

Review Article

Resilience in Solitude: A Review of Loneliness and Its Impact on Nurses' Wellbeing

Abdulqadir J. Nashwan ¹, **Yasir S. Alsalamah**,^{2,3} **Mohammad S. Abu-Mahfouz**,⁴
Prakash Palanivelu ⁵, **Ahmed Masoud**,⁶ **Rasha Abu Baker**,⁷ and **Evangelos C. Fradelos** ⁸

¹*Nursing Department, Hamad Medical Corporation, Doha, Qatar*

²*Department of Nursing, Mental Health Hospital, Qassim Health Cluster, Qassim, Buraydah, Saudi Arabia*

³*Faculty of Health Science, Department of Nursing, University of Pretoria, Pretoria, South Africa*

⁴*Department of Nursing, Almoosa College of Health Sciences, Al Hofuf, Saudi Arabia*

⁵*College of Nursing, Prince Sattam bin Abdulaziz University, Al-Kharj, Saudi Arabia*

⁶*Faculty of Nursing, Mansoura University, Mansoura, Egypt*

⁷*Community & Mental Health Department, College of Nursing, Sultan Qaboos University, Muscat, Oman*

⁸*Department of Nursing, University of Thessaly, Volos, Greece*

Correspondence should be addressed to Abdulqadir J. Nashwan; anashwan@hamad.qa

Received 13 April 2024; Accepted 16 December 2024

Academic Editor: Bao-Liang Zhong

Copyright © 2024 Abdulqadir J. Nashwan et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

The issue of loneliness among nurses is of considerable importance, with potential ramifications extending beyond the well-being of the individuals involved to the quality of patient care delivered. This review explores the topic in-depth, guided by the recognition that the considerable influence of loneliness on nurses' welfare warrants extensive examination and evaluation. The rationale for undertaking this review is to understand and communicate the wide-reaching implications of loneliness within the nursing profession. In this narrative review, we tried to elucidate the prevalence, causes, and impacts of loneliness among nurses globally. We explored various theoretical frameworks and empirical studies to illuminate the factors contributing to loneliness within this population and analyzed the prevalence rates with other professions. The review further discussed the consequences of loneliness on nurses' physical and mental health, job performance, and financial and systemic implications for healthcare institutions. It evaluates the role of the workplace environment. It explores various coping strategies and interventions to manage loneliness, including self-help techniques, formal support structures, workplace programs, and technology-based solutions. The review revealed that factors influencing loneliness include social, environmental, and cultural elements. Studies highlight that being widowed, divorced, older, male, or from an immigrant background, low physical activity, unemployment, low income, and poor-quality relationships are significant predictors of loneliness. Physical health issues like chronic illnesses and mental health conditions such as depression and anxiety also contribute to feelings of loneliness among nurses. We also forward recommendations for healthcare institutions, policy changes, and future research needs, ultimately underscoring the importance of addressing loneliness among nurses. The review concludes with a call to action for all stakeholders to prioritize the emotional well-being of nurses, fostering a healthcare environment that nurtures resilience and thereby enhances the quality of patient care.

Keywords: loneliness; mental health interventions; nurses; resilience; workplace wellbeing

1. Introduction

Loneliness is a personal and subjective experience marked by detachment and separation from other individuals [1]. This

phenomenon entails experiencing a state of emotional disengagement and an absence of significant interpersonal relationships. Individuals who encounter loneliness may perceive a considerable lack of support and comprehension from their

social networks, resulting in a profound sense of emptiness and yearning for companionship. Loneliness can be differentiated from physical solitude, as it pertains primarily to human interaction's emotional and psychological aspects.

The concept of loneliness highlights the significance of solid connections and social engagement in promoting the overall welfare of individuals. This statement underscores the importance of creating meaningful relationships that offer psychological assistance, understanding, and a feeling of inclusion [2]. The experience of loneliness can take shape across diverse domains, encompassing interpersonal connections, occupational milieus, and communal contexts. Loneliness is a common phenomenon in the healthcare industry, which can be attributed to the strenuous demands of the profession, extended working hours, and the emotional burden of providing care to patients [3].

Comprehending the precise meaning of loneliness is paramount in acknowledging its influence on individuals' psychological well-being and general standard of living. Thus, by recognizing and attending to this personal experience, healthcare providers and support networks can strive to establish atmospheres that cultivate social interaction, psychological assistance, and a feeling of inclusion, ultimately enhancing the welfare and contentment of individuals impacted by loneliness.

Loneliness within the healthcare industry, specifically among nursing professionals, is of utmost significance and necessitates meticulous consideration. Nurses, essential constituents of the healthcare system, shoulder the responsibility of delivering empathetic care to patients amidst demanding circumstances [4]. The ramifications of loneliness among nurses are essential, given its substantial impact on their overall health and professional efficacy.

The nursing profession is distinguished by rigorous work schedules and the necessity of being always accessible. Nursing professionals frequently engage in extended work hours, encompassing nocturnal and weekend rotations, which impede their personal lives and constrain prospects for extraneous social engagements [5, 6]. The lack of regularity in their schedules may hinder their capacity to establish and sustain significant relationships within and beyond the healthcare domain. Being isolated can heighten the sensation of loneliness experienced by nurses, as they may encounter difficulties forming profound social bonds that offer comfort and assistance.

Loneliness among nurses has significant and multifaceted implications, profoundly affecting their mental and physical health, job satisfaction, and patient care quality [7]. The demanding nature of nursing, characterized by irregular hours, emotional labor, and exposure to patient suffering, often hinders nurses' ability to cultivate meaningful social relationships, leading to feelings of isolation [8]. This sense of loneliness is exacerbated by the lack of adequate social support within the workplace, contributing to heightened stress, anxiety, and depression among nurses [9]. These mental health challenges, coupled with emotional exhaustion, can diminish job motivation, reduce empathy, and impair communication, ultimately compromising patient outcomes [10]. To address this issue, healthcare institutions must prioritize creating

supportive work environments that foster social connections, balance work-life demands, and provide mental health resources, ensuring nurses' well-being and delivering high-quality patient care [11, 12].

Recognizing the significance of mental health and well-being among nurses is crucial for their well-being and the quality of patient care. Nurses experiencing loneliness may become emotionally drained, detached, and less motivated, ultimately impacting their ability to provide optimal care to patients [13].

Loneliness among nurses can also contribute to higher rates of burnout and turnover [11]. When nurses feel isolated, they may become disengaged from their work, leading to decreased job satisfaction and an increased likelihood of leaving the profession. The turnover of experienced nurses affects the continuity of patient care and places additional burdens on the remaining staff, further perpetuating the cycle of loneliness and burnout.

As highlighted above, the topic of loneliness among nurses is a significant concern that necessitates thorough examination and evaluation. The rationale for undertaking this review is based on acknowledging the substantial influence that loneliness can exert on the welfare of nurses and the caliber of care provided to patients. This review aims to clearly outline the extent of the issue and identify efficacious evidence-based interventions and strategies by analyzing the frequency, etiology, and consequences of loneliness in nurses. This narrative review did not involve a systematic search. However, the research team conducted a literature search that included searching electronic databases such as PubMed and Google Scholar. Key terms used in the search included "loneliness," "theoretical framework," "nursing," "healthcare professionals," "workplace loneliness," "psychological wellbeing," and related phrases.

2. Theoretical Framework and Conceptualization of Loneliness

Loneliness is commonly defined as a personal experience of feeling socially isolated and lonely [14]. It is also described as a multifaceted and complex human psychological phenomenon [15] that affects health and quality of life [16]. Loneliness may be classified into five main types, each operationalized differently based on its cause. These include social and emotional loneliness [17], developmental, situational, and internal loneliness [14]. Social loneliness refers to the feeling of being excluded and abandoned from the community, and it is characterized by an absence of meaningful social relationships and a lack of a sense of belonging to the community [18]. Emotional loneliness is defined as an internal state of not having a close emotional attachment to an intimate person [19], and it is usually associated with negative feelings such as insecurity and anxiety [20]. Developmental loneliness is a feeling generated by physical or psychological disabilities, poverty, personal inadequacies, and significant separation [21]. Situational loneliness is a temporary unpleasant feeling triggered by environmental factors such as disaster, accidents, and immigration [14]. Internal loneliness is understood as a subjective experience of being lonely [22], and it is caused by

personal factors such as poor coping strategies with situations, feeling of worthlessness, low self-esteem, and mental distress [14].

Several theories were proposed to understand the concept of loneliness among humans. One is the evolutionary theory developed by John Cacioppo and Stephanie Cacioppo [23]. This theory suggests that people are social creatures that need others in their social environments to remain alive [24]. It views that the unpleasant emotions associated with loneliness (e.g., depressed mood) motivate people to develop and sustain relationships with others to meet their needs for social interaction [25]. Cognitive theory is another theory proposed to explain loneliness [26]. According to this theory, loneliness developed because of the perceived mismatch between desired social connections and the state or level of social interactions and connections [26–28]. This mismatch is connected to situations and occurrences in life, such as moving, becoming a widow, or becoming disabled [29]. For instance, poor health affects people's capacity to sustain ordinary levels of social interaction [30]. The psychodynamic theory is another theoretical approach to understanding loneliness [31]. Freud's general psychotherapy approach influences this theory and proposes that disturbances in early emotional relationships with childhood caregivers cause loneliness. These disturbances contribute to a lack of social interaction skills among affected people and other issues that appear as difficulties in establishing social relationships, resulting in loneliness [32].

Another example of theories underlying loneliness is the interactionist theory developed by Weiss [17]. This theory suggests that loneliness is not just a result of situational or personality variables. Instead, it results from a need for a sufficient social network and the absence of an attachment figure [33]. Finally, the perspective of the existential theory is also considered a valid theory to explain loneliness. According to this theory, loneliness is a natural state that enables people to develop a deeper self-understanding [34]. It views the experience of being alone as a positive chance to grow, which is enhanced by "love." Loneliness is also seen as a vital part of life. In the most private moments of existence, we are essentially "alone" [35].

The phenomenon of loneliness is influenced by several factors contributing to its causality or predictability, including social, environmental, and cultural factors [36]. For example, previous studies reported that factors such as being widowed or divorced, being of older age [37], being male, being from an immigrant background, having low physical activity [38, 39], being unemployed and retired, having low income [40], and having poor quality relationships with family and friends [41], are risk factors for social isolation and loneliness among the general population. Other studies viewed that loneliness is influenced by several factors other than social, environmental, and cultural factors. For instance, it was found that loneliness is associated with physical health factors, including chronic illnesses such as heart disease, stroke, and cancer [36]. Similarly, it was also reported that mental health conditions, such as psychotic disorders [42, 43], depression [44], anxiety [45], dementia, and Alzheimer's disease [46], are contributing factors to the

feeling of loneliness. Although all previously mentioned factors contribute to loneliness feelings, their influence mechanism to generate this feeling among humans may vary.

Nurses, like any human being, are vulnerable to experiencing feelings of loneliness. However, very few studies have investigated the reasons or factors that lead nurses to experience such a feeling in their workplace [47]. A survey conducted by Arslan et al. [12] revealed that nurses could experience feelings of loneliness due to the lack of communication with leaders, lower reports of meaningful work, and less trust in leaders. In other studies, it was found that loneliness among nurses was associated with burnout, emotional exhaustion (e.g., oncology nurses) [48], low job performance [49], and work alienation [50]. Addressing these factors and promoting a supportive work environment may help decrease nurses' loneliness and enhance their overall well-being.

3. Prevalence of Loneliness Among Nurses

Loneliness is a significant concern among healthcare professionals, particularly nurses [51]. This phenomenon arises from a myriad of factors. However, no comprehensive estimates currently outline this issue's global prevalence in nursing. A descriptive cross-sectional study was conducted among nursing students in the nursing college at the University of Basra in 2021 [52]. The findings reveal that the students had a moderate level of loneliness and low self-esteem. There was a significant negative relationship between loneliness and self-esteem. There was a negative relationship between loneliness and self-esteem, as a high level of self-esteem led to a reduction in loneliness among nursing students. Hence, it is recommended to establish a counseling center or mental health clinic to identify the psychological problems of nursing students at an early stage.

Another research study examined the association between loneliness, complaining, and professional burnout among medical personnel working in psychiatric care during the pandemic [53]. The Loneliness Scale, Oldenburg Burnout Questionnaire, Complaint Questionnaire, and the author's questionnaire have been used. About 19.2% of respondents were doctors, and 70% were nurses. 5% were paramedics, and 6% were medical caregivers. Results demonstrate that loneliness and complaining are significant predictors of exhaustion in addition to job seniority. The model describes the 18% exhaustion variance. Women mainly complained in nature, and the complaining strongly correlated with direct support from the organization. Raised levels of loneliness correlate well with the worse work organization climate, decreased management support, lack of team support, and more irresponsible attitudes seen in the colleagues. Loneliness and complaining might be used to predict occupational burnout. Loneliness correlates to a bad work environment and lousy cooperation among the team members.

In addition, another cross-sectional study was conducted among 864 Turkish nurses to explore the social exchange between leaders and members, frequency of

communication, belief in leaders, meaningfulness in work, and loneliness [12]. Scales were used for 2 months to avoid fatigue and the influence of method variance. Results reveal that when the manager communicates more frequently with the nurses, it will lead to less workplace loneliness. In addition, loneliness has been reduced because there is good trust in the leaders, and the members find the work meaningful.

Loneliness is said to be a significant public health-related issue at COVID-19 times. The prevalence of loneliness among healthcare professionals has been examined in Sydney, Australia, before the pandemic predictors and during the pandemic, with its association with loneliness [54]. An online survey was done regarding the changes at work, with family, and in social experiences before and during the pandemic. Among 330 respondents, loneliness harmed the well-being of 129 respondents. The pre-pandemic factors that predict loneliness were the younger age, having ever been told the individual has a mental health problem, and living alone. Psychological distress and poor mental health during pandemics were positively associated with loneliness.

Furthermore, another study has suggested that loneliness can have a lasting, detrimental impact on mental wellbeing [54–56]. However, during the pandemic, the extent of this effect remains unclear. Considering these findings, an online survey was conducted among healthcare professionals in a Sydney-based hospital in Australia [54]. The results indicated that a third of these professionals experienced peak loneliness during the initial wave of COVID-19. This subsequently led to a significant rise in psychological distress and stressors over the following months.

4. Impact of Loneliness on Nurses and Healthcare

Nurses worldwide increasingly realize that loneliness is a substantial public health issue they must address [57, 58]. The subjective experience of being socially isolated, often known as loneliness, results from a perceived mismatch between an individual's social needs and what they get from their social environment [59].

The adverse effects that loneliness has on one's physical and mental health are what contribute to its negative influence on public health. Those who say they feel lonely have a 26% greater chance of passing away [60], and the increased morbidity related to loneliness includes coronary heart disease, stroke, hypertension, chronic pain, and obesity [24, 61]. There is a correlation between feeling lonely and having a higher chance of engaging in behaviors that are hazardous to one's health, such as not engaging in physical exercise, smoking, or abusing alcohol [59, 62, 63]. There is a correlation between loneliness and negative consequences for mental health, such as depression, anxiety, suicidal thoughts, parasuicide, and suicide itself [24, 61, 62, 64, 65]. Nurses and other healthcare workers who spend much time alone are at a greater risk of developing mental health conditions such as depression and anxiety, scoring higher on

measures of suicidal ideation and reporting higher levels of psychological discomfort [56, 66–73]. It is a two-way street regarding the association between loneliness and mental health [6, 61, 74, 75]. Loneliness is a risk factor for impaired cognitive functioning and cognitive decline, and it raises the probability of developing dementia by more than 2-fold [24, 65]. In addition, both transient and chronic loneliness significantly predict cognitive decline. Chronic loneliness has more pronounced adverse effects, especially in those with better mental health [76]. Liu et al. used network analysis to compare loneliness, depressive symptoms, and anxiety symptoms in older adults before and during COVID-19 [77]. Data from 2549 respondents before and 3506 during COVID-19 revealed that feeling restless was central to both networks. The pandemic network showed higher global strength and edge variability, indicating more complex symptom interactions. Stronger connections were found between feeling isolated and other symptoms during the pandemic, suggesting targeted interventions could mitigate mental health issues. At the same time, Zhong et al. examined the psychological network of loneliness symptoms during the COVID-19 outbreak in China using data from 8472 residents [78]. The strongest associations were between “no reliable people” and “no trustworthy people.” Central symptoms like “no trustworthy people” and “emptiness sense,” along with bridge symptoms such as “feeling of rejection,” were identified as critical targets for interventions to reduce loneliness.

Emotional depletion and a lack of social interaction at work are two characteristics of loneliness. Lack of social companionship is a quantitative measure that describes the perceived sufficiency of one's social network size, and emotional deprivation at work has been defined as a qualitative measure that represents one's perception of the lack of meaningfulness and satisfaction with one's relationships with coworkers [79].

Workplace loneliness has several detrimental implications for both healthcare workers and companies. Studies in the literature have shown that loneliness at work negatively affects workers' life and job happiness, leader-member interaction, perceived manager support, organizational citizenship behavior, work performance, and work efficiency [80, 81]. Conversely, loneliness at work might raise workers' intentions to leave, foster organizational cynicism, and alienate employees [82]. Additionally, loneliness at work may stress out Nurses and harm their health. The detrimental impacts of loneliness at work also harm organizational performance and workplace harmony [83].

Employees who experience a lack of personal connection at work feel less devoted to their company and do not perform as well as other employees. According to a study published in the *Academy of Management Journal*, lonely employees get worse performance reviews from their managers [84]. Chronic loneliness may also contribute to the onset of major depressive illness, which has a detrimental effect on productivity by making it very difficult to focus and pay attention, ultimately resulting in numerous mistakes such as medication errors [85].

Because of this, disgruntled workers often leave their companies, either physically or psychologically [86]. In essence, workers are more likely to mentally withdraw from their workplace if they experience loneliness, whether because of emotional or social alienation [50]. This is especially noteworthy since emotional processes underlie organizational commitment and loneliness [27]. Additionally, studies have shown a link between interpersonal interactions at work and the desire to quit, with bad relationships with colleagues emerging as the most important factor [87]. It is projected that workplace loneliness affects employee attitudes negatively, leading to poor organizational engagement and a desire to leave the company. As a result, the study's final hypothesis is based on the mediating function of emotional commitment in the relationship between loneliness and the decision to end a relationship [49].

The financial expenses for lonely nurses, their families, friends, the health system, the neighborhood, and the economy, in general, may be used to assess the cost of loneliness for healthcare institutions [88]. In this respect, it is crucial to consider the expenses of social assistance and medical treatment according to various socio-economic groups and varieties of loneliness. Because loneliness causes a greater demand and use of healthcare, particularly among nurses who suffer disproportionately from multiple illnesses, it significantly influences the rising healthcare expenses in Western nations [89]. Additionally, loneliness may add to the strain on medical resources. It is linked to more general practitioner visits, independent of health [90]. This phenomenon occurs as individuals experiencing loneliness may be more inclined to seek medical care, using it to satisfy their unmet social connection needs.

Regarding loneliness's indirect costs to society, those who struggle with mental health issues need greater social assistance from their families and communities. When nurses cannot work due to health issues, economic activity is lost [90]. This includes drinking too much alcohol and the direct expenses of employment (e.g., lost productivity or workplace accidents) and deadly road accidents [91]. Increased morbidity and death had a significant indirect cost [92–94].

A cross-sectional survey during COVID-19 in China involved 7741 adults and found that 24.2% felt lonely [95]. Younger age [16–29], never-married, remarried, separated, divorced, or widowed status, and having infected family or friends were significant correlates of loneliness. Lonely participants had higher mental health needs (17.4% vs. 4.9%) and services utilization (2.7% vs. 1.0%). Loneliness remained significantly associated with mental health needs and service utilization even after adjusting for other factors. Effective measures to reduce loneliness are crucial for mental well-being and conserving mental health resources during the pandemic. Another prospective study followed 713 participants aged 80+ in the UK over 7 years, examining loneliness and health/social care service use [96]. About 25% felt lonely, and 16% felt slightly lonely. Loneliness was associated with increased contact with community nurses (IRR = 3.4) and Meals on Wheels services (IRR = 2.5). No other health/social care services were linked to loneliness. Findings highlight

loneliness as a risk factor for specific health/social care utilizations, emphasizing the need for public health policies to address and prevent loneliness in the oldest old.

5. The Role of the Workplace Environment

Loneliness is increasingly recognized as a significant public health concern impacting a range of physical and mental health conditions among nurses across the globe [54]. The mortality risk is approximately 26% higher among those who report loneliness [12], and raised morbidity linked to loneliness includes stroke, coronary heart disease, hypertension, chronic pain, and obesity [12, 54].

Nursing practice has ingrained emotional burdens, time limitations, and physical necessities [11, 97]. In the work environment, nurses experience stress, rotating shifts or working nights, lack of equipment and resources, uneven allocation of workload [47], and erratic team dynamics have been demonstrated to reinforce associated outcomes [12, 80]. Loneliness has been suggested to be a persistent issue causing emotional exhaustion [98], poor health, depressive symptoms, decreased team spirit, and distress [99] in addition to affecting job performance, productivity, organizational commitment [47], and resilience among nurses [12, 47, 54].

Alterations and reforms impact healthcare organizations, creating new difficulties for nurses [100]. Furthermore, nurses must be willing to attain their personal and organizational goals [101]. Organizational culture shapes the organization and provides a complex understanding of critical organizational elements that impact nurses [102, 103].

Organizational culture is the system of shared values, beliefs, and actions that evolve within an organization and lead the behavior of its employees [101]. It can intensify organizational performance [104] and job satisfaction, enhance the feeling of assurance about problem-solving [101], and also achieve a quality of care and quality of life for nursing [105, 106].

Organizational culture consists of several factors: internal communication, work balance, leadership style [101], professional growth, employee satisfaction, reward system, and organizational performance [101, 106]. Several empirical studies have found that organizational culture can negatively impact psychological well-being, increase emotional exhaustion, reduce nurse self-confidence, and cause a lack of motivation [107]. Yet, they emphasize the distress of isolation, the fear of loneliness, and the fear of damaging relationships among nurses [107, 108].

Moreover, it affects the implementation of quality systems in hospitals, the quality of patient care, job satisfaction, and patient satisfaction [109], thus influencing organizational commitment, productivity, and organizational outcomes [101, 110].

Generally, employees' working environment, personality, cultural background, and beliefs were discovered to impact interpersonal relationships in the workplace [111, 112]. Organizational management provides workers with programs for education and training and ensures

a working environment that does not place barriers and challenges on workplace interpersonal relationships [111, 113, 114].

Studies have indicated that social support boosts feelings of belonging and solidarity [115], leads to healthier coping behaviors, enables self-protection [116], and enhances the regulation of emotions such as mistrust, anxiety, fear, and loneliness [117–119].

Organizational policies and practices are effective in addressing and reducing workplace loneliness in healthcare settings [115, 120] through developing a strategic approach to improving organizational culture and organizational trust among nurses [11, 106] and, in addition, promoting practical implications to effectively address loneliness, including coping mechanisms, social skills training, psycho-education, and socialization [115, 118].

Therefore, elaborating efficient mentorship programs to improve nurses' resilience and mitigate the factors leading to loneliness [117, 121] and designing intervention programs to recognize loneliness and social isolation in health care settings [116, 122]. Thus, nursing administrators and managers need to understand how to improve interprofessional collaboration [101, 123], promote support, increase self-efficacy [123], and foster a supportive work environment among nurses [114, 117, 124].

6. Coping Strategies and Interventions

Navigating the challenges of loneliness, especially in high-stress professions such as nursing, requires various coping strategies and interventions. These approaches range from self-help techniques to formal support structures, workplace interventions, and technology-based solutions.

Self-help techniques such as mindfulness and meditation can help nurses develop resilience and emotional balance [125]. Mindfulness requires focusing on the present moment without judgment and reducing feelings of isolation by cultivating self-compassion and acceptance [126]. Physical exercise is another essential self-help strategy [127]. Regular exercise can stimulate the production of endorphins, improving mood and acting as a natural stress reliever. Incorporating even a short walk or stretch during breaks can be beneficial. Moreover, maintaining a balanced diet and sufficient sleep is critical [128]. Both these factors contribute to emotional well-being and the ability to cope with stress effectively.

Beyond individual coping strategies, formal support structures can provide a crucial layer of assistance. These can involve counseling services, support groups, or peer mentoring. Counseling offers a safe space for nurses to express their feelings and thoughts, helping them cope with stress, anxiety, and loneliness [129]. Peer support groups offer shared experiences, collective wisdom, and emotional backing, whether formal or informal. Nurses often find solace in speaking to others facing similar challenges, fostering a sense of belonging [130].

Workplace interventions can significantly reduce feelings of loneliness among nurses [131]. Organizations can create platforms for social interaction among their staff, like

team-building activities or social events, which can strengthen colleague bonds. Creating a nurturing and supportive work culture is also essential. Encouraging open communication, showing appreciation for one's work, and creating opportunities for career development can enhance job satisfaction and decrease feelings of isolation. Wellbeing programs can provide nurses with tools and resources to manage their mental health [132]. These may include stress management workshops, resiliency training, or relaxation techniques.

In an era where technology is seamlessly integrated into our lives, it also plays a role in managing loneliness. Mobile applications focusing on mental health can provide resources for meditation, stress management, and even therapy sessions [133]. Online communities and forums can offer a platform for nurses to share experiences and support each other, irrespective of geographical boundaries. These communities can become a valuable resource for individuals needing access to or feeling comfortable seeking in-person support. Furthermore, Teletherapy, providing mental health services over distance using technology, has also shown promise as a convenient and effective method of delivering psychological support [134, 135].

Moreover, several systematic reviews identified practical intervention components: promoting social contact, transferring knowledge and skills, and addressing social cognition. While effective, the interventions showed substantial between-study heterogeneity, necessitating further research to enhance applicability and cost-effectiveness across diverse settings and populations [136–138].

7. Recommendations and Future Directions

Addressing loneliness among nurses necessitates a comprehensive and strategic approach involving changes at the institutional level and shifts in policy and research focuses.

Healthcare institutions should prioritize creating a supportive work environment that encourages open communication, peer support, and professional growth. Encouraging the organization of team-building activities, group therapy sessions, and wellness programs can promote a sense of belonging and reduce feelings of isolation. Additionally, introducing measures such as flexible work hours, a fair workload distribution system, and opportunities for professional development can enhance job satisfaction and minimize burnout, thereby mitigating loneliness.

At a policy level, authorities must recognize and address the mental health of healthcare professionals, particularly nurses. Policies that mandate regular mental health screenings, along with the provision of confidential psychological support for those who need it, should be implemented. Consideration should also be given to regulatory measures that limit excessive work hours, ensuring a healthy work-life balance for nurses. Further, regulations encouraging the inclusion of mental health as a significant aspect of occupational safety and health programs in healthcare institutions could prove instrumental.

Future research must establish the extent of loneliness among nurses globally and investigate its long-term impacts

on their mental health and patient care. It is essential to explore the efficacy of various interventions in reducing loneliness among nurses, from self-help techniques to technology-based solutions. Furthermore, longitudinal studies investigating the impact of institutional and policy changes on the mental well-being of nurses will also be invaluable. This can provide the basis for an evidence-based approach to formulate interventions and make policy decisions, fostering an environment that supports the emotional well-being of nurses, which will enhance patient care quality.

8. Limitations

This narrative review has several limitations. Firstly, it lacks a systematic search strategy, which may limit the comprehensiveness of the findings and increase the risk of bias in study selection. Secondly, the review does not include a critical appraisal of the methodological quality of the studies reviewed, which may affect the conclusions' validity. Additionally, the review does not provide quantitative data on the interventions' effectiveness, and cultural differences that may influence loneliness among nurses are not deeply explored. Future research should address these gaps to provide more robust insights into this vital issue.

9. Conclusions

Addressing loneliness among nurses necessitates a multifaceted approach, encompassing self-help techniques, formal support structures, workplace interventions, and technology-based solutions. Institutions and policymakers must also actively create a nurturing environment for nurses. Loneliness among nurses affects their well-being, professional efficacy, and the quality of patient care they deliver. Therefore, addressing this issue is not a matter of choice but a pressing requirement for the sustenance of the healthcare system. A call to action for all stakeholders—healthcare institutions, policymakers, and researchers—is to prioritize the emotional well-being of nurses. Through proactive measures and interventions, we can create a healthcare environment that supports and nurtures its most vital resource—its caregivers. In doing so, we enhance our ability to provide the best care to those in need.

Data Availability Statement

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

Ethics Statement

The authors have nothing to report.

Conflicts of Interest

The authors declare no conflicts of interest.

Author Contributions

Abdulqadir J. Nashwan: conceptualization.

Abdulqadir J. Nashwan, Yasir S. Alsalamah, Mohammad S. Abu-Mahfouz, Prakash Palanivelu, Ahmed Masoud, Rasha Abu Baker, and Evangelos C. Fradelos: literature search, writing-draft, and final editing.

All authors read and approved the final manuscript.

Funding

The publication of this article was funded by Qatar National Library.

Acknowledgments

The authors have nothing to report.

References

- [1] P. Willis, A. Vickery, and T. Jessiman, "Loneliness, Social Dislocation and Invisibility Experienced by Older Men Who Are Single or Living Alone: Accounting for Differences across Sexual Identity and Social Context," *Ageing and Society* 42, no. 2 (2022): 409–431, <https://doi.org/10.1017/s0144686x20000914>.
- [2] L. M. B. Andersen, A. N. Rasmussen, N. J. Reavley, H. Bøggild, and C. Overgaard, "The Social Route to Mental Health: a Systematic Review and Synthesis of Theories Linking Social Relationships to Mental Health to Inform Interventions," *SSM-Mental Health* 1 (2021): 100042, <https://doi.org/10.1016/j.ssmmh.2021.100042>.
- [3] M. H. Lim, R. Eres, and S. J. S. Vasani, *Understanding Loneliness in the Twenty-First Century: An Update on Correlates, Risk Factors, and Potential Solutions* (2020).
- [4] V. Meeusen, S. Pyhälä, D. Gaskin, et al., "Nurse Anesthetists: Sharing Our Caring," *Advanced Practice in Nursing* (2023): 433–454, https://doi.org/10.1007/978-3-031-20762-4_31.
- [5] T. Du Preez, *Determinants of Work-Life Conflict and its Role in Burnout Among Nursing Staff* (Stellenbosch University, 2017).
- [6] S. Nagammal, A. J. Nashwan, S. Nair, and A. J. N. Susmitha, *Quality of Working Life of Nurses in a Tertiary Cancer Center in Qatar* (2017).
- [7] M. Sundström, K. Blomqvist, A. K. Edberg, and M. Rämngård, "The Context of Care Matters: Older People's Existential Loneliness from the Perspective of Healthcare Professionals—A Multiple Case Study," *International Journal of Older People Nursing* 14, no. 3 (2019): e12234, <https://doi.org/10.1111/opn.12234>.
- [8] S. Gupta and S. Sahoo, "Pandemic and Mental Health of the Front-Line Healthcare Workers: a Review and Implications in the Indian Context amidst COVID-19," *General psychiatry* 33, no. 5 (2020): e100284, <https://doi.org/10.1136/gpsych-2020-100284>.
- [9] T.-L. Jansen, M. H. Hem, L. J. Dambolt, and I. Hanssen, "Moral Distress in Acute Psychiatric Nursing: Multifaceted Dilemmas and Demands," *Nursing Ethics* 27, no. 5 (2020): 1315–1326, <https://doi.org/10.1177/0969733019877526>.
- [10] C. Dall'Ora, C. Saville, B. Rubbo, L. Turner, J. Jones, and P. Griffiths, "Nurse Staffing Levels and Patient Outcomes: a Systematic Review of Longitudinal Studies," *International Journal of Nursing Studies* 134 (2022): 104311, <https://doi.org/10.1016/j.ijnurstu.2022.104311>.
- [11] R. E. Wood, R. E. Brown, and P. A. Kinser, "The Connection between Loneliness and Burnout in Nurses: An Integrative

- Review," *Applied Nursing Research* 66 (2022): 151609, <https://doi.org/10.1016/j.apnr.2022.151609>.
- [12] A. Arslan, S. Yener, and J. A. Schermer, "Predicting Workplace Loneliness in the Nursing Profession," *Journal of Nursing Management* 28, no. 3 (2020): 710–717, <https://doi.org/10.1111/jonm.12987>.
- [13] R. E. Wood, "The Unseen Wellbeing Dilemma: Nurse Loneliness" (2022).
- [14] S. C. Tiwari, "Loneliness: A Disease?" *Indian Journal of Psychiatry* 55, no. 4 (2013): 320, <https://doi.org/10.4103/0019-5545.120536>.
- [15] J. Schaafsma, "The Role of Social Needs Fulfilment and Social Capital in Older Adults' Subjective Well-Being: A Qualitative Research with a Focus on Future Residents of Sheltered housing'Wonen Met Een PLUS," *Delfzijl* (2018).
- [16] National, "Social Isolation and Loneliness in Older Adults: Opportunities for the Health Care System" (2020).
- [17] R. Weiss, *The Experience of Emotional and Social Isolation* (MIT press, 1975).
- [18] P. Dor-Haim, "Expressions of Loneliness: Different Perspectives of Loneliness Among School Deputy Principals," *Educational Management Administration & Leadership* (2021): 17411432211021425.
- [19] M. Shibata, T. Ohara, M Hosoi, et al., "Emotional Loneliness Is Associated with a Risk of Dementia in a General Japanese Older Population: the Hisayama Study," *The Journals of Gerontology: Serie Bibliographique* 76, no. 9 (2021): 1756–1766, <https://doi.org/10.1093/geronb/gbaa196>.
- [20] P. A. Dykstra and J. de Jong Gierveld, "Gender and Marital-History Differences in Emotional and Social Loneliness Among Dutch Older Adults," *Canadian Journal on Aging/La revue canadienne du vieillissement*. 23, no. 2 (2004): 141–155, <https://doi.org/10.1353/cja.2004.0018>.
- [21] C. Ugwu, K. T. Ogba, S. K. Nwonyi, P. N. Ugwuegede, and S. K. Iorfa, "Personality, Loneliness and Mental Health in a Nigerian Sample of University Students," *Nigerian Journal of Psychological Research* 13 (2017).
- [22] S. Grover, "Loneliness: Does it Need Attention," *Journal of Geriatric Mental Health* 6, no. 1 (2019): 1, https://doi.org/10.4103/jgmh.jgmh_27_19.
- [23] J. T. Cacioppo and S. Cacioppo, "Loneliness in the Modern Age: An Evolutionary Theory of Loneliness (ETL)," *Advances in Experimental Social Psychology* 58 (2018): 127–197, <https://doi.org/10.1016/bs.aesp.2018.03.003>.
- [24] L. C. Hawkey and J. T. Cacioppo, "Loneliness Matters: A Theoretical and Empirical Review of Consequences and Mechanisms," *Annals of behavioral medicine* 40, no. 2 (2010): 218–227, <https://doi.org/10.1007/s12160-010-9210-8>.
- [25] J. Holt-Lunstad, "Loneliness and Social Isolation as Risk Factors: The Power of Social Connection in Prevention," *American Journal of Lifestyle Medicine* 15, no. 5 (2021): 567–573, <https://doi.org/10.1177/15598276211009454>.
- [26] D. Perlman and L. A. Peplau, "Toward a Social Psychology of Loneliness," *Personal Relationships* 3 (1981): 31–56.
- [27] W. E. Nakhla, *Loneliness: A Concept Analysis*. *Nursing Forum* (Wiley Online Library, 2008).
- [28] H. Burroughs and R. Wilkie, "Social Participation, Loneliness and Depression," *Mental Health and Older People* (2016): 57–65, https://doi.org/10.1007/978-3-319-29492-6_6.
- [29] V. Burholt, G. Windle, and D. J. Morgan, "A Social Model of Loneliness: The Roles of Disability, Social Resources, and Cognitive Impairment," *The Gerontologist* 57, no. 6 (2017): 1020–1030, <https://doi.org/10.1093/geront/gnw125>.
- [30] V. Burholt and T. Scharf, "Poor Health and Loneliness in Later Life: the Role of Depressive Symptoms, Social Resources, and Rural Environments," *Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 69, no. 2 (2014): 311–324, <https://doi.org/10.1093/geronb/gbt121>.
- [31] F. F. Reichmann, "Loneliness," *Psychiatry* 22, no. 1 (1959): 1–15, <https://doi.org/10.1080/00332747.1959.11023153>.
- [32] A. R. Rönkä, V. Sunnari, and A. Taanila, "Entanglements of Loneliness and Mental Ill Health Among Young Adult Women," *International Journal of Qualitative Studies on Health and Well-Being* 15, no. 1 (2020): 1838101, <https://doi.org/10.1080/17482631.2020.1838101>.
- [33] B. Singh and U. Kiran, "Loneliness Among Elderly Women," *International Journal of Humanities and Social Science Invention* 2, no. 2 (2013): 10–14.
- [34] P. Tillich and P. Tillich, *The Eternal Now* (1963).
- [35] J. M. Donaldson and R. Watson, "Loneliness in Elderly People: an Important Area for Nursing Research," *Journal of Advanced Nursing* 24, no. 5 (1996): 952–959, <https://doi.org/10.1111/j.1365-2648.1996.tb02931.x>.
- [36] National, *Social Isolation and Loneliness in Older Adults: Opportunities for the Health Care System* (National Academies Press, 2020).
- [37] F. Neto, "Socio-demographic Predictors of Loneliness across the Adult Life Span in Portugal," *Interpersona: An International Journal on Personal Relationships* 8, no. 2 (2014): 222–230, <https://doi.org/10.5964/ijpr.v8i2.171>.
- [38] L. Dahlberg and K. J. McKee, "Correlates of Social and Emotional Loneliness in Older People: Evidence from an English Community Study," *Aging & Mental Health* 18, no. 4 (2014): 504–514, <https://doi.org/10.1080/13607863.2013.856863>.
- [39] K. Diehl, C. Jansen, K. Ishchanova, and J. Hilger-Kolb, "Loneliness at Universities: Determinants of Emotional and Social Loneliness Among Students," *International Journal of Environmental Research and Public Health* 15, no. 9 (2018): 1865, <https://doi.org/10.3390/ijerph15091865>.
- [40] H. Bosma, M. Jansen, S. Schefman, K. J. Hajema, and F. Feron, "Lonely at the Bottom: a Cross-Sectional Study on Being Ill, Poor, and Lonely," *Public Health* 129, no. 2 (2015): 185–187, <https://doi.org/10.1016/j.puhe.2014.11.016>.
- [41] R. J. Taylor, "Correlates of Objective Social Isolation from Family and Friends Among Older Adults," *Healthcare* (2018).
- [42] E.-M. Merz and J. D. J. Gierveld, "Childhood Memories, Family Ties, Sibling Support and Loneliness in Ever-Widowed Older Adults: Quantitative and Qualitative Results," *Ageing and Society* 36, no. 3 (2016): 534–561.
- [43] A. Chrostek, P. Grygiel, M. Anczewska, J. Wciórka, and P. Świtaj, "The Intensity and Correlates of the Feelings of Loneliness in People with Psychosis," *Comprehensive Psychiatry* 70 (2016): 190–199, <https://doi.org/10.1016/j.comppsy.2016.07.015>.
- [44] L. Achterbergh, A. Pitman, M. Birken, E. Pearce, H. Sno, and S. Johnson, "The Experience of Loneliness Among Young People with Depression: a Qualitative Meta-Synthesis of the Literature," *BMC Psychiatry* 20, no. 1 (2020): 415–423, <https://doi.org/10.1186/s12888-020-02818-3>.
- [45] H. Meltzer, P. Bebbington, M. S. Dennis, R. Jenkins, S. McManus, and T. S. Brugha, "Feelings of Loneliness Among Adults with Mental Disorder," *Social Psychiatry and Psychiatric Epidemiology* 48, no. 1 (2013): 5–13, <https://doi.org/10.1007/s00127-012-0515-8>.
- [46] G. M. McKhann, D. S. Knopman, H. Chertkow, et al., "The Diagnosis of Dementia Due to Alzheimer's Disease:

- Recommendations from the National Institute on Aging-Alzheimer's Association Workgroups on Diagnostic Guidelines for Alzheimer's Disease," *Alzheimer's and Dementia* 7, no. 3 (2011): 263–269, <https://doi.org/10.1016/j.jalz.2011.03.005>.
- [47] M. Amarat, M. Akbolat, Ö Ünal, and B. Güneş Karakaya, "The Mediating Role of Work Alienation in the Effect of Workplace Loneliness on Nurses' Performance," *Journal of Nursing Management* 27, no. 3 (2019): 553–559, <https://doi.org/10.1111/jonm.12710>.
- [48] C. S. Phillips, *Psychosocial Well-Being: An Exploratory Cross-Sectional Evaluation of Loneliness, Anxiety, Depression, Self-Compassion, and Professional Quality of Life in Oncology Nurses* (2021).
- [49] S. Deniz, "Effect of Loneliness in the Workplace on Employees' job Performance: a Study for Hospital Employees," *International Journal of Health Services Research and Policy* 4, no. 3 (2019): 214–224, <https://doi.org/10.23884/ijhsrp.2019.4.3.06>.
- [50] G. Santas, O. Isik, and A. Demir, "The Effect of Loneliness at Work; Work Stress on Work Alienation and Work Alienation on Employees' Performance in Turkish Health Care Institution," *South Asian Journal of Management Sciences* 10, no. 2 (2016): 30–38, <https://doi.org/10.21621/sajms.2016102.03>.
- [51] A. J. Nashwan, R. Alahmad, G. Abu Afifeh, and N. Abu Afifeh, "Dissecting Loneliness in the Digital Age: An Insight into the Experiences of Medical Students amid and beyond the COVID-19 Pandemic," *Research: Ideas for Today's Investors* 12 (2023): 1196, <https://doi.org/10.12688/f1000research.141325.1>.
- [52] D. M. Bachi and N. S. Kadhim, "Loneliness and Self-Esteem Among Nursing College Students at Basra University," *Bahrain Medical Bulletin* 43, no. 4 (2021).
- [53] "Loneliness, Complaining and Professional Burnout of Medical Personnel of Psychiatric Wards during COVID-19 Pandemic—Cross-Sectional Study," *Healthcare* (2022).
- [54] J. M. Stubbs and H. M. Achat, "Are Healthcare Workers Particularly Vulnerable to Loneliness? the Role of Social Relationships and Mental Well-Being during the COVID-19 Pandemic," *Psychiatry research communications* 2, no. 2 (2022): 100050, <https://doi.org/10.1016/j.psychcom.2022.100050>.
- [55] A. J. Nashwan, R. G. Mathew, R. Anil, et al., "The Safety, Health, and Well-Being of Healthcare Workers during COVID-19: A Scoping Review," *AIMS Public Health* 10, no. 3 (2023): 593–609, <https://doi.org/10.3934/publichealth.2023042>.
- [56] A. J. Nashwan, R. C. Villar, A. R Al-Qudimat, et al., "Quality of Life, Sleep Quality, Depression, Anxiety, Stress, Eating Habits, and Social Bounds in Nurses during the Coronavirus Disease 2019 Pandemic in Qatar (The PROTECTOR Study): a Cross-Sectional, Comparative Study," *Journal of Personalized Medicine* 11, no. 9 (2021): 918, <https://doi.org/10.3390/jpm11090918>.
- [57] J. Holt-Lunstad, "A Pandemic of Social Isolation?" *World Psychiatry* 20, no. 1 (2021): 55–56, <https://doi.org/10.1002/wps.20839>.
- [58] B. J. Smith and M. H. Lim, "How the COVID-19 Pandemic Is Focusing Attention on Loneliness and Social Isolation," *Public Health Res Pract* 30, no. 2 (2020): 3022008, <https://doi.org/10.17061/phrp3022008>.
- [59] L. C. Hawkey and J. P. Capitanio, "Perceived Social Isolation, Evolutionary Fitness and Health Outcomes: a Life-span Approach," *Philosophical Transactions of the Royal Society B: Biological Sciences* 370, no. 1669 (2015): 20140114, <https://doi.org/10.1098/rstb.2014.0114>.
- [60] J. Holt-Lunstad, T. B. Smith, M. Baker, T. Harris, and D. Stephenson, "Loneliness and Social Isolation as Risk Factors for Mortality: a Meta-Analytic Review," *Perspectives on Psychological Science* 10, no. 2 (2015): 227–237, <https://doi.org/10.1177/1745691614568352>.
- [61] J. Wang, F. Mann, B. Lloyd-Evans, R. Ma, and S. Johnson, "Associations between Loneliness and Perceived Social Support and Outcomes of Mental Health Problems: a Systematic Review," *BMC Psychiatry* 18, no. 1 (2018): 156–216, <https://doi.org/10.1186/s12888-018-1736-5>.
- [62] M. E. Beutel, E. M. Klein, E. Brähler, et al., "Loneliness in the General Population: Prevalence, Determinants and Relations to Mental Health," *BMC Psychiatry* 17, no. 1 (2017): 97–7, <https://doi.org/10.1186/s12888-017-1262-x>.
- [63] A. Shankar, A. McMunn, J. Banks, and A. Steptoe, "Loneliness, Social Isolation, and Behavioral and Biological Health Indicators in Older Adults," *Health Psychology* 30, no. 4 (2011): 377–385, <https://doi.org/10.1037/a0022826>.
- [64] W. D. Killgore, S. A. Cloonan, E. C. Taylor, and N. S. Dailey, "Loneliness: A Signature Mental Health Concern in the Era of COVID-19," *Psychiatry Research* 290 (2020): 113117, <https://doi.org/10.1016/j.psychres.2020.113117>.
- [65] R. Mushtaq, S. Shoib, T. Shah, and S. Mushtaq, "Relationship between Loneliness, Psychiatric Disorders and Physical Health? A Review on the Psychological Aspects of Loneliness," *Journal of Clinical and Diagnostic Research: Journal of Clinical and Diagnostic Research* 8, no. 9 (2014): WE01–WE4, <https://doi.org/10.7860/JCDR/2014/10077.4828>.
- [66] X.-H. Fang, L. Wu, L.-S Lu, et al., "Mental Health Problems and Social Supports in the COVID-19 Healthcare Workers: a Chinese Explanatory Study," *BMC Psychiatry* 21, no. 1 (2021): 34–38, <https://doi.org/10.1186/s12888-020-02998-y>.
- [67] R. J. McQuaid, S. M. Cox, A. Ogunlana, and N. Jaworska, "The Burden of Loneliness: Implications of the Social Determinants of Health during COVID-19," *Psychiatry Research* 296 (2021): 113648, <https://doi.org/10.1016/j.psychres.2020.113648>.
- [68] M. A. U. Repon, S. A. Pakhe, S. Quaiyum, R. Das, S. Daria, and M. R. Islam, "Effect of COVID-19 Pandemic on Mental Health Among Bangladeshi Healthcare Professionals: a Cross-Sectional Study," *Science Progress* 104, no. 2 (2021): 00368504211026409, <https://doi.org/10.1177/00368504211026409>.
- [69] S. De Sio, G. Buomprisco, G La Torre, et al., "The Impact of COVID-19 on Doctors' Well-Being: Results of a Web Survey during the Lockdown in Italy," *European Review for Medical and Pharmacological Sciences* 24, no. 14 (2020): 7869–7879, https://doi.org/10.26355/eurrev_202007_22292.
- [70] A. J. Nashwan, A. A. Abujaber, R. C. Villar, A. Nazarene, M. M. Al-Jabry, and E. C. Fradelos, "Comparing the Impact of COVID-19 on Nurses' Turnover Intentions before and during the Pandemic in Qatar," *Journal of Personalized Medicine* 11, no. 6 (2021): 456, <https://doi.org/10.3390/jpm11060456>.
- [71] R. C. Villar, A. J. Nashwan, R. G Mathew, et al., "The Lived Experiences of Frontline Nurses during the Coronavirus Disease 2019 (COVID-19) Pandemic in Qatar: A Qualitative Study," *Nursing Open* 8, no. 6 (2021): 3516–3526, <https://doi.org/10.1002/nop2.901>.
- [72] A. J. Nashwan, A. A. Abujaber, A. S. Mohamed, R. C. Villar, and M. M. Al-Jabry, "Nurses' Willingness to Work with COVID-19 Patients: the Role of Knowledge and Attitude," *Nursing open* 8, no. 2 (2021): 695–701, <https://doi.org/10.1002/nop2.674>.

- [73] N. Kader, B. Elhusein, N. S. K Chandrappa, et al., "Perceived Stress and Post-traumatic Stress Disorder Symptoms Among Intensive Care Unit Staff Caring for Severely Ill Coronavirus Disease 2019 Patients during the Pandemic: a National Study," *Annals of General Psychiatry* 20, no. 1 (2021): 38–8, <https://doi.org/10.1186/s12991-021-00363-1>.
- [74] F. Bu, A. Steptoe, and D. Fancourt, "Loneliness during a Strict Lockdown: Trajectories and Predictors during the COVID-19 Pandemic in 38,217 United Kingdom Adults," *Social Science & Medicine* 265 (2020): 113521, <https://doi.org/10.1016/j.socscimed.2020.113521>.
- [75] A. J. Nashwan, S. Gharib, M. Alhadidi, A. M. El-Ashry, A. Alamgir, and M. Al-Hassan, *Harnessing Artificial Intelligence: Strategies for Mental Health Nurses in Optimizing Psychiatric Patient Care* (2023).
- [76] B. L. Zhong, S. L. Chen, and Y. Conwell, "Effects of Transient versus Chronic Loneliness on Cognitive Function in Older Adults: Findings from the Chinese Longitudinal Healthy Longevity Survey," *American Journal of Geriatric Psychiatry* 24, no. 5 (2016): 389–398, <https://doi.org/10.1016/j.jagp.2015.12.009>.
- [77] T. Liu, Y. H. Wang, Z. L. Y Ng, et al., "Comparison of Networks of Loneliness, Depressive Symptoms, and Anxiety Symptoms in At-Risk Community-Dwelling Older Adults before and during COVID-19," *Scientific Reports* 14, no. 1 (2024): 14737, <https://doi.org/10.1038/s41598-024-65533-z>.
- [78] B. L. Zhong, M. D. Yuan, F. Li, and P. Sun, "The Psychological Network of Loneliness Symptoms Among Chinese Residents during the COVID-19 Outbreak," *Psychology Research and Behavior Management* 16 (2023): 3767–3776, <https://doi.org/10.2147/prbm.s424565>.
- [79] S. L. Wright, C. D. Burt, and K. T. Strongman, "Loneliness in the Workplace: Construct Definition and Scale Development" (2006).
- [80] H. Ozcelik and S. G. Barsade, "No Employee an Island: Workplace Loneliness and Job Performance," *Academy of Management Journal* 61, no. 6 (2018): 2343–2366, <https://doi.org/10.5465/amj.2015.1066>.
- [81] A.-A. Sirbu and A. C. Dumbravă, "Loneliness at Work and Job Performance: The Role of Burnout and Extraversion," *Psihologia Resurselor Umane* 17, no. 1 (2019): 7–18.
- [82] S. L. Wright, "Loneliness in the Workplace" (2005).
- [83] M. Cindiloğlu, S. Polatci, F. Özçalik, and Z. Gültekin, "The Effects of Workplace Loneliness on Job and Life Satisfaction: the Mediating Role of Leader-Member Exchange," *Ege Academic Review* 17, no. 2 (2017): 191–200.
- [84] S. Ece and S. Gültekin, "The Lonely Hearts in the Organizations: The Mediation Role of the Perceived Supervisor Support on the Cynical Attitudes of the Lonely Employees," *Turkish Studies* 14, no. 2 (2019): 355–370.
- [85] H. Akgül, "LOJİSTİK SEKTÖRÜ ÇALIŞANLARININ DUYGUSAL VE SOSYAL YALNIZLIK DÜZEYLERİNİN ÇEŞİTLİ DEĞİŞKENLER AÇISINDAN İNCELENMESİ," *The Journal of International Lingual Social and Educational Sciences* 3, no. 2 (2017): 269–287.
- [86] K. Kaymaz, U. Eroğlu, and Y. Sayılar, "Effect of Loneliness at Work on the Employees' Intention to Leave," *ISGUC the Journal of Industrial Relations and Human Resources* 16, no. 1 (2014): 38–53, <https://doi.org/10.4026/1303-2860.2014.0241>.
- [87] A. Keser and M. Karaduman, "The Correlation between Loneliness at Work-Life and Organizational Citizenship and a Research on Teachers," *HAK-İŞ International Journal of Labour and Society* 3, no. 7 (2014): 178–197.
- [88] J. Yanguas, S. Pinazo-Henandis, and F. J. Tarazona-Santabalbina, "The Complexity of Loneliness," *Acta BioMedica: Atenei Parmensis* 89, no. 2 (2018): 302–314, <https://doi.org/10.23750/abm.v89i2.7404>.
- [89] W. H. Organization, *Public Spending on Health: A Closer Look at Global Trends* (World Health Organization, 2018).
- [90] J. T. Cacioppo and S. Cacioppo, "The Growing Problem of Loneliness," *The Lancet* 391, no. 10119 (2018): 426, [https://doi.org/10.1016/s0140-6736\(18\)30142-9](https://doi.org/10.1016/s0140-6736(18)30142-9).
- [91] B. d'Hombres, M. Barjaková, and S. V. Schnepf, "Loneliness and Social Isolation: an Unequally Shared Burden in Europe" (2021).
- [92] C. S. Kung, J. S. Kunz, and M. A. Shields, "Economic Aspects of Loneliness in Australia," *The Australian Economic Review* 54, no. 1 (2021): 147–163, <https://doi.org/10.1111/1467-8462.12414>.
- [93] D. McDaid, A. Bauer, and A.-L. Park, *Making the Economic Case for Investing in Actions to Prevent And/or Tackle Loneliness: A Systematic Review* (London School of Economics and Political Science, 2017).
- [94] R. Jaspal and G. M. Breakwell, "Socio-economic Inequalities in Social Network, Loneliness and Mental Health during the COVID-19 Pandemic," *International Journal of Social Psychiatry* 68, no. 1 (2022): 155–165, <https://doi.org/10.1177/0020764020976694>.
- [95] L. Bao, W. T. Li, and B. L. Zhong, "Feelings of Loneliness and Mental Health Needs and Services Utilization Among Chinese Residents during the COVID-19 Epidemic," *Globalization and Health* 17, no. 1 (2021): 51, <https://doi.org/10.1186/s12992-021-00704-5>.
- [96] H. Wang, E. Zhao, J. Fleming, T. Denning, K. T. Khaw, and C. Brayne, "Is Loneliness Associated with Increased Health and Social Care Utilisation in the Oldest Old? Findings from a Population-Based Longitudinal Study," *BMJ Open* 9, no. 5 (2019): e024645, <https://doi.org/10.1136/bmjopen-2018-024645>.
- [97] S. S. Chesak, A. Bhagra, S. Cutshall, et al., "Authentic Connections Groups: a Pilot Test of an Intervention Aimed at Enhancing Resilience Among Nurse Leader Mothers," *Worldviews on Evidence-Based Nursing* 17, no. 1 (2020): 39–48, <https://doi.org/10.1111/wvn.12420>.
- [98] P. Anand and S. K. Mishra, "Linking Core Self-Evaluation and Emotional Exhaustion with Workplace Loneliness: Does High LMX Make the Consequence Worse?" *International Journal of Human Resource Management* 32, no. 10 (2021): 2124–2149, <https://doi.org/10.1080/09585192.2019.1570308>.
- [99] E. Ergin, D. Yildirim, C. Ç Yildiz, and S. Y. Usenmez, "The Relationship of Death Anxiety with Loneliness and Psychological Well-Being in the Elderly Living in a Nursing Home," *OMEGA-Journal of Death and Dying*. (2022): 00302228221106054.
- [100] K. Haller, W. Berends, and P. Skillin, "ORGANIZATIONAL CULTURE AND NURSING PRACTICE: THE MAGNET RECOGNITION PROGRAM® AS A FRAMEWORK FOR POSITIVE CHANGE," *Revista Médica Clínica Las Condes* 29, no. 3 (2018): 328–335, <https://doi.org/10.1016/j.rmcl.2018.03.005>.
- [101] D. E. Harhash, H. Ael shrief, and M. Z. Ahmed, "The Relationship between Healthcare Organizational Culture and Nurses' Empowerment," *International Journal of Studies in Nursing* 6, no. 4 (2021): 87, <https://doi.org/10.20849/ijsn.v6i4.975>.
- [102] F. Farouk Kamel and M. Aref, "Staff Nurses Perception toward Organizational Culture and its Relation to Innovative

- Work Behavior at Critical Care Units,” *American Journal of Nursing Science* 6, no. 3 (2017): 251–260, <https://doi.org/10.11648/j.ajns.20170603.23>.
- [103] T. Kumra, Y.-J. Hsu, T. L. Cheng, J. A. Marsteller, M. McGuire, and L. A. Cooper, “The Association between Organizational Cultural Competence and Teamwork Climate in a Network of Primary Care Practices,” *Health Care Management Review* 45, no. 2 (2020): 106–116, <https://doi.org/10.1097/hmr.000000000000205>.
- [104] R. Weech-Maldonado, A. Ghiasi, G. K. Davlyatov, J. C. Lord, and K. Rondeau, “Human Resource Management Practices, Organizational Culture, and Nurse Staffing Turnover,” *Innovation in Aging* 3, no. Supplement_1 (2019): S743–S744, <https://doi.org/10.1093/geroni/igz038.2724>.
- [105] S. Nakrem, “Understanding Organizational and Cultural Premises for Quality of Care in Nursing Homes: an Ethnographic Study,” *BMC Health Services Research* 15, no. 1 (2015): 508–513, <https://doi.org/10.1186/s12913-015-1171-y>.
- [106] A. H. Elewa and S. H. A. El Banan, “Organizational Culture, Organizational Trust and Workplace Bullying Among Staff Nurses at Public and Private Hospitals,” *International Journal of Nursing Didactics* 9, no. 04 (2019): 10–20.
- [107] E. Çaylak and S. Altuntas, “Organizational Silence Among Nurses: The Impact on Organizational Cynicism and Intention to Leave Work,” *Journal of Nursing Research* 25, no. 2 (2017): 90–98, <https://doi.org/10.1097/jnr.0000000000000139>.
- [108] G. Mallika and V. T. Das, “Impact of Stress on Working Performance of Nurses and Organizational Effectiveness in Hospitals,” *Asian Journal of Management* 11, no. 3 (2020): 225–232, <https://doi.org/10.5958/2321-5763.2020.00035.9>.
- [109] R. Rawah and M. Banakhar, “The Relationship between Empowerment and Organizational Commitment from Nurse’s Perspective in the Ministry of Health Hospitals,” *Healthcare* 10, no. 4 (2022): 664, <https://doi.org/10.3390/healthcare10040664>.
- [110] R. Jacobs, R. Mannion, H. T. Davies, S. Harrison, F. Konteh, and K. Walshe, “The Relationship between Organizational Culture and Performance in Acute Hospitals,” *Social Science & Medicine* 76 (2013): 115–125, <https://doi.org/10.1016/j.socscimed.2012.10.014>.
- [111] M. A. P. Dinis, H. F. P. Sousa, Ad Moura, L. M. Viterbo, and R. J. Pinto, “Health Behaviors as a Mediator of the Association between Interpersonal Relationships and Physical Health in a Workplace Context,” *International Journal of Environmental Research and Public Health* 16, no. 13 (2019): 2392, <https://doi.org/10.3390/ijerph16132392>.
- [112] A. C. Troth, S. A. Lawrence, P. J. Jordan, and N. M. Ashkanasy, “Interpersonal Emotion Regulation in the Workplace: A Conceptual and Operational Review and Future Research Agenda,” *International Journal of Management Reviews* 20, no. 2 (2018): 523–543, <https://doi.org/10.1111/ijmr.12144>.
- [113] J. D. Mackey, C. P. McAllister, B. P. Ellen, III, and J. E. Carson, “A Meta-Analysis of Interpersonal and Organizational Workplace Deviance Research,” *Journal of Management* 47, no. 3 (2021): 597–622, <https://doi.org/10.1177/0149206319862612>.
- [114] E. A. A. Hashish, “Nurses’ Perception of Organizational Justice and its Relationship to Their Workplace Deviance,” *Nursing Ethics* 27, no. 1 (2020): 273–288, <https://doi.org/10.1177/0969733019834978>.
- [115] L. J. Labrague, “Psychological Resilience, Coping Behaviours and Social Support Among Health Care Workers during the COVID-19 Pandemic: A Systematic Review of Quantitative Studies,” *Journal of Nursing Management* 29, no. 7 (2021): 1893–1905, <https://doi.org/10.1111/jonm.13336>.
- [116] X. Duan, X. Ni, L. Shi, et al., “The Impact of Workplace Violence on Job Satisfaction, Job Burnout, and Turnover Intention: the Mediating Role of Social Support,” *Health and Quality of Life Outcomes* 17, no. 1 (2019): 93–10, <https://doi.org/10.1186/s12955-019-1164-3>.
- [117] L. Wang, H. Tao, B. J. Bowers, R. Brown, and Y. Zhang, “Influence of Social Support and Self-Efficacy on Resilience of Early Career Registered Nurses,” *Western Journal of Nursing Research* 40, no. 5 (2018): 648–664, <https://doi.org/10.1177/0193945916685712>.
- [118] L. J. Labrague, J. A. A. De los Santos, and C. Falguera, *Social and Emotional Loneliness Among College Students during the COVID-19 Pandemic: The Predictive Role of Coping Behaviours, Social Support, and Personal Resilience* (2021).
- [119] S. Ofei-Dodoo, C. Ebberwein, and R. Kellerman, “Assessing Loneliness and Other Types of Emotional Distress Among Practicing Physicians,” *Kansas journal of medicine* 13 (2020): 1–5, <https://doi.org/10.17161/kjm.v13i1.13394>.
- [120] D. E. Eagle, C. F. Hybels, and R. J. Proeschold-Bell, “Perceived Social Support, Received Social Support, and Depression Among Clergy,” *Journal of Social and Personal Relationships* 36, no. 7 (2019): 2055–2073, <https://doi.org/10.1177/0265407518776134>.
- [121] T. Walz, J. M. Kensbock, S. B. de Jong, and F. Kunze, “Lonely@ Work@ Home? the Impact of Work/home Demands and Support on Workplace Loneliness during Remote Work,” *European Management Journal* 42, no. 5 (2024): 767–778, <https://doi.org/10.1016/j.emj.2023.05.001>.
- [122] A. Orgambidez-Ramos and H. de Almeida, “Work Engagement, Social Support, and Job Satisfaction in Portuguese Nursing Staff: A Winning Combination,” *Applied Nursing Research* 36 (2017): 37–41, <https://doi.org/10.1016/j.apnr.2017.05.012>.
- [123] L. C. Chu, “Impact of Providing Compassion on Job Performance and Mental Health: The Moderating Effect of Interpersonal Relationship Quality,” *Journal of Nursing Scholarship* 49, no. 4 (2017): 456–465, <https://doi.org/10.1111/jnu.12307>.
- [124] Y. Liu and Y. Aunguroch, “Work Stress, Perceived Social Support, Self-efficacy and Burnout Among Chinese Registered Nurses,” *Journal of Nursing Management* 27, no. 7 (2019): 1445–1453, <https://doi.org/10.1111/jonm.12828>.
- [125] E. J. Brennan, “Towards Resilience and Wellbeing in Nurses,” *British Journal of Nursing* 26, no. 1 (2017): 43–47, <https://doi.org/10.12968/bjon.2017.26.1.43>.
- [126] M. Mealer, D. Conrad, J. Evans, et al., “Feasibility and Acceptability of a Resilience Training Program for Intensive Care Unit Nurses,” *American Journal of Critical Care* 23, no. 6 (2014): e97–e105, <https://doi.org/10.4037/ajcc2014747>.
- [127] D. Villani, A. Grassi, C. Cagnetta, D. Toniolo, P. Cipresso, and G. Riva, “Self-help Stress Management Training through Mobile Phones: an Experience with Oncology Nurses,” *Psychological Services* 10, no. 3 (2013): 315–322, <https://doi.org/10.1037/a0026459>.
- [128] D. Beebe, J. J. Chang, K. Kress, and M. Mattfeldt-Beman, “Diet Quality and Sleep Quality Among Day and Night Shift Nurses,” *Journal of Nursing Management* 25, no. 7 (2017): 549–557, <https://doi.org/10.1111/jonm.12492>.
- [129] L. Huang, W. Lei, F. Xu, H. Liu, and L. Yu, “Emotional Responses and Coping Strategies in Nurses and Nursing Students during Covid-19 Outbreak: A Comparative Study,”

- PLoS One* 15, no. 8 (2020): e0237303, <https://doi.org/10.1371/journal.pone.0237303>.
- [130] N. J. Bush, ed., *Compassion Fatigue: Are You at Risk? Oncology Nursing Forum* (Oncology Nursing Society, 2009).
- [131] C. M. Masi, H.-Y. Chen, L. C. Hawkey, and J. T. Cacioppo, "A Meta-Analysis of Interventions to Reduce Loneliness," *Personality and Social Psychology Review* 15, no. 3 (2011): 219–266, <https://doi.org/10.1177/1088868310377394>.
- [132] R. J. Jarden, A. Jarden, T. J. Weiland, et al., "New Graduate Nurse Wellbeing, Work Wellbeing and Mental Health: A Quantitative Systematic Review," *International Journal of Nursing Studies* 121 (2021): 103997, <https://doi.org/10.1016/j.ijnurstu.2021.103997>.
- [133] N. Lau, A. O'Daffer, S. Colt, et al., "Android and iPhone Mobile Apps for Psychosocial Wellness and Stress Management: Systematic Search in App Stores and Literature Review," *JMIR mHealth and uHealth* 8, no. 5 (2020): e17798, <https://doi.org/10.2196/17798>.
- [134] S. Gupta, M. Kumar, A. R. Rozatkar, et al., "Feasibility and Effectiveness of Telecounseling on the Psychological Problems of Frontline Healthcare Workers amidst COVID-19: a Randomized Controlled Trial from Central India," *Indian Journal of Psychological Medicine* 43, no. 4 (2021): 343–350, <https://doi.org/10.1177/02537176211024537>.
- [135] D. Ekers, K. Lovell, and D. Richards, "How Tele-Therapy Can Improve Access," *Mental Health Nursing* 22 (2002).
- [136] S. Sha, K. Loveys, P. Qualter, H. Shi, D. Krpan, and M. Galizzi, "Efficacy of Relational Agents for Loneliness across Age Groups: a Systematic Review and Meta-Analysis," *BMC Public Health* 24, no. 1 (2024): 1802, <https://doi.org/10.1186/s12889-024-19153-x>.
- [137] L. A. Duffner, N. Janssen, K. Deckers, et al., "Facing the Next Geriatric Giant-A Systematic Literature Review and Meta-Analysis of Interventions Tackling Loneliness and Social Isolation Among Older Adults," *Journal of the American Medical Directors Association* 25, no. 9 (2024): 105110, <https://doi.org/10.1016/j.jamda.2024.105110>.
- [138] P. G. Shekelle, I. M. Miake-Lye, M. M. Begashaw, et al., "Interventions to Reduce Loneliness in Community-Living Older Adults: a Systematic Review and Meta-Analysis," *Journal of General Internal Medicine* 39, no. 6 (2024): 1015–1028, <https://doi.org/10.1007/s11606-023-08517-5>.