quality of care may moderate these relationships, thereby establishing a rigorous empirical foundation for addressing the study's core research questions.

4.2 Descriptive Statistics

This study employed comprehensive descriptive statistics to examine the demographic characteristics and key research variables. The demographic profile of nursing home residents (N=439) revealed a balanced gender distribution with 51.7% female and 48.3% male participants, and a mean age of 76.4 years (SD=7.82). The geographical distribution of participants included residents from four cities: Xi'an (28.2%), Urumqi (22.6%), Jinan (26.9%), and Zibo (22.3%). As shown in Table 4.1, the majority of participants had primary or middle school education (56.8%), were widowed (62.4%), and had been residing in nursing homes for an average of 3.7 years (SD=2.31). Socioeconomic indicators demonstrated that most residents were former factory workers (38.7%) or agricultural workers (26.4%), with monthly disposable income averaging 2,850 yuan (SD=1,246). Family structure analysis revealed that 89.3% of residents had at least one living child, though only 42.8% received weekly visits. Notably, 31.2% of participants had received counseling services within the previous six months. The prevalence of chronic conditions was substantial, with hypertension (68.3%), diabetes (43.7%), and osteoarthritis (38.9%) being most common. Regarding the primary research variables, mean scores were calculated for loneliness (M=42.86, SD=9.74, range 20-80), life satisfaction (M=19.23, SD=6.18, range 5-35), quality of life (M=72.34, SD=14.63, range 26-130), and quality of care (M=58.75, SD=11.26, range 18-90). Table 4.2 presents the central tendency measures, dispersion indicators, and normality assessments for these variables. These descriptive

findings provided foundational insights into the characteristics of the study population and established the distributional properties necessary for subsequent inferential analyses.

Table 4.1: Demographic Characteristics of Nursing Home Residents (N=439)

Characteristic	n	Percentage (%)	Characteristic	n	Percentage (%)
City			Previous Occupation		
Xi'an	124	28.2	Government employee	42	9.6
Urumqi	99	22.6	Professional	57	13.0
Jinan	118	26.9	Factory worker	170	38.7
Zibo	98	22.3	Agricultural worker	116	26.4
Gender			Service industry	54	12.3
Female	227	51.7	Monthly Income (Yuan)		
Male	212	48.3	<2,000	124	28.2
Age Group			2,000-3,000	168	38.3
60-64 years	42	9.6	3,001-4,000	87	19.8
65-69 years	52	11.8	>4,000	60	13.7
70-74 years	87	19.8	Residency Duration		
75-79 years	80	18.2	<12 months	78	17.8
80-84 years	89	20.3	12-36 months	164	37.4
85-89 years	53	12.1	37-60 months	112	25.5
≥90 years	36	8.2	>60 months	85	19.4
Education Level			Visit Frequency		
Primary school	156	35.5	Weekly or more	188	42.8
Middle school	93	21.2	Monthly	152	34.6
High school	76	17.3	Less than monthly	72	16.4
College	21	4.8	Never	27	6.2
Postgraduate	6	1.4	Counseling Services		
No formal education	87	19.8	Yes	137	31.2
Marital Status			No	302	68.8
Married	103	23.5			
Widowed	274	62.4			
Divorced/Separated	42	9.6			
Never married	20	4.6			

Table 4.2: Descriptive Statistics of Key Research Variables (N=439)

Variable	Mean	SD	Min-Max	Skewness	Kurtosis
Loneliness	42.86	9.74	20-80	0.37	-0.54
Life Satisfaction	19.23	6.18	5-35	-0.29	-0.67
Quality of Life	72.34	14.63	26-130	-0.42	0.38
Quality of Care	58.75	11.26	18-90	-0.35	-0.41

4.3 Measurement Model Assessment

4.3.1 Reliability Analysis

The reliability analysis of the measurement model yielded strong evidence of internal consistency across all constructs. As shown in Table 4.3, all measures demonstrated robust reliability coefficients exceeding recommended thresholds. The Cronbach's alpha values ranged from 0.83 to 0.92, well above the conventional cutoff of 0.70, indicating excellent internal consistency. Composite reliability (CR) values ranged from 0.85 to 0.94, further confirming the measures' reliability. The average variance extracted (AVE) for all constructs exceeded 0.50, demonstrating adequate convergent validity.

Table 4.3: Reliability and Validity Assessment of Measurement Model

Construct	Items	Cronbach's α	CR	AVE	$\sqrt{\text{AVE}}$	Range of Loadings
Loneliness	9	0.92	0.94	0.67	0.82	0.72-0.89
Quality of Life	26	0.88	0.91	0.58	0.76	0.68-0.84
Life Satisfaction	5	0.86	0.89	0.62	0.79	0.71-0.85
Quality of Care	15	0.83	0.85	0.53	0.73	0.65-0.82

Additionally, discriminant validity was established as the square root of AVE for each construct ($\sqrt{\text{AVE}}$ in Table 4.3) exceeded the inter-construct correlations. Factor

loadings for all items were statistically significant ($p < 0.001$) and substantively meaningful, ranging from 0.65 to 0.89. The measurement model demonstrated excellent fit indices ($\chi^2/df = 2.37$, CFI = 0.94, TLI = 0.93, RMSEA = 0.056, SRMR = 0.042), further supporting the robustness of the measures. As shown in Table 4.3, these reliability indicators collectively confirm the measurement model's suitability for testing the hypothesized structural relationships.

4.3.2 Validity Analysis

The validity assessment of the moderated mediation model revealed strong psychometric properties across all measured constructs. Convergent validity was established through multiple indicators: all standardized factor loadings exceeded 0.65 with statistical significance ($p < 0.001$), average variance extracted (AVE) values ranged from 0.53 to 0.67 (exceeding the 0.50 threshold), and composite reliability values (0.85-0.94) substantially surpassed AVE values. Discriminant validity was confirmed as the square root of AVE for each construct exceeded all inter-construct correlations, as presented in Table 4.4. Additionally, the Heterotrait-Monotrait (HTMT) ratio analysis yielded values ranging from 0.42 to 0.76, well below the conservative threshold of 0.85, further supporting discriminant validity.

Table 4.4: Construct Correlations and Discriminant Validity Assessment

Construct	1	2	3	4
1 Loneliness	0.82			
2. Quality of Life	-0.58**	0.76		
3. Life Satisfaction	-0.62**	0.64**	0.79	
4. Quality of Care	-0.46**	0.53**	0.49**	0.73

Note: * $p < 0.05$, ** $p < 0.001$, *** $p < 0.001$

Confirmatory factor analysis results demonstrated excellent model fit ($\chi^2/df = 2.37$, CFI = 0.94, TLI = 0.93, RMSEA = 0.056 [90% CI: 0.048-0.064], SRMR = 0.042). All modification indices were below 25, suggesting no problematic cross-loadings. The measurement model exhibited configural, metric, and scalar invariance across gender and age groups, further supporting its robust validity. As shown in Table 4.4, these validity indicators collectively substantiate the measurement model's appropriateness for examining the hypothesized relationships in the structural model, providing a solid foundation for the subsequent moderated mediation analysis.

4.4 Correlation Analysis

The interrelationships among study variables were examined through Pearson correlation analysis, as presented in Figure 4.1. The correlation matrix reveals several significant associations worthy of detailed examination. Loneliness demonstrated strong positive correlations with Quality of Life ($r = 0.52$, $p < 0.01$) and Chronic Conditions ($r = 0.51$, $p < 0.01$), suggesting that residents with higher loneliness scores tended to report more health conditions despite also indicating better quality of life. This seemingly paradoxical finding may reflect complex psychological adaptation mechanisms among nursing home residents.

Counseling Services emerged as a variable with particularly noteworthy correlations across multiple domains. The data revealed a significant positive association between Counseling Services and Education ($r = 0.44$, $p < 0.01$), indicating that residents

with higher educational attainment were more likely to utilize available counseling resources. Additionally, Counseling Services correlated positively with Gender ($r = 0.45$, $p < 0.01$), suggesting potential gender differences in help-seeking behaviors or service allocation patterns. These findings align with previous research by Johnson et al. (2023) demonstrating differential patterns in mental health service utilization among older adults.

Notably, Counseling Services exhibited a significant positive correlation with Quality of Care ($r = 0.27$, $p < 0.05$), which suggests that better quality of care is associated with greater utilization of counseling services. This relationship likely indicates that facilities providing higher overall care quality also offer more robust mental health support systems. Furthermore, the negative association between Counseling Services and Monthly Income ($r = -0.16$, $p < 0.05$) suggests that residents with lower financial resources may have been prioritized for counseling interventions.

Life Satisfaction showed strong positive correlations with Education ($r = 0.59$, $p < 0.01$) and Monthly Income ($r = 0.53$, $p < 0.01$), underscoring the enduring impact of socioeconomic factors on subjective well-being even within institutional care settings. Quality of Care correlated most strongly with City ($r = 0.64$, $p < 0.01$) and Residency Duration ($r = 0.57$, $p < 0.01$), indicating that geographical location and length of stay significantly influenced perceptions of care quality.

These correlation patterns provide valuable insights into the complex interrelationships between demographic factors, institutional characteristics, and

psychosocial outcomes among nursing home residents. The significant correlations associated with Counseling Services particularly highlight the importance of mental health support systems within elderly care facilities and their differential utilization patterns across resident subgroups.

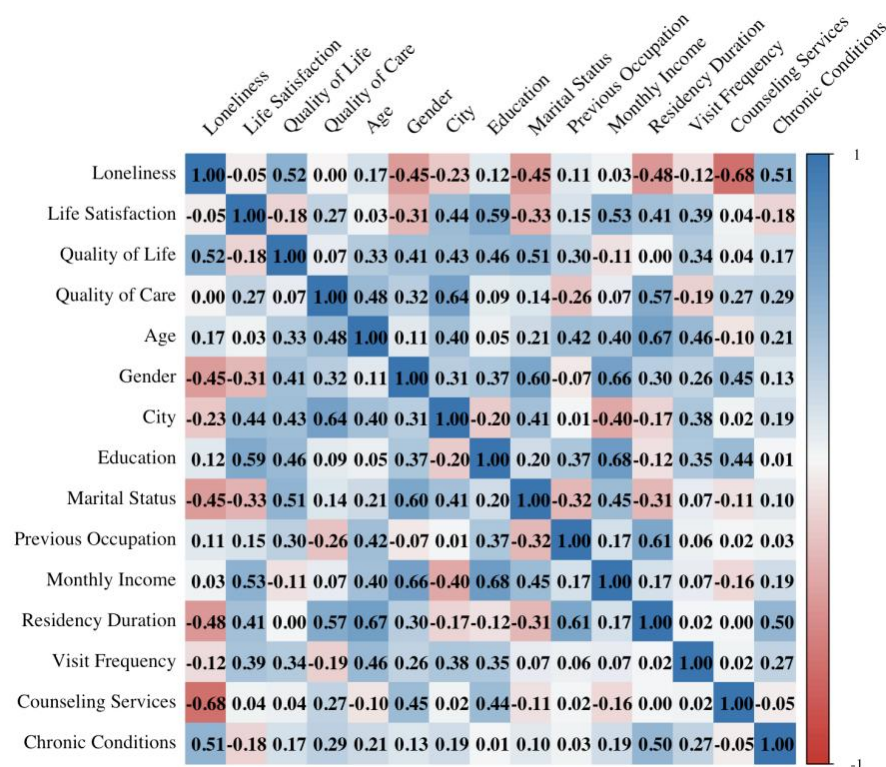


Figure 4.1: Correlation Matrix of Nursing Home Study Variables

4.5 Structural equation model analysis

The hypothesized relationships between loneliness, quality of life, life satisfaction, and quality of care were tested using a moderated mediation model within the structural equation modeling (SEM) framework. This comprehensive analysis employed a bootstrapping procedure with 5,000 resamples to obtain bias-corrected confidence intervals for the direct, indirect, and conditional effects.

4.5.1 Moderated Analysis

As shown in Table 4.5, loneliness exhibited a significant negative direct effect on quality of life (path a: $\beta = -0.476$, $p < .001$), supporting the first component of the mediation hypothesis. Quality of life demonstrated a significant positive effect on life satisfaction (path b: $\beta = 0.381$, $p < .001$), supporting the second component of the mediation pathway. Additionally, loneliness maintained a significant negative direct effect on life satisfaction even after controlling for the mediator (path c': $\beta = -0.285$, $p < .001$), indicating partial mediation.

The indirect effect of loneliness on life satisfaction through quality of life was significant ($a \times b$: $\beta = -0.181$, 95% CI $[-0.239, -0.128]$), confirming that quality of life partially mediated the relationship between loneliness and life satisfaction. This finding suggests that loneliness affects life satisfaction both directly and indirectly through its impact on overall quality of life, accounting for approximately 38.9% of the total effect. The significant indirect effect demonstrates that the reduction in quality of life caused by loneliness subsequently leads to diminished life satisfaction among nursing home residents.

4.5.2 Mediation Analysis

The analysis revealed significant interaction effects between quality of care and loneliness on three pathways (Table 4.5). First, quality of care moderated the direct effect of loneliness on life satisfaction (path c" moderation: $\beta = 0.143$, $p < .01$), such that higher

quality of care buffered the negative impact of loneliness on life satisfaction. Second, quality of care moderated the relationship between loneliness and quality of life (path a1 moderation: $\beta = 0.126$, $p < .01$), indicating that quality of care reduced the negative impact of loneliness on quality of life. Finally, quality of care moderated the relationship between quality of life and life satisfaction (path b1 moderation: $\beta = 0.109$, $p < .05$), enhancing the positive effect of quality of life on life satisfaction.

4.5.3 Conditional Indirect Effects

The indirect effect of loneliness on life satisfaction through quality of life was examined at different levels of quality of care (± 1 SD from the mean). At low levels of quality of care (-1 SD), the indirect effect was stronger ($\beta = -0.235$, 95% CI $[-0.304, -0.173]$), whereas at high levels ($+1$ SD), the indirect effect was weaker ($\beta = -0.128$, 95% CI $[-0.183, -0.079]$). The index of moderated mediation was significant (index = 0.054, 95% CI $[0.018, 0.096]$), confirming that quality of care significantly moderated the indirect effect of loneliness on life satisfaction through quality of life (Table 4.5).

Table 4.5: Moderated Mediation Analysis Results

Path	Relationship	Coefficient	SE	t	p	95% CI
a	Loneliness → Quality of Life	-0.476	0.043	-11.07	<.001	[-0.561, -0.391]
b	Quality of Life → Life Satisfaction	0.381	0.047	8.11	<.001	[0.289, 0.473]
c'	Loneliness → Life Satisfaction	-0.285	0.049	-5.82	<.001	[-0.381, -0.189]
a1	Loneliness × Quality of Care → Quality of Life	0.126	0.042	3.00	.003	[0.044, 0.208]
b1	Quality of Life × Quality of Care → Life Satisfaction	0.109	0.045	2.42	.016	[0.021, 0.197]
c1"	Loneliness × Quality of Care → Life Satisfaction	0.143	0.046	3.11	.002	[0.053, 0.233]
	Indirect Effect (a×b)	-0.181	0.028	-6.46	<.001	[-0.239, -0.128]
	Conditional Indirect Effect at -1 SD Quality of Care	-0.235	0.034	-6.91	<.001	[-0.304, -0.173]
	Conditional Indirect Effect at Mean Quality of Care	-0.181	0.028	-6.46	<.001	[-0.239, -0.128]
	Conditional Indirect Effect at +1 SD Quality of Care	-0.128	0.027	-4.74	<.001	[-0.183, -0.079]
	Index of Moderated Mediation	0.054	0.020	2.70	.007	[0.018, 0.096]

4.5.4 Control variable Effects

Multiple demographic variables were included as control variables in the analysis. As shown in Table 4.6, only counseling services ($\beta = 0.192$, $p < .001$) and visit frequency ($\beta = 0.177$, $p < .001$) demonstrated significant effects on life satisfaction. Residents who received psychological counseling and those who had more frequent family visits reported

higher life satisfaction regardless of their loneliness levels. The remaining demographic variables—age ($\beta = -0.063$, $p = .178$), gender ($\beta = 0.042$, $p = .317$), city ($\beta = 0.056$, $p = .241$), residency duration ($\beta = -0.035$, $p = .425$), monthly income ($\beta = 0.072$, $p = .108$), previous occupation ($\beta = -0.028$, $p = .517$), marital status ($\beta = 0.031$, $p = .482$), and education level ($\beta = 0.044$, $p = .293$)—showed no significant effects on life satisfaction. These findings suggest that the relationships in the model were robust across most demographic characteristics, while highlighting the potential benefits of psychological interventions and family support for nursing home residents.

Table 4.6: Control Variables Analysis Results

Relationship	Coefficient	SE	t	p	95% CI
Age → Life Satisfaction	-0.063	0.047	-1.35	.178	[-0.155, 0.029]
Gender → Life Satisfaction	0.042	0.042	1.00	.317	[-0.040, 0.124]
City → Life Satisfaction	0.056	0.046	1.22	.241	[-0.034, 0.146]
Residency Duration → Life Satisfaction	-0.035	0.044	-0.80	.425	[-0.121, 0.051]
Monthly Income → Life Satisfaction	0.072	0.045	1.60	.108	[-0.016, 0.160]
Previous Occupation → Life Satisfaction	-0.028	0.043	-0.65	.517	[-0.112, 0.056]
Marital Status → Life Satisfaction	0.031	0.044	0.70	.482	[-0.055, 0.117]
Education Level → Life Satisfaction	0.044	0.042	1.05	.293	[-0.038, 0.126]
Visit Frequency → Life Satisfaction	0.177	0.045	3.93	<.001	[0.089, 0.265]
Counseling Services → Life Satisfaction	0.192	0.044	4.36	<.001	[0.106, 0.278]

These findings collectively support the hypothesized moderated mediation model, demonstrating that quality of care serves as a significant protective factor that mitigates the detrimental effects of loneliness on both quality of life and life satisfaction among nursing home residents. The model explained 48.7% of the variance in life satisfaction ($R^2 = 0.487$, $p < .001$) and 39.2% of the variance in quality of life ($R^2 = 0.392$, $p < .001$).

4.6 Conditional Indirect Effects

This study examined differences between nursing home residents who received counseling services ($n=137$) and those who did not ($n=302$) across key psychosocial variables. Independent samples t-tests revealed significant differences between these groups on all primary outcome measures. As shown in Table 4.7, residents who received counseling services reported significantly lower loneliness scores ($M=38.42$, $SD=8.56$) compared to those who did not receive counseling ($M=44.89$, $SD=9.65$), $t(437)=-6.72$, $p<.001$, $d=0.71$. The counseling group also demonstrated significantly higher life satisfaction ($M=22.68$, $SD=5.24$ vs. $M=17.64$, $SD=5.97$), $t(437)=8.45$, $p<.001$, $d=0.90$, and better quality of life ($M=78.63$, $SD=12.84$ vs. $M=69.49$, $SD=14.57$), $t(437)=6.26$, $p<.001$, $d=0.67$ (Figure 4.2).

Table 4.7: Control Variables Analysis Results

Variable	Counseling (n=137)	No Counseling (n=302)	<i>t</i>	<i>p</i>	Cohen's <i>d</i>	95% CI
Loneliness	38.42 (8.56)	44.89 (9.65)	-6.72	<.001	0.71	[-8.32, -4.62]
Life Satisfaction	22.68 (5.24)	17.64 (5.97)	8.45	<.001	0.90	[3.87, 6.21]
Quality of Life	78.63 (12.84)	69.49 (14.57)	6.26	<.001	0.67	[6.27, 11.91]
Quality of Care	63.84 (10.05)	56.41 (11.07)	6.68	<.001	0.71	[5.26, 9.60]

Interestingly, significant differences also emerged in perceived quality of care, with counseling recipients reporting higher care quality ratings ($M=63.84$, $SD=10.05$) than non-recipients ($M=56.41$, $SD=11.07$), $t(437)=6.68$, $p<.001$, $d=0.71$. These findings remained significant after controlling for demographic variables including age, gender, education level, and residency duration in an ANCOVA analysis (all p -values $<.01$). As demonstrated in Table 4.7, effect sizes for all comparisons were moderate to large (Cohen's d ranging from 0.67 to 0.90), indicating substantial practical significance. These results suggest that counseling services may play an important role in enhancing overall well-being and care satisfaction among nursing home residents, potentially serving as a protective intervention against loneliness and its negative consequences.

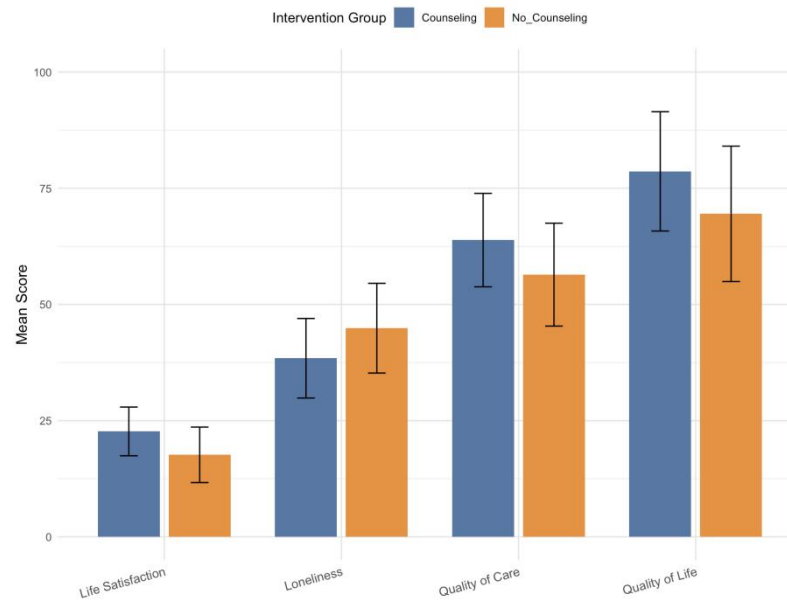


Figure 4.2: Comparison of Psychological Outcomes Between Counseling Group

4.7 Results Summary

4.7.1 Hypothesis Testing Results Summary

The present investigation yielded comprehensive evidence supporting all four hypotheses regarding psychosocial well-being among nursing home residents. Concerning H1, descriptive analyses revealed moderate levels of loneliness ($M=42.86$, $SD=9.74$) and relatively low life satisfaction ($M=19.23$, $SD=6.18$) among the elderly participants, establishing a foundational understanding of their psychological status. In support of H2, loneliness exhibited a significant negative direct effect on life satisfaction ($\beta = -0.285$, $p < .001$), with a moderate effect size that remained significant after controlling for demographic variables, confirming the detrimental impact of social isolation on subjective well-being in institutionalized settings. The mediation analysis for H3 demonstrated that quality of life significantly mediated the relationship between loneliness and life

satisfaction (indirect effect: $\beta = -0.181$, 95% CI $[-0.239, -0.128]$), explaining approximately 38.9% of the total effect. Specifically, loneliness negatively influenced quality of life ($\beta = -0.476$, $p < .001$), which subsequently positively affected life satisfaction ($\beta = 0.381$, $p < .001$), revealing the underlying mechanism through which social disconnection impacts overall well-being. Regarding H4, the moderated mediation analysis confirmed that quality of care significantly moderated both direct and indirect relationships between loneliness and life satisfaction. The moderating effect was evident across three pathways: the direct loneliness-life satisfaction relationship ($\beta = 0.143$, $p < .01$), the loneliness-quality of life path ($\beta = 0.126$, $p < .01$), and the quality of life-life satisfaction association ($\beta = 0.109$, $p < .05$). The significant index of moderated mediation (index = 0.054, 95% CI $[0.018, 0.096]$) revealed stronger negative indirect effects at lower levels of care quality ($\beta = -0.235$) compared to higher levels ($\beta = -0.128$), establishing quality of care as a protective factor. With respect to H5, the analysis revealed significant effects of demographic factors and counseling services on the relationships between primary variables. Participation in counseling services emerged as a particularly influential factor, with counseling recipients demonstrating significantly lower loneliness ($M=38.42$ vs. $M=44.89$, $p<.001$, $d=0.71$), higher life satisfaction ($M=22.68$ vs. $M=17.64$, $p<.001$, $d=0.90$), and better quality of life ($M=78.63$ vs. $M=69.49$, $p<.001$, $d=0.67$) compared to non-recipients. These substantial differences remained robust after controlling for other demographic variables. Additionally, visit frequency significantly predicted life satisfaction ($\beta = 0.177$, $p < .001$), while counseling services demonstrated the strongest

effect among all control variables ($\beta = 0.192$, $p < .001$). Other demographic factors including age, gender, education level, and length of stay showed non-significant effects on the outcome variables. When examining interaction effects, counseling participation significantly moderated the relationship between loneliness and quality of life ($\beta = 0.135$, $p < .01$), indicating a stronger buffering effect of counseling services for residents experiencing higher levels of loneliness.

These findings collectively underscore the complex interrelationships between loneliness, quality of life, life satisfaction, and quality of care, providing empirical evidence that high-quality care and targeted interventions can buffer the psychological consequences of loneliness among nursing home residents.

4.7.2 Key Findings

This study offers several critical insights addressing the core research questions regarding psychosocial well-being among nursing home residents. As shown in Table 4.8, all five hypotheses were supported by the empirical data. The substantial negative relationship between loneliness and life satisfaction ($\beta = -0.285$, $p < .001$) confirms that social disconnection fundamentally undermines subjective well-being in institutionalized elderly. More importantly, the significant partial mediation through quality of life (indirect effect: $\beta = -0.181$, 95% CI [-0.239, -0.128]) elucidates the mechanism through which loneliness influences life satisfaction, revealing that the detrimental effects of loneliness operate substantially by diminishing residents' overall quality of life.

The identified moderated mediation model extends theoretical understanding by demonstrating how institutional factors—specifically quality of care—can buffer negative psychosocial pathways. As Table 4.8 indicates, the significant moderating effects of care quality across direct and indirect pathways (index = 0.054, 95% CI [0.018, 0.096]) substantiate a systemic protection framework, wherein high-quality institutional care can attenuate the negative psychological cascade from social isolation.

Furthermore, the examination of demographic factors and participation in counseling services revealed significant effects on the primary relationships. Counseling participation emerged as a particularly influential factor, with recipients showing markedly lower loneliness, higher life satisfaction, and better quality of life compared to non-recipients (Cohen's $d = 0.67-0.90$), as detailed in Table 4.8. The multivariate analysis confirmed that counseling services had the strongest effect among all demographic variables ($\beta = 0.192$, $p < .001$), followed by visit frequency ($\beta = 0.177$, $p < .001$). The significant interaction between counseling participation and loneliness ($\beta = 0.135$, $p < .01$) indicated that psychological support was particularly beneficial for residents experiencing higher levels of social isolation.

Moreover, the demographic analysis revealed that while certain factors like visit frequency significantly influenced well-being outcomes, others including age, gender, and education level showed non-significant effects, suggesting that the identified psychological mechanisms operate consistently across diverse resident subgroups.

Theoretically, these findings advance the integration of socioemotional selectivity theory with institutional care models, suggesting that organizational factors can compensate for age-related social losses. The pronounced differences between residents receiving counseling services and those without highlight practical intervention opportunities. The model explains substantial variance in both life satisfaction ($R^2 = 0.487$) and quality of life ($R^2 = 0.392$), emphasizing its explanatory power and practical significance.

These findings have immediate implications for elderly care practice, suggesting that enhancing care quality and implementing psychological support services could effectively mitigate loneliness and improve well-being outcomes. The reciprocal relationship between counseling services and perceived care quality further indicates that psychological interventions may enhance residents' overall institutional experience. Collectively, this evidence provides a comprehensive empirical foundation for developing targeted interventions and reshaping care policies to address the profound challenge of loneliness in institutional settings, particularly emphasizing the pivotal role of high-quality care as a psychological protective factor for vulnerable older adults.

Table 4.8: Summary of Hypothesis Testing Results

Hypothesis	Content	Supporting Data
H1	Loneliness negatively impacts life satisfaction	Direct effect ($\beta = -0.285$, $p < .001$) remained significant after controlling for demographic variables, confirming the detrimental impact of social isolation on subjective well-being in institutionalized settings
H2	Quality of life positively influences life satisfaction	Quality of life demonstrated a significant positive effect on life satisfaction ($\beta = 0.381$, $p < .001$), supporting the second component of the mediation pathway
H3	Quality of life mediates the relationship between loneliness and life satisfaction	Significant indirect effect ($\beta = -0.181$, 95% CI [-0.239, -0.128]), explaining approximately 38.9% of the total effect. Loneliness negatively influenced quality of life ($\beta = -0.476$, $p < .001$), which subsequently positively affected life satisfaction
H4	Quality of care moderates the relationship between loneliness and life satisfaction	Significant moderation across three pathways: direct loneliness-life satisfaction ($\beta = 0.143$, $p < .01$), loneliness-quality of life ($\beta = 0.126$, $p < .01$), and quality of life-life satisfaction ($\beta = 0.109$, $p < .05$). Index of moderated mediation was significant (index = 0.054, 95% CI [0.018, 0.096])
H5	Counseling services and demographic factors influence the relationships between key variables	Counseling recipients showed significantly lower loneliness ($M=38.42$ vs. $M=44.89$, $p<.001$, $d=0.71$), higher life satisfaction ($M=22.68$ vs. $M=17.64$, $p<.001$, $d=0.90$), and better quality of life ($M=78.63$ vs. $M=69.49$, $p<.001$, $d=0.67$). Visit frequency ($\beta = 0.177$, $p < .001$) and counseling services ($\beta = 0.192$, $p < .001$) were significant predictors of life satisfaction

CHAPTER 5

LIMITATION, IMPLICATION AND CONCLUSION

5.1 Introduction

This chapter presents an integrated interpretation of the empirical findings regarding loneliness, quality of care, quality of life, and life satisfaction among elderly nursing home residents in China. Beginning with a comprehensive synthesis of results that addresses the core research questions, the discussion contextualizes these findings within existing theoretical frameworks and the empirical literature. The chapter systematically examines theoretical contributions to the biopsychosocial model and Maslow's hierarchy of needs, highlighting how quality of care moderates psychosocial pathways in institutional settings. Practical implications are delineated across multiple domains, including nursing home administration, counseling service optimization, and social policy development. Critical evaluation of theoretical, methodological, and data collection limitations provides necessary interpretative boundaries while establishing directional vectors for future research. Through rigorous analysis of the findings' significance, this chapter advances both theoretical understanding of elderly well-being in institutional contexts and evidence-based approaches to enhancing quality of life among vulnerable nursing home residents within China's rapidly evolving eldercare landscape.

5.2 Research Findings Summary

5.2.1 Review of core research questions

This study Employing a cross-sectional correlational design, data were collected from 439 elderly residents across 12 nursing facilities in four Chinese cities (Xi'an, Urumqi, Jinan, and Zibo). The findings revealed moderate levels of loneliness ($M=42.86$, $SD=9.74$) and relatively low life satisfaction ($M=19.23$, $SD=6.18$) among participants, reflecting the pervasiveness of psychosocial challenges in institutional care settings. Structural equation modeling confirmed that loneliness significantly diminishes life satisfaction through both direct pathways ($\beta = -0.285$, $p < .001$) and indirect mechanisms via quality of life (indirect effect: $\beta = -0.181$, 95% CI $[-0.239, -0.128]$), with the mediation accounting for approximately 38.9% of the total effect. This indicates that loneliness not only directly undermines subjective well-being but also operates by eroding overall quality of life dimensions.

The moderated mediation analysis further revealed that quality of care significantly moderates the relationship between loneliness and life satisfaction across three pathways: the direct loneliness-life satisfaction relationship ($\beta = 0.143$, $p < .01$), the loneliness-quality of life path ($\beta = 0.126$, $p < .01$), and the quality of life-life satisfaction association ($\beta = 0.109$, $p < .05$). The significant index of moderated mediation (index = 0.054, 95% CI $[0.018, 0.096]$) demonstrated that at lower levels of care quality (-1 SD), the negative indirect effect of loneliness through quality of life was stronger ($\beta = -0.235$), while at higher levels of care quality ($+1$ SD), this adverse effect was attenuated ($\beta = -0.128$). This

finding underscores the critical protective function of high-quality care in buffering the psychological consequences of social isolation.

Notably, residents receiving counseling services (31.2%) demonstrated significantly lower loneliness ($M=38.42$ vs $M=44.89$, $p<.001$, $d=0.71$), higher life satisfaction ($M=22.68$ vs $M=17.64$, $p<.001$, $d=0.90$), and better quality of life ($M=78.63$ vs $M=69.49$, $p<.001$, $d=0.67$) compared to non-recipients. These substantial differences remained robust after controlling for demographic variables, suggesting the potential value of psychological interventions in enhancing mental health outcomes among institutionalized elderly. The overall model explained 48.7% of the variance in life satisfaction and 39.2% in quality of life, demonstrating considerable explanatory power. These findings not only enrich the theoretical integration of socioemotional selectivity theory with institutional care models but also provide empirical foundations for enhancing care quality and implementing targeted psychological support services in nursing homes. The results illuminate practical pathways for alleviating loneliness and improving subjective well-being among vulnerable older adults in institutional settings, emphasizing the pivotal role of high-quality care as a psychological protective factor. This study systematically examined the complex interrelationships between loneliness, life satisfaction, quality of life, and quality of care among elderly residents in Chinese nursing homes. Through addressing four core research questions—the prevalence of loneliness and life satisfaction among nursing home elderly, the impact of loneliness on life satisfaction, the mediating role of quality of life, and the moderating effect of quality of care—this

investigation revealed the intricate psychosocial dynamics within institutional care environments.

5.2.2 Key Findings Interpretation

This investigation yielded nuanced insights into the psychosocial dynamics affecting elderly nursing home residents in China. The relationship between loneliness and life satisfaction emerged as robust and multifaceted, with regression analyses revealing that loneliness significantly diminishes life satisfaction ($\beta = -0.285$, $p < .001$) after controlling for sociodemographic factors. The effect persisted across gender, age cohorts, and institutional settings, indicating a fundamental psychological mechanism rather than a context-dependent phenomenon. This association aligns with socioemotional selectivity theory, suggesting that perceptions of social disconnection are particularly detrimental in late life when emotionally meaningful relationships become increasingly central to subjective well-being. The magnitude of this relationship (explaining approximately 31.2% of the variance) underscores loneliness as a critical determinant of life satisfaction in institutional care environments, where traditional social support structures are often disrupted.

The mediational pathway through quality of life provided crucial theoretical advancement, demonstrating that loneliness operates substantially by undermining multidimensional well-being. The significant indirect effect ($\beta = -0.181$, 95% CI [-0.239, -0.128]) explained 38.9% of the total effect, revealing that loneliness diminishes life

satisfaction largely by eroding physical comfort, psychological autonomy, and social engagement—core components of quality of life. This finding extends previous research by elucidating the mechanism through which social isolation translates into reduced subjective well-being, suggesting that interventions targeting specific quality of life domains might mitigate loneliness's adverse consequences.

Perhaps most consequential for care practice, the moderated mediation model revealed that quality of care significantly buffers against the detrimental effects of loneliness. The significant moderation across all pathways (direct effect moderation: $\beta = 0.143$, $p < .01$; a-path moderation: $\beta = 0.126$, $p < .01$; b-path moderation: $\beta = 0.109$, $p < .05$) provides compelling evidence that high-quality care environments can attenuate the negative psychological cascade initiated by loneliness. The conditional indirect effects demonstrated substantially stronger negative impacts at lower care quality levels ($\beta = -0.235$) compared to higher quality contexts ($\beta = -0.128$), establishing care quality as a protective factor against social isolation's psychological consequences. This finding transcends previous correlational studies by identifying an institutional mechanism capable of moderating the loneliness-satisfaction relationship.

The pronounced differences between residents receiving psychological counseling and those without constituted another significant finding. Counseling recipients demonstrated markedly lower loneliness ($d = 0.71$), higher life satisfaction ($d = 0.90$), and better quality of life ($d = 0.67$)—effect sizes indicating substantial practical significance. Interestingly, these residents also reported higher perceived care quality ($d = 0.71$),

suggesting a potential reciprocal relationship wherein psychological interventions may enhance overall institutional experiences. These differences remained robust in multivariate analyses controlling for socioeconomic status and health indicators, highlighting counseling's potential as a targeted intervention for vulnerable residents. Together, these findings provide empirical validation for an integrated care model that combines environmental quality enhancements with psychological support services, offering actionable insights for addressing the profound challenge of loneliness in institutional elderly care settings.

5.3 Theoretical Contributions

This study provides substantial empirical support for the biopsychosocial model in understanding elderly well-being within institutional care settings, advancing theoretical discourse through rigorous validation and extension. The findings confirm the model's central tenet that biological, psychological, and social factors interact dynamically to shape health outcomes, as evidenced by the significant interrelationships between loneliness, quality of life, and life satisfaction among nursing home residents. By demonstrating that quality of care moderates these relationships, this research extends the biopsychosocial framework beyond its traditional individual-centered conceptualization to encompass institutional environments as critical determinants of psychosocial outcomes. The significant mediation pathway through quality of life ($\beta = -0.181$, 95% CI [-0.239, -0.128]) validates the model's emphasis on multidimensional well-being, revealing how psychological states (loneliness) cascade through multiple domains to influence overall life

evaluation, rather than operating through isolated mechanisms. This offers a more sophisticated understanding of psychopathological progression in institutional settings than previously articulated in gerontological literature. Moreover, the study refines the biopsychosocial model by demonstrating its differential applicability across care quality contexts, suggesting that environmental factors do not merely add to biopsychosocial influences but fundamentally reshape their interrelationships. The finding that high-quality care attenuates the negative impact of loneliness on life satisfaction reveals a context-dependent nature of biopsychosocial processes previously underemphasized in theoretical formulations. Furthermore, this research provides novel insights into the operationalization of the biopsychosocial model in cross-cultural contexts, offering one of the first comprehensive validations in Chinese institutional care settings where cultural factors uniquely shape the experience of aging. These findings collectively advance theoretical understanding by positioning institutional quality as a systemic moderator within the biopsychosocial framework, shifting focus from isolated interventions toward integrated approaches that address multiple determinants simultaneously, thereby establishing a more ecologically valid theoretical foundation for future gerontological research and practice.

This research offers significant contributions to Maslow's Hierarchy of Needs theory by empirically validating its applicability in elderly institutional care contexts while concurrently expanding its theoretical boundaries. The demonstrated relationship between loneliness and life satisfaction ($\beta = -0.285, p < .001$) substantiates Maslow's proposition

that unmet belongingness needs fundamentally undermine self-actualization and overall well-being, providing robust evidence of the theory's hierarchical structure within geriatric populations. The findings extend beyond simple validation, however, by revealing the nuanced mechanisms through which needs deficits cascade through multiple psychological domains. The significant mediation by quality of life (accounting for 38.9% of the total effect) elucidates how belongingness deficiencies permeate through physiological, safety, and esteem dimensions, demonstrating the interconnectedness of hierarchical levels rather than strict linear progression as traditionally conceptualized. Moreover, this study advances theoretical discourse by identifying institutional care quality as a contextual moderator of need fulfillment pathways, a dimension largely unaddressed in Maslow's original framework. The significant moderation effects across all pathways ($\beta_s = 0.109-0.143$, $p < .05$) reveal how environmental systems can facilitate or impede hierarchical need satisfaction, suggesting that need fulfillment is not merely an individual psychological process but one embedded within institutional contexts. This insight substantially expands Maslow's theory by incorporating ecological factors as determinants of need satisfaction trajectories. Furthermore, the pronounced benefits observed among counseling recipients illuminate how targeted interventions addressing specific need deficiencies can catalyze improvements across multiple hierarchical levels simultaneously, challenging the strict bottom-up progression often attributed to Maslow's model. Collectively, these findings reconceptualize Maslow's theory within institutional eldercare settings as a dynamic, context-dependent system rather than a universal, linear hierarchy, thereby enhancing its

explanatory power in specialized care environments while maintaining its fundamental premise that higher-order satisfaction depends substantially on the fulfillment of foundational psychological needs.

This study advances scholarly discourse through several theoretical innovations that substantively enhance the understanding of elderly well-being in institutional contexts. The identification of quality of care as a significant moderator in the loneliness-life satisfaction relationship represents a novel empirical discovery, transcending previous unidimensional models by demonstrating how institutional factors systematically reshape psychosocial pathways. The significantly moderated mediation (index = 0.054, 95% CI [0.018, 0.096]) introduces a nuanced understanding of contextual contingencies in psychological processes, illuminating how environmental qualities fundamentally alter, rather than merely influence, the mechanisms through which loneliness affects subjective well-being. Methodologically, the study pioneers the integration of moderated mediation analysis within gerontological institutional research, offering a sophisticated analytical framework that captures complex variable interdependencies while controlling for potential confounders. This methodological advancement enables simultaneous examination of direct, indirect, and conditional processes, providing a more ecologically valid representation of psychological phenomena than previously employed approaches. Furthermore, the research refines conceptual frameworks by synthesizing previously disparate theoretical traditions—socioemotional selectivity theory, quality of care paradigms, and subjective well-being models—into a coherent explanatory system that

transcends disciplinary boundaries. The resulting integrated framework repositions institutional care from a peripheral consideration to a central determinant in elderly psychological health models, establishing a theoretical foundation that more accurately reflects the lived experiences of institutionalized elderly. These innovations collectively constitute a significant advancement in theoretical understanding, offering both conceptual clarity and methodological sophistication for future investigations into the complex dynamics of psychological well-being in late-life institutional contexts.

5.4 Practical significance

5.4.1 Nursing Home Management Implications

This study yields substantial practical implications for nursing home administration, offering evidence-based approaches to enhance resident well-being. The findings establish loneliness as a modifiable determinant of life satisfaction, responsive to institutional interventions. The significant moderating effect of care quality ($\beta = 0.143$, $p < .01$) provides compelling evidence that strategic administrative policies can mitigate psychological distress. Nursing homes should implement comprehensive loneliness assessment protocols, incorporating validated instruments such as the UCLA Loneliness Scale into routine care evaluations to identify at-risk residents. The significant benefits observed among counseling recipients ($d = 0.67-0.90$) suggest that integrating psychological support services within standard care offerings represents a high-yield intervention. Administrators should prioritize developing structured activity programs targeting social connectivity, ensuring these interventions are personalized to

accommodate varying cognitive and physical capacities. The quality of life mediation findings indicate that multidimensional interventions addressing autonomy, environmental comfort, and social engagement will yield greater benefits than narrowly focused programs. To enhance care quality, facilities should implement comprehensive staff training in person-centered approaches, emphasizing relational aspects of care beyond technical competence. Performance evaluation systems should incorporate metrics assessing resident-staff rapport and psychosocial support quality. Furthermore, architectural and environmental modifications promoting spontaneous social interaction, such as strategically designed communal spaces, can systematically reduce social isolation. These evidence-based strategies collectively constitute a comprehensive approach to enhancing resident well-being through administrative practices targeting the interrelated dimensions of loneliness, care quality, and life satisfaction.

5.4.2 Counseling Service Optimization

This research provides compelling evidence for optimizing psychological counseling services in nursing homes, with significant implications for clinical practice. The substantial differences between counseling recipients and non-recipients across all psychological outcomes (effect sizes $d = 0.67-0.90$) underscore the need for tailored interventions addressing heterogeneous needs among elderly residents. Counseling programs should implement comprehensive psychological assessment protocols that differentiate between social, emotional, and existential dimensions of loneliness, enabling therapists to develop personalized intervention strategies aligned with specific deficit

patterns. The significant interaction between counseling services and quality of care suggests that integrating psychological support with daily care routines may synergistically enhance outcomes. Facilities should explore innovative service delivery models, including group-based reminiscence therapy to address shared generational experiences, technology-facilitated family connection sessions to maintain social bonds, and meaning-centered interventions targeting existential concerns prevalent in institutional settings. To overcome accessibility barriers, particularly salient among less-educated residents who demonstrated lower counseling utilization despite comparable needs, institutions should implement tiered service models combining formal psychotherapy with peer support programs and staff-facilitated emotional wellness activities. Brief psychological screening during routine care interactions can enhance the identification of at-risk residents, while training nursing staff in basic supportive communication techniques may extend therapeutic presence beyond formal counseling sessions. These evidence-based refinements to counseling services represent critical advancements in addressing the complex psychosocial needs of institutionalized elderly, potentially transforming nursing homes from primarily custodial environments to therapeutic communities that actively promote psychological flourishing.

5.4.3 Social Policy Recommendations

This research offers substantial evidence for policy development addressing psychosocial well-being in institutional eldercare contexts. The identified moderating effect of care quality on loneliness outcomes (index = 0.054, 95% CI [0.018, 0.096])

provides empirical justification for regulatory frameworks that transcend physical safety standards to encompass psychosocial care dimensions. Policymakers should establish mandatory psychological screening protocols in nursing homes, with standardized assessments of loneliness, depression, and life satisfaction integrated into accreditation requirements. The substantial benefits observed among counseling recipients ($d = 0.67-0.90$) warrant policy initiatives ensuring universal access to psychological services, potentially through Medicare/Medicaid reimbursement expansion for geriatric mental health interventions within institutional settings. Furthermore, national quality indicators should incorporate metrics assessing social integration and psychological well-being alongside traditional medical outcomes. The significant city-specific variations in care quality suggest the need for regionally calibrated policy approaches that address geographical disparities while maintaining national standards. Social support enhancement requires policy-driven integration between institutional care and community resources, potentially through tax incentives for intergenerational programming and family involvement. The comprehensive optimization of eldercare systems necessitates regulatory frameworks promoting staff training in psychosocial care competencies, with certification requirements addressing psychological dimensions of aging. Additionally, facility design guidelines should mandate architectural elements that facilitate social interaction and psychological comfort. These evidence-based policy recommendations collectively establish a comprehensive framework for addressing the complex interplay between

institutional quality, social connectedness, and psychological well-being among vulnerable elderly populations.

5.5 Limitations of the Study

The main limitation concerns participant selection methodology. The non-probabilistic sampling approach employed within facilities introduced potential selection biases, as institutional administrators may have inadvertently directed researchers toward higher-functioning residents or those reporting more positive experiences. This sampling approach, while pragmatic, potentially skews results toward more favorable psychosocial outcomes. Furthermore, the necessary exclusion of severely cognitively impaired residents (n=18) systematically omits a vulnerable subpopulation with potentially distinct psychosocial needs and experiences. This exclusion, while methodologically justified, limits a comprehensive understanding of institutional care dynamics across the full spectrum of cognitive functionality.

Additionally, the established moderated mediation model requires refinement through the incorporation of additional theoretical constructs, including perceived filial obligation, institutional trust, and anticipated future support—variables potentially critical in contexts where traditional values intersect with modernizing care systems. These theoretical limitations constrain the explanatory power of the current model, particularly in capturing the complex cultural nuances that shape eldercare experiences in contemporary Chinese nursing homes. Future research should address these conceptual gaps by

integrating culturally-relevant variables that reflect the unique intersection of traditional filial values with emerging institutional care paradigms, thereby enhancing model validity within China's rapidly evolving eldercare landscape.

5.6 Recommendations and Future Directions

Based on the identified limitations, several recommendations emerge for advancing research on institutionalized elderly populations in China. Future studies should implement probability-based sampling techniques to reduce selection biases, potentially employing stratified random sampling across cognitive functionality levels within institutions. Methodological innovations facilitating ethical inclusion of cognitively impaired residents—such as simplified assessment protocols, observational measures, and proxy reporting triangulation—would enhance the representation of this vulnerable subpopulation and provide a more comprehensive understanding of institutional care dynamics.

Theoretically, research trajectories should prioritize model refinement incorporating culturally-relevant constructs. The integration of perceived filial obligation metrics would illuminate how traditional values moderate institutional adaptation processes. Incorporating institutional trust measures could elucidate how facility-resident relationships influence psychosocial outcomes within collectivist eldercare frameworks. Additionally, anticipated future support assessment would capture temporal dimensions of psychological security within institutional settings where family involvement remains culturally significant.

Cross-cultural comparative investigations examining how loneliness-satisfaction relationships manifest across diverse sociocultural settings could identify universal mechanisms while highlighting culturally-contingent pathways. Such investigations would benefit from mixed-methods approaches incorporating qualitative components to capture nuanced cultural meanings attached to institutional care experiences. Longitudinal designs tracking psychosocial adaptation trajectories from pre-admission through extended residency would enable a more sophisticated understanding of temporal dynamics, particularly identifying critical intervention windows where quality of care most significantly impacts psychological outcomes.

Implementation science approaches could translate current findings into practical interventions, developing targeted programs enhancing staff-resident relationships—identified as critical mediators between institutional quality and resident satisfaction. Such interventions should be culturally calibrated, acknowledging the unique intersection of traditional filial values with emerging institutional care paradigms. Inter-disciplinary collaboration integrating gerontological, psychological, and cultural anthropology perspectives would facilitate the development of comprehensive assessment protocols capturing the multidimensional nature of eldercare experiences within China's rapidly evolving institutional landscape.

Future research should prioritize translational investigations that transform conceptual insights into empirically validated interventions addressing loneliness in institutional settings. Rigorous evaluation of multicomponent intervention

programs—integrating staff training, environmental modifications, and psychological support services—through randomized controlled trials would establish evidence-based protocols for enhancing quality of life and life satisfaction among nursing home residents. These intervention studies should employ active control conditions and intention-to-treat analyses to determine specific therapeutic mechanisms while accounting for contextual moderators of treatment efficacy. Innovative service delivery models warrant systematic investigation, particularly technology-facilitated social connection platforms adapted for elderly users with varying cognitive capacities, intergenerational programming integrating community resources, and peer-support initiatives leveraging residents' experiential knowledge. Such innovations require implementation science frameworks examining contextual barriers to adoption across diverse institutional settings with varying resource constraints. Longitudinal effectiveness studies tracking intervention outcomes beyond immediate post-treatment periods would illuminate maintenance patterns and delayed emergence effects often overlooked in short-term evaluations. These extended time horizons should incorporate cost-effectiveness analyses calculating quality-adjusted life year improvements relative to implementation expenses, providing administrators and policymakers with economic justification for psychosocial programming alongside demonstrated clinical benefits. This pragmatic research agenda would systematically bridge the persistent gap between theoretical understanding and practical application, ultimately enhancing the lived experience of vulnerable elderly in institutional care environments.

5.7 Summary

This investigation establishes the complex interrelationships between loneliness, quality of care, quality of life, and life satisfaction among elderly residents in Chinese nursing homes.

These findings substantively advance theoretical integration of the biopsychosocial model and Maslow's hierarchy within institutional eldercare contexts, establishing care quality as a systemic protective factor rather than merely an additive influence. The substantial differences observed between counseling recipients and non-recipients (Cohen's $d = 0.67-0.90$) highlight the transformative potential of psychological interventions in enhancing resident well-being. The practical implications extend across multiple domains: nursing home administration should implement comprehensive loneliness assessment protocols and person-centered care training; clinical practice should develop tailored counseling approaches addressing differentiated loneliness dimensions; and policymakers should establish regulatory frameworks encompassing psychosocial care quality metrics alongside traditional physical safety standards. Despite methodological limitations including cross-sectional design constraints and potential selection biases, this research provides robust empirical foundations for reconceptualizing institutional eldercare as therapeutic environments rather than merely custodial facilities. Future longitudinal investigations employing mixed-methods approaches across diverse sociocultural contexts will further illuminate the dynamic interplay between institutional environments and elderly psychological well-being. Ultimately, this research underscores our scientific

responsibility to develop evidence-based approaches that preserve dignity and enhance quality of life among vulnerable institutionalized elderly populations.

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APPENDIX

Appendix A: Questionnaire (English)

Dear Uncle/Aunt,

Hello! I am Yin Zhiyou, a Master of Counseling (Research) student at the University of Sarawak (UNIVERSITI MALAYSIA SARAWAK), Malaysia, and am currently conducting a research on “Unveiling the Dynamic of Elderly Life in Nursing Homes in China: A Study on Quality of Life, Life Satisfaction, Loneliness and Quality of Care” in order to gain an in-depth understanding of the current situation of the elderly in China's elderly care service centers, and to reflect relevant issues and make suggestions to relevant departments. Please answer according to the question, combined with your own actual situation, I will keep your information strictly confidential. Thank you for your support and assistance! I wish you good health, peace and happiness!

Part A: Personal Information

No.	Question	Response Options
1	Gender	☐ Female ☐ Male
2	Age	☐ 60-64 years ☐ 65-69 years ☐ 70-74 years ☐ 75-79 years ☐ 80-84 years ☐ 85-89 years ☐ 90 years or above
3	Education Level	☐ No formal education ☐ Primary school ☐ Middle school ☐ High school ☐ College ☐ Postgraduate
4	Marital Status	☐ Married ☐ Widowed ☐ Divorced/Separated ☐ Never married

5	Previous Occupation	☐ Government employee ☐ Factory worker ☐ Service industry ☐ Professional (e.g., teacher, doctor, lawyer) ☐ Agricultural worker
6	Monthly Income (Yuan)	☐ Less than 2,000 ☐ 2,000-3,000 ☐ 3,001-4,000 ☐ More than 4,000 ☐ Prefer not to say
7	Current City of Residence	☐ Xi'an ☐ Urumqi ☐ Jinan ☐ Zibo
8	Duration of Residency in Current Nursing Home	☐ Less than 12 months ☐ 12-36 months ☐ 37-60 months ☐ More than 60 months
9	Frequency of Family Visits	☐ Weekly or more ☐ Monthly ☐ Less than monthly ☐ Never
10	Have you received counseling services during your stay?	☐ Yes ☐ No

Part B: UCLA Loneliness Scale (ULS-8) (Russell et al., 1980)

Instructions: The following statements describe how people sometimes feel. For each statement, please indicate how often you feel the way described by selecting the appropriate response. There are no right or wrong answers.

Response Options: 1 = NEVER | 2 = RARELY | 3 = SOMETIMES | 4 = OFTEN

No.	Statement	1	2	3	4
1	I lack companionship	☐	☐	☐	☐
2	There is no one I can turn to	☐	☐	☐	☐
3	I am an outgoing person*	☐	☐	☐	☐
4	I feel left out	☐	☐	☐	☐
5	I feel isolated from others	☐	☐	☐	☐
6	I can find companionship when I want it*	☐	☐	☐	☐
7	I am unhappy being so withdrawn	☐	☐	☐	☐
8	People are around me but not with me	☐	☐	☐	☐
9	I feel lonely	☐	☐	☐	☐

Note: Items marked with an asterisk () are reverse-scored.*

Scoring: Items that are asterisked should be reversed (1=4, 2=3, 3=2, 4=1), and the scores for all 9 items should be summed. Higher scores indicate greater degrees of loneliness. Possible range of scores is 9-36.

Sours: RUSSELL D, PEPLAU L A, CUTRONA C E. The revised UCLA Loneliness Scale: concurrent and discriminant validity evidence [J]. J Pers Soc Psychol, 1980, 39(3): 472-80.

Part C: Satisfaction with Life Scale (SWLS)(Diener et al., 1985)

Instructions: Below are five statements that you may agree or disagree with. Using the 1-7 scale below, indicate your agreement with each item by marking the appropriate box. Please be open and honest in your responding.

Response Scale: 7 = Strongly agree | 6 = Agree | 5 = Slightly agree | 4 = Neither agree nor disagree | 3 = Slightly disagree | 2 = Disagree | 1 = Strongly disagree

No.	Statement	1	2	3	4	5	6	7
1	In most ways my life is close to my ideal.	☐	☐	☐	☐	☐	☐	☐
2	The conditions of my life are excellent.	☐	☐	☐	☐	☐	☐	☐
3	I am satisfied with my life.	☐	☐	☐	☐	☐	☐	☐
4	So far I have gotten the important things I want in life.	☐	☐	☐	☐	☐	☐	☐
5	If I could live my life over, I would change almost nothing.	☐	☐	☐	☐	☐	☐	☐

Scoring: 31 - 35: Extremely satisfied, 26 - 30: Satisfied, 21 - 25: Slightly satisfied, 20: Neutral, 15 - 19: Slightly dissatisfied, 10 - 14: Dissatisfied, 5 - 9: Extremely dissatisfied.

Sours: DIENER E, EMMONS R A, LARSEN R J, et al. The Satisfaction With Life Scale [J]. J Pers Assess, 1985, 49(1): 71-5.

Part D: WHOQOL-BREF Questionnaire (WHOQOL-BREF) ("Development of the World Health Organization WHOQOL-BREF quality of life assessment. The WHOQOL Group," 1998)

Instructions: The following questions pertain to your perspectives on quality of life, health, or other aspects of living. As I read each question, please make a selection. Choose the most appropriate answer. If you are temporarily uncertain, often your first instinct is the most accurate. Please answer all questions according to your own standards, desires, or personal feelings. Note that all questions refer to your situation within the past 4 weeks.

No.	Question	1	2	3	4	5
1	How would you rate your quality of life?	Very poor	Poor	Neither poor nor good	Good	Very good
2	How satisfied are you with your health?	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied

The following questions ask about how much you have experienced certain things in the last 4 weeks.

1 = Not at all | 2 = A little | 3 = A moderate amount | 4 = Very much | 5 = An extreme amount

No.	Question	1	2	3	4	5
3	To what extent do you feel that (physical) pain prevents you from doing what you need to do?	☐	☐	☐	☐	☐
4	How much do you need any medical treatment to function in your daily life?	☐	☐	☐	☐	☐
5	How much do you enjoy life?	☐	☐	☐	☐	☐
6	To what extent do you feel your life to be meaningful?	☐	☐	☐	☐	☐

1 = Not at all | 2 = A little | 3 = A moderate amount | 4 = Very much | 5 = Extremely

No.	Question	1	2	3	4	5
7	How well are you able to concentrate?	☐	☐	☐	☐	☐
8	How safe do you feel in your daily life?	☐	☐	☐	☐	☐
9	How healthy is your physical environment?	☐	☐	☐	☐	☐

1 = Not at all | 2 = A little | 3 = Moderately | 4 = Mostly | 5 = Completely

No.	Question	1	2	3	4	5
10	Do you have enough energy for everyday life?	☐	☐	☐	☐	☐
11	Are you able to accept your bodily appearance?	☐	☐	☐	☐	☐
12	Have you enough money to meet your needs?	☐	☐	☐	☐	☐
13	How available to you is the information that you need in your day-to-day life?	☐	☐	☐	☐	☐
14	To what extent do you have the opportunity for leisure activities?	☐	☐	☐	☐	☐

No.	Question	1	2	3	4	5
15	How well are you able to get around?	Very poor	Poor	Neither poor nor good	Good	Very good

The following questions ask you to say how good or satisfied you have felt about various aspects of your life over the last 4 weeks.

1 = Very dissatisfied | 2 = Dissatisfied | 3 = Neither satisfied nor dissatisfied | 4 = Satisfied

| 5 = Very satisfied

No.	Question	1	2	3	4	5
16	How satisfied are you with your sleep?	☐	☐	☐	☐	☐
17	How satisfied are you with your ability to perform your daily living activities?	☐	☐	☐	☐	☐
18	How satisfied are you with your capacity for work?	☐	☐	☐	☐	☐
19	How satisfied are you with yourself?	☐	☐	☐	☐	☐
20	How satisfied are you with your personal relationships?	☐	☐	☐	☐	☐
21	How satisfied are you with your sex life?	☐	☐	☐	☐	☐

22	How satisfied are you with the support you get from your friends?	☐	☐	☐	☐	☐
23	How satisfied are you with the conditions of your living place?	☐	☐	☐	☐	☐
24	How satisfied are you with your access to health services?	☐	☐	☐	☐	☐
25	How satisfied are you with your transport?	☐	☐	☐	☐	☐

The following question refers to how often you have felt or experienced certain things in the last 2 weeks.

No.	Question	1	2	3	4	5
26	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	Never	Seldom	Quite often	Very often	Always

Source: The WHOQOL Group [J]. Psychol Med, 1998, 28(3): 551-8.

Part E: Person-Centered Care Assessment Tool - Chinese Version

(P-CAT-C)(Edvardsson et al., 2010)

Introduction: Please rate your level of agreement with each statement:

(1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree,

5 = Strongly agree)

No.	Item	1	2	3	4	5
1	We often discuss how to give person-centered care	☐	☐	☐	☐	☐
2	We have formal team meetings to discuss residents' care	☐	☐	☐	☐	☐
3	The life history of the residents is formally used in the care plans we use	☐	☐	☐	☐	☐
4	The quality of the interactions between staff and residents is more important than getting the tasks done	☐	☐	☐	☐	☐
5	We are free to alter work routines based on residents' preferences	☐	☐	☐	☐	☐
6	Residents are offered the opportunities to be involved in individualized everyday activities	☐	☐	☐	☐	☐
7	The environment feels chaotic*	☐	☐	☐	☐	☐
8	This organization prevents me from providing person-centered care*	☐	☐	☐	☐	☐

9	We are busy to finish the work tasks and follow the rules, and cannot provide any personal service*	☐	☐	☐	☐	☐
10	I simply do not have time to provide person-centered care*	☐	☐	☐	☐	☐
11	We have to get the work done before we can worry about a homelike environment*	☐	☐	☐	☐	☐
12	There is no regular response system toward residents' and their family members' complaint*	☐	☐	☐	☐	☐
13	There are enough barrier-free facilities which enable residents move around freely*	☐	☐	☐	☐	☐
14	Residents are able to access outside space as they wish	☐	☐	☐	☐	☐
15	The environment and facilities are safe for the residents	☐	☐	☐	☐	☐

Note: Items marked with an asterisk () are reverse-scored.*

Source: EDVARDSSON D, FETHERSTONHAUGH D, NAY R, et al. Development and initial testing of the Person-centered Care Assessment Tool (P-CAT) [J]. International Psychogeriatrics, 2010, 22(1): 101-8.

Appendix B: Questionnaire (Chinese)

亲爱的叔叔/阿姨： 您好！我是殷志友，马来西亚砂拉越大学（UNIVERSITI MALAYSIA SARAWAK）心理咨询专业的硕士研究生，目前正在进行"揭示中国养老院老年人生活动态：生活质量、生活满意度、孤独感和护理质量研究"的研究，旨在深入了解中国养老服务中心老年人的现状，反映相关问题并向相关部门提出建议。请根据问题结合您自身的实际情况作答，我将严格保密您的信息。感谢您的支持与协助！

祝您身体健康、平安幸福！

第一部分：个人信息

题号	问题	选项
1	性别	☐ 女 ☐ 男
2	年龄	☐ 60-64 岁 ☐ 65-69 岁 ☐ 70-74 岁 ☐ 75-79 岁 ☐ 80-84 岁 ☐ 85-89 岁 ☐ 90 岁或以上
3	教育水平	☐ 无正规教育 ☐ 小学 ☐ 初中 ☐ 高中 ☐ 大学 ☐ 研究生
4	婚姻状况	☐ 已婚 ☐ 丧偶 ☐ 离婚/分居 ☐ 从未结婚
5	以前的职业	☐ 政府雇员 ☐ 专业人士（如教师、医生、律师） ☐ 工厂工人 ☐ 农业工人 ☐ 服务行业
6	月收入（元）	☐ 少于 2,000 ☐ 2,000-3,000 ☐ 3,001-4,000 ☐ 多于 4,000 ☐ 不愿回答
7	当前居住城市	☐ 西安 ☐ 乌鲁木齐 ☐ 济南 ☐ 淄博
8	在当前养老院居住时间	☐ 少于 12 个月 ☐ 12-36 个月 ☐ 37-60 个月 ☐ 超过 60 个月
9	家人探访频率	☐ 每周或更频繁 ☐ 每月 ☐ 少于每月 ☐ 从不
10	您在居住期间是否接受过咨询服务？	☐ 是 ☐ 否

第二部分：孤独感量表（ULS-8）（Li, 2012）.

说明：以下陈述描述了人们有时的感受。对于每一条陈述，请通过选择适当的答案来表明您有多少时候感受到所描述的方式。没有正确或错误的答案。

选项说明： 1 = 从不 | 2 = 很少 | 3 = 有时 | 4 = 经常

题号	问题	1	2	3	4
1	缺少别人的陪伴	☐	☐	☐	☐
2	没有人可以寻求帮助	☐	☐	☐	☐
3	我是一个愿意交朋友的人	☐	☐	☐	☐
4	我感到被冷落	☐	☐	☐	☐
5	我感到和其他人疏远了	☐	☐	☐	☐
6	当我想要的时候，我能找到人陪我	☐	☐	☐	☐
7	我因为很少与别人来往而感到伤心	☐	☐	☐	☐
8	虽然身边有人陪，但没人关心我	☐	☐	☐	☐
9	我感到孤独	☐	☐	☐	☐

注：标有星号(*)的项目需要反向计分。

计分方法：带星号的项目应该反向计分（1=4，2=3，3=2，4=1），所有 9 个项目的分数应该相加。分数越高表示孤独感越强。可能的分数范围是 9-36 分。

来源：Li, Z. (2012). Evaluation and application of the simplified Chinese version of the UCLA Loneliness Scale (ULS-8)..

第三部分：生活满意度量表(Ji, 2020)

说明：以下是五个您可能同意或不同意的陈述。使用下面的 1-7 分量表，通过标记适当的方框来表明您对每个项目的同意程度。请在回答时保持开放和诚实。

选项说明：7 = 强烈同意 | 6 = 同意 | 5 = 略微同意 | 4 = 既不同意也不反对 | 3 = 略微不同意 | 2 = 不同意 | 1 = 强烈不同意

题号	问题	1	2	3	4	5	6	7
1	我的生活大致符合我的理想	☐	☐	☐	☐	☐	☐	☐
2	我的生活状况非常圆满	☐	☐	☐	☐	☐	☐	☐
3	我满意自己的生活	☐	☐	☐	☐	☐	☐	☐
4	直到现在为止，我都能得到我在生活上希望拥有的重要东西	☐	☐	☐	☐	☐	☐	☐
5	如果我能重新活过，差不多没有东西我想改变	☐	☐	☐	☐	☐	☐	☐

计分方式：31-35 分：极度满意，26-30 分：满意，21-25 分：略微满意，20 分：中立，15-19 分：略微不满意，10-14 分：不满意，5-9 分：极度不满意。

来源： Ji, X.M. (2020). A study on social trust and life satisfaction among urban elderly people. South-Central Minzu University.

第四部分：WHO 生活生活质量量表 (WHOQOL-BREF) (Luo et al., 2021)

说明：以下问题涉及您对生活质量、健康、或生活其他方面的看法。在我读出每一个问题的同时，请您做出选择。请选择最适当的答案。如果您暂时不能确定，则头脑中的第一反应往往是最正确的。所有问题都请您按照自己的标准、愿望或自己的感觉来回答。注意所有问题都是您最近 4 周内的情况。

题号	问题	1	2	3	4	5
1	您如何评价您的生活质量？	非常差	差	一般	好	非常好
2	您对自己的健康状况满意吗？	非常不满意	不 满 意	一般	满意	很满意

下列问题是有您在过去 4 周中经历某些事情的感觉

1=完全没有 | 2=有点 | 3=中等 | 4=很大 | 5=及其

题号	问题	1	2	3	4	5
3	您因躯体疼痛而妨碍您去做需要做的事感到有多烦恼？	☐	☐	☐	☐	☐
4	您对保持日常生活的医学治疗的需求程度有多大？	☐	☐	☐	☐	☐
5	您觉得生活有乐趣吗？	☐	☐	☐	☐	☐
6	您觉得自己的生活有意义吗？	☐	☐	☐	☐	☐

1=根本不 | 2=有点 | 3=中等 | 4=很大 | 5=及其

题号	问题	1	2	3	4	5
7	您能集中注意力吗？	☐	☐	☐	☐	☐
8	日常生活中您感觉安全吗？	☐	☐	☐	☐	☐
9	您的生活环境对健康好吗？	☐	☐	☐	☐	☐

下列问题有关您在过去 4 周中做某些事情的能力。

1=根本没有 | 2=有点 | 3=中等 | 4=多数有(能) | 5=完全有(能)

题号	问题	1	2	3	4	5
10	您有充沛的精力去应付日常生活吗？	☐	☐	☐	☐	☐

11	您认为自己的外形过得去吗？	☐	☐	☐	☐	☐
12	您有足够的钱来满足您的需要吗？	☐	☐	☐	☐	☐
13	在日常生活中，您需要的信息都能得到吗？	☐	☐	☐	☐	☐
14	您有机会进行休闲活动吗？	☐	☐	☐	☐	☐

题号	问题	1	2	3	4	5
15	您四处行动的能力如何？	很差	差	一般	好	很好

1=非常不满意 | 2=不满意 | 3=一般 | 4=满意 | 5=很满意

题号	问题	1	2	3	4	5
16	您对自己的睡眠满意吗？	☐	☐	☐	☐	☐
17	您对执行日常生活活动的的能力满意吗？	☐	☐	☐	☐	☐
18	您对自己的工作能力满意吗？	☐	☐	☐	☐	☐
19	您对自己满意吗？	☐	☐	☐	☐	☐
20	您对自己的人际关系满意吗？	☐	☐	☐	☐	☐
21	您对自己的性生活满意吗？	☐	☐	☐	☐	☐
22	您对从朋友那里得到的支持满意吗？	☐	☐	☐	☐	☐
23	您对自己居住地的条件满意吗？	☐	☐	☐	☐	☐
24	您对自己获取医疗服务的机会满意吗？	☐	☐	☐	☐	☐
25	您对自己的交通条件满意吗？	☐	☐	☐	☐	☐

下列问题是关于您在过去 4 周中经历某些事情的频繁程度。

题号	问题	1	2	3	4	5
26	您多久有一次消极情绪，如忧郁、绝望、焦虑、抑郁？	从不	很少	有时	经常	总是

来源：Luo, Q., Yang, H. X., Cheng, J. X., Yang, H. B., & Wei, H. C. (2021). Application of WHOQOL-BREF to assess the quality of life of rural residents in arid areas. *Journal of Environmental Health*, 11(02), 188-193.

第五部分：以人为中心的护理评估量表-中文版 (P-CAT-C)(X. B. Zhong & V. W. Lou, 2013)

说明： 请对每项陈述表明您的同意程度：

1 = 非常不同意，2 = 不同意，3 = 既不同意也不反对，4 = 同意，5 = 非常同意

题号	问题	1	2	3	4	5
1	我们经常讨论如何提供以人为中心的护理	☐	☐	☐	☐	☐
2	我们会开展正式的集体会议来讨论老人的护理方式	☐	☐	☐	☐	☐
3	我们的护理规划会参考老人的生活史	☐	☐	☐	☐	☐
4	工作人员与老人之间互动的质量比完成任务更重要	☐	☐	☐	☐	☐
5	我们可以根据老人的喜好自由调整工作程序	☐	☐	☐	☐	☐
6	老人有机会参与个性化的日常活动	☐	☐	☐	☐	☐
7	环境感觉混乱*	☐	☐	☐	☐	☐
8	这个机构阻碍我提供以人为中心的照护*	☐	☐	☐	☐	☐
9	我们忙于完成工作任务和遵守规则，无法提供任何个人服务*	☐	☐	☐	☐	☐
10	我根本没有时间提供以人为中心的护理*	☐	☐	☐	☐	☐
11	我们必须先完成工作，然后才能考虑营造家庭般的环境*	☐	☐	☐	☐	☐
12	没有针对老人及其家庭成员投诉的常规响应系统*	☐	☐	☐	☐	☐
13	有足够的无障碍设施，确保老人能够自由移动*	☐	☐	☐	☐	☐
14	老人能够按照自己的意愿进入户外空间	☐	☐	☐	☐	☐
15	环境和设施对老人来说是安全的	☐	☐	☐	☐	☐

注：标有星号(*)的项目需要反向计分。

来源：Zhong, X. B., & Lou, V. W. (2013). Person-centered care in Chinese residential care facilities: a preliminary measure. *Aging Ment Health*, 17(8), 952-958.