The Silent Weight of Workplace Loneliness: The Mediating Role of Psychological Resilience in Emotional Exhaustion[1]

İşyerinde Yalnızlığın Sessiz Ağırlığı: Duygusal Tükenmede Psikolojik Dayanıklılığın Aracı Rolü

Hüseyin Tolga Çağatay(*)
Yüksel Demirel(**)
Ayla Karaduman(***)

Abstract

Workplace loneliness has gained increasing attention as a psychosocial risk factor, particularly in emotionally demanding professions such as healthcare. While prior studies have explored its impact on mental health, little is known about its specific effect on emotional exhaustion among health technicians, especially those working in solitary roles like radiology and laboratory technologists. This study aims to examine the mediating role of psychological resilience in the relationship between workplace loneliness and work-related emotional exhaustion. A cross-sectional study was conducted between December 2024 and January 2025 involving 406 radiology and laboratory technologists employed in public and private healthcare institutions in Ankara, Türkiye. Validated scales were used to assess workplace loneliness, emotional exhaustion, and psychological resilience. Data were analyzed using SPSS 26.0 and AMOS 24.0 for confirmatory factor analysis. Hayes' PROCESS Macro (Model 4) with 5000 bootstrap resampling was applied to test the mediation model. Workplace loneliness was found to be positively correlated with emotional exhaustion and negatively correlated with psychological resilience. Psychological resilience, in turn, was negatively associ-

1 Ethical approval was obtained from Başkent University Social and Human Sciences Research Board (Date: 25/11/2024, Decision No: 17162298.600-272).

(*) Corresponding Author / Sorumlu Yazar, Başkent University, Vocational School of Health Services, Department of Medical Services and Techniques, Ankara, Türkiye, tcagatay@baskent.edu.tr, ORCID: 0000-0001-5228-3223

(**) Başkent University, Vocational School of Health Services, Department of Medical Services and Techniques, Ankara, Türkiye, ydemirel@baskent.edu.tr, ORCID: 0000-0002-2011-4481

(***) Başkent University, Vocational School of Health Services, Program of Medical Imaging Techniques, Ankara, Türkiye, aylakaraduman@baskent.edu.tr, ORCID: 0009-0003-1958-1642

Çağatay, H. T., Demirel, Y, & Karaduman, A. (2026). The Silent Weight of Workplace Loneliness: The Mediating Role of Psychological Resilience in Emotional Exhaustion. ***Journal of Management & Organization Studies***, 11(1), 1-31. DOI: 10.71350/yoad.11.1.001

Makale Türü : Araştırma Makalesi
Başvuru Tarihi : 26.05.2025
Kabul Tarihi : 15.12.2025

Article Type : Research Article
Received : 26.05.2025
Accepted : 15.12.2025

ated with emotional exhaustion and significantly mediated the relationship between loneliness and exhaustion. Findings highlight that workplace loneliness significantly contributes to emotional exhaustion by undermining psychological resilience. These results underscore the need for workplace interventions that not only reduce feelings of loneliness but also enhance individual coping mechanisms.

Keywords: Workplace Loneliness, Emotional Exhaustion, Psychological Resilience, Resilience-Based Intervention, Healthcare Technical Staff

Özet

İşyerinde yalnızlık, özellikle sağlık hizmetleri gibi duygusal açıdan zorlayıcı mesleklerde psikososyal bir risk faktörü olarak giderek daha fazla dikkat çekmektedir. Önceki çalışmalar ruh sağlığı üzerindeki etkisini araştırmış olsa da, özellikle radyoloji ve laboratuvar teknologları gibi yalnız rollerde çalışan sağlık teknisyenleri arasında duygusal tükenme üzerindeki spesifik etkisi hakkında çok az şey bilinmektedir. Bu çalışma, işyerinde yalnızlık ve işle ilgili duygusal tükenme arasındaki ilişkide psikolojik dayanıklılığın aracı rolünü incelemeyi amaçlamaktadır. Aralık 2024 ve Ocak 2025 tarihleri arasında Ankara'daki kamu ve özel sağlık kurumlarında çalışan 406 tıbbi görüntüleme ve laboratuvar teknikeri ile kesitsel bir çalışma yürütülmüştür. İş yerinde yalnızlık, duygusal tükenme ve psikolojik dayanıklılığı değerlendirmek için geçerliliği kanıtlanmış ölçekler kullanılmıştır. Veriler SPSS 26.0 ve doğrulayıcı faktör analizi için AMOS 24.0 kullanılarak analiz edilmiştir. Aracılık modelini test etmek için 5000 bootstrap yeniden örneklemeli Hayes'in PROCESS Makrosu (Model 4) uygulanmıştır. İşyeri yalnızlığının duygusal tükenme ile pozitif ve psikolojik dayanıklılık ile negatif ilişkili olduğu bulunmuştur. Psikolojik dayanıklılık ise duygusal tükenme ile negatif ilişkili bulunmuş ve yalnızlık ile tükenme arasındaki ilişkiye önemli ölçüde aracılık etmiştir. Bulgular, işyerinde yalnızlığın psikolojik dayanıklılığı zayıflatarak duygusal tükenmeye önemli ölçüde katkıda bulunduğunu vurgulamaktadır. Bu sonuçlar, hem yalnızlık duygularını azaltan hem de bireysel başa çıkma mekanizmalarını geliştiren işyeri müdahalelerine duyulan ihtiyacın altını çizmektedir.

Anahtar Kelimeler: İş Yeri Yalnızlığı, Duygusal Tükenmişlik, Psikolojik Sağlamlık, Dayanıklılık Temelli Müdahale, Sağlık Teknik Personeli

Introduction

Loneliness is defined as a subjective feeling of distress that occurs when an individual's social connections do not meet their expectations in terms of quantity or quality (Hawkley & Cacioppo, 2010). This concept refers to an uncomfortable and subjective experience that results from differences between an individual's actual and ideal social environments. In the context of the workplace, loneliness occurs when an individual fails to establish the interpersonal relationships he/

she expects and fails to overcome this deficiency (Wright, 2005). Accordingly, workplace loneliness can be defined as emotional deprivation and a lack of social connection due to the individual's inability to establish meaningful social relationships with colleagues (Sîrbu & Dumbravă, 2019). Workplace loneliness differs from the general concept of loneliness and occurs even when individuals are able to maintain healthy and strong social relationships in their private lives, but are unable to develop such relationships in the work environment (Wright, 2009). Theoretically, the Job Demands–Resources (JD-R) framework posits that burnout increases when personal and job resources are depleted in the face of high job demands. Self-Determination Theory emphasizes that well-being declines when basic psychological needs (relatedness, competence, autonomy) are not met. Together, these two perspectives provide a compelling explanation for how loneliness, by undermining the need for "relatedness", can trigger the burnout process (Bakker & Demerouti, 2017; Van den Broeck, Ferris, Chang, & Rosen., 2016).

Workplace loneliness can negatively affect an individual's emotional well-being and lead to various physical and psychological health problems, such as depression, anxiety, and even cardiovascular disease (Sullivan & Bendell, 2023). Additionally, it can have negative consequences at both the individual and organizational levels by reducing the professional functioning of employees (Firoz & Chaudhary, 2022). This is particularly critical for a certain group of individuals working in the healthcare sector. Healthcare workers providing imaging and laboratory services play an important role in diagnosing and monitoring diseases, but the nature of their work often requires them to work alone or with limited social interaction, a factor that contributes to increased feelings of loneliness in the workplace. While empirical studies on these occupational groups are limited in the literature, existing evidence suggests that workplace loneliness is common among healthcare workers and directly related to emotional exhaustion (Meese, Boilet, Sweeney, & Rogers, 2024; Wood, Brown, & Kinser, 2022). Moreover, recent reviews and field studies report elevated burnout among radiologists/radiographers, widespread "lone working" among MRI technologists, and the salience of working hours/operational constraints as key determinants (Alghamdi et al., 2023; Ashraf et al., 2023; Gransjøen, 2024). Together, these findings suggest that imaging and laboratory personnel constitute a subgroup with a distinctive risk profile along the loneliness–emotional exhaustion axis. Recent evidence also shows that structural factors, such as shift work, working alone, irregular sleep

patterns, and increased workload in radiology and laboratory settings, weaken well-being and increase the risk of burnout (Elliott et al., 2024; Ismail, Shiner, & Tucker, 2024).

Emotional exhaustion is a condition commonly observed among healthcare workers, which can negatively impact both individuals' professional performance and the quality of patient care. Burnout reduces an individual's capacity to fulfil their professional role, posing risks to patient safety and the quality of care. Recent comprehensive reviews report that burnout among healthcare workers may be associated with a decline in patient-centered care, impaired communication, and potential safety issues (Garcia et al., 2019; Nagle, Griskevica, Rajevska, Ivanovs, Mihailova, & Skruzkalne, 2024). Employees who are unable to establish healthy social relationships at work, feel isolated, and cannot develop a sense of belonging are more vulnerable to burnout (Heider, 2021). Psychological resilience is defined as an individual's capacity to adapt to stressful life events and is considered a protective factor in the relationship between workplace loneliness and emotional exhaustion (Duncan, 2020). Healthcare workers with high resilience levels tend to have relatively lower burnout levels; however, even high resilience scores may not be sufficient on their own in the face of systemic demands. Therefore, increased organizational support and social connectedness should be considered alongside strengthening individual resilience (Denckla et al., 2020; West et al., 2020).

This study primarily aims to examine the impact of workplace loneliness on the emotional exhaustion of healthcare personnel in imaging and laboratory services, considering the potential mediating role of psychological resilience. It aims to contribute to the literature in three ways: First, it enhances the theoretical clarity by investigating how the loneliness-burnout relationship functions through the mechanism of psychological resilience, which is often overlooked in technician samples. Second, it fills a gap in the literature that has primarily focused on doctors and nurses by presenting findings specific to laboratory and imaging staff, where structural isolation is more pronounced. Third, it guides the design of evidence-based interventions that strengthen internal social bonds and support individual resilience. This focus and approach differentiate the study from existing literature by providing actionable insights for policy and practice in a critical yet understudied subfield of healthcare.

Literature Review

This section reviews three core constructs: workplace loneliness, work-related emotional exhaustion, and psychological resilience. We first outline how workplace loneliness may emerge in healthcare and why imaging and laboratory staff can be structurally exposed to it. We then synthesize evidence linking workplace loneliness to emotional exhaustion and develop Hypothesis 1. Next, we discuss psychological resilience as a personal resource and develop Hypotheses 2 and 3. Finally, we integrate theoretical and empirical work to justify the proposed mediation pathway and introduce Hypothesis 4.

Workplace Loneliness

In line with this structure, loneliness at work is defined as a subjective experience that results from an individual's inability to form meaningful social relationships or the inadequacy of existing social ties (Ozcelik & Barsade, 2018; Wright, Burt, & Strongman, 2006). This concept typically comprises two main components: emotional loneliness and social loneliness. Emotional loneliness refers to an individual's lack of close, quality relationships, whereas social loneliness refers to the absence of casual or superficial relationships in which one can share one's interests (Wax, Deutsch, Lindner, Lindner, & Hopmeyer, 2022).

Healthcare is generally regarded as a people-oriented field with a dynamic work environment that requires teamwork. Healthcare workers are in constant interaction with patients and colleagues, and this seems to provide a structure that encourages the formation of social bonds at work (Cunningham, Ranmuthugala, Plumb, Georgiou, Westbrook, & Braithwaite, 2012). However, contrary to this view, healthcare workers are in a work environment that is prone to loneliness due to many factors, such as intense working hours, time pressure, shift system, high workload, error-proofing of diagnostic and treatment processes, professional competition, and academic expectations (Choudhary, Jena, & Patre, 2024; Wright & Silard, 2020).

The COVID-19 pandemic was a critical turning point that made the loneliness experienced by healthcare staff at work more visible. Although research on this topic was limited before the pandemic, with the increase in social isolation and the intensification of psychosocial stress, loneliness has become an increasingly salient problem for these workers (Ernst et al., 2022; Kolcz, Ferrand, Young, O'Sullivan, & Robinson, 2023; Meese et al., 2024). However, workplace

loneliness in healthcare is not a temporary situation limited to the pandemic. For some groups of health professionals, it remains a permanent reality stemming from the profession's structural and organizational characteristics. In this context, healthcare professionals, especially those working in imaging and laboratory services, are more exposed to loneliness in the workplace due to factors such as limited patient interaction, individual work assignments, and isolation caused by the shift system. This type of loneliness is not just physical separation. Over time, it can develop into a deeper problem that negatively impacts an individual's psychological well-being, mental health, and job satisfaction. Studies have shown that the level of loneliness in these professional groups is directly related to emotional exhaustion, which in turn reflects negatively on the overall quality of health services (Chinene, Mudadi, Mutandiro, Mushosho, & Matika, 2023; Ishaky, Sivanthan, Nowrouzi-Kia, Papadopoulos, & Gohar, 2023). Therefore, the need for new and interdisciplinary research that comprehensively addresses the structural causes and individual consequences of loneliness in the health care sector becomes increasingly apparent.

Work-Related Emotional Exhaustion

Maslach (1978) defines burnout in three sub-dimensions: emotional exhaustion, depersonalization, and decline in personal accomplishment. Emotional exhaustion is a psychological state defined by intense fatigue and exhaustion that occurs as a result of the depletion of an individual's physical and psychological resources due to factors such as excessive workload, intense emotional demands and constant stress (Jackson & Schuler, 1983; Maslach & Jackson, 1981). Within this structure, emotional exhaustion is accepted as the starting point and the most common symptom of the process, paving the way for other negative consequences. Healthcare professionals are particularly vulnerable to burnout owing to the high levels of responsibility, the intensity of emotional labor, and direct contact with human life. Burnout is argued to have serious consequences for both individual health and the quality of services (López-Cabarcos, López-Carballeira, & Ferro-Soto, 2021).

The relationship between loneliness at work and emotional exhaustion has been demonstrated by an increasing number of studies in recent years. In particular, the weakening of social ties and the lack of interpersonal interaction reduce employees' psychological resilience and increase their emotional exhaustion (Anand & Mishra, 2021; Seppala & King, 2017). Emotional exhaustion

reduces employees' ability to cope with the emotional demands of the workplace, and over time can lead to serious harm at both physical and psychological levels (Nikolova, Van Dam, Van Ruysseveldt, & De Witte, 2019).

Self-determination theory (SDT) offers a functional framework for understanding the relationship between workplace loneliness and emotional exhaustion. SDT suggests that individuals have three basic needs for psychological well-being, i.e., competence, relatedness, and autonomy, and that unmet needs can lead to negative outcomes, such as burnout (Seppala & King, 2017). In this context, lack of social support and high job demands have been shown to be positively correlated with the emotional exhaustion dimension of burnout (Bakker, Demerouti, & Verbeke, 2004).

Studies conducted in the healthcare context also support this relationship. Loneliness has a significant effect on job stress and burnout among healthcare workers (Ofei-Dodoo, Ebberwein, & Kellerman, 2020). Similarly, a study conducted among nurses found a significant relationship between loneliness and emotional exhaustion (Phillips, 2021). Research conducted in various sectors reports that loneliness in the workplace increases employees' emotional exhaustion (Jung, Jung, & Yoon, 2022). Therefore, the first hypothesis of this study is:

H1: Workplace loneliness increases work-related emotional exhaustion.

Psychological Resilience

Psychological resilience refers to an individual's ability to adapt to stressful life events, recover from challenging conditions, and maintain emotional balance (Southwick, Bonanno, Masten, Panter-Brick, & Yehuda, 2014). One of the most comprehensive studies of this concept in the literature was developed by Kobasa (2013). Kobasa (2013) defines psychological resilience as having three main components: the level of commitment to oneself and one's work, the belief in having control over the outcomes of one's experiences, and the tendency to challenge environmental changes.

Psychological resilience is defined as an individual's ability to recover quickly or cope effectively in the face of a significant source of stress (Smith, Tooley, Christopher, & Kay, 2010). Psychological resilience is not only an indicator of individual resilience; it also yields important positive outcomes, such as establishing healthy relationships with the social environment, receiving peer support,

and being more successful in social interactions. It can be argued that individuals who are exposed to workplace loneliness and experience emotional exhaustion caused by this loneliness may be able to overcome these challenging processes more quickly and with less damage if they have high levels of psychological resilience. Indeed, research shows that the level of psychological resilience is directly related to the reduction of burnout symptoms, such as emotional exhaustion (Klaver, van den Hoofdakker, Wouters, de Kuijper, Hoekstra, & de Bildt, 2021; West et al., 2020). A higher capacity for psychological resilience, which is important for maintaining a healthy daily life, is also of great importance in business life. Employees, especially health professionals who work under intense stress, need a high level of psychological resilience to maintain their professional success and productivity (Kunzler et al., 2020). However, loneliness in the workplace can negatively affect an individual's psychological resilience. Emotional experiences, such as a lack of social support, a reduced sense of belonging, and high levels of emotional isolation, can weaken an individual's ability to cope with stress. Accordingly, the following hypothesis is developed:

H2: Workplace loneliness decreases psychological resilience.

High demands, role conflict, time pressure, and emotional distress encountered in business life increase the risk of burnout among employees. However, individuals with high levels of psychological resilience may respond with more robust behaviors to such stressors and be less affected by symptoms of emotional exhaustion (Kutluturkan, Sozeri, Uysal, & Bay, 2016). Psychological resilience is recognized as a protective factor in high-stress occupational groups, such as healthcare. Individuals with high psychological resilience tend to evaluate challenging conditions as manageable and controllable rather than as threats (Lyng et al., 2022). Such an approach reduces the effects of work-related emotional exhaustion and helps individuals maintain better psychological well-being. Thus the following hypothesis:

H3: Psychological resilience reduces work-related emotional exhaustion.

Workplace loneliness is a negative experience characterized by an individual's inability to establish sufficient social ties in the work environment, a sense of not belonging, and feelings of exclusion. This situation, together with the unmet basic psychological needs of the individual, paves the way for an increase in stress levels and the emergence of negative consequences, such as emotional exhaustion. However, the impact of this process on the individual can vary depending on

their internal resources and coping skills. Psychological resilience is expected to play a critical role as a protective factor in mitigating the negative effects of workplace loneliness and coping with challenging situations. Moreover, individuals who experience loneliness at work but have high levels of psychological resilience may view this loneliness not as a threatening factor but as a temporary situation that can be overcome. Therefore, they may be better equipped to maintain their emotional balance and prevent the experience of loneliness from leading to emotional exhaustion. According to the Conservation of Resources (COR) theory, loneliness signifies the depletion of relational resources. Psychological resilience is a theoretical mediating mechanism that serves as a personal resource, facilitating replenishment and breaking the cycle of loss (Hobfoll, Halbesleben, Neveu, & Westman, 2018).

Indeed, studies have shown that psychological resilience acts as a mediator between stressful life events and emotional outcomes. For example, Ng & Lee (2020) state that psychological resilience mediates the relationship between loneliness and depression. Similarly, Lara-Cabrera, Betancort, Muñoz-Rubilar, Rodríguez Novo, & De las Cuevas (2021) emphasize that psychological resilience plays a protective role in the relationship between perceived stressors and emotional disorders. Recent studies focusing on healthcare workers have also demonstrated the mediating/protective effects of psychological resilience in the relationship between stress/anxiety and well-being in the context of the COVID-19 pandemic (Di Giuseppe et al., 2021). For nurses, the mediating role of psychological resilience in the relationship between "loneliness at work" and compassion fatigue has recently been confirmed (Kiratli & Duran, 2024). This finding provides strong parallels suggesting that resilience may have a "buffer" effect in the evolution of loneliness into emotional exhaustion. Furthermore, psychological resilience has been reported to partially mediate the relationship between workplace violence and job stress among healthcare workers (Bayram Değer, Çifçi, & Kaçan, 2025). These findings suggest that resilience can be a systematic transition variable in the effects of stressors leading to burnout in the healthcare context.

Based on prior theoretical and empirical evidence, especially in laboratory and imaging units where structural loneliness is more pronounced, it is theoretically and practically justified to test whether psychological resilience mediates the relationship between workplace loneliness and work-related emotional exhaustion (Di Giuseppe et al., 2021; Hobfoll et al., 2018; Lara-Cabrera et al., 2021; Ng & Lee, 2020). Therefore, the following hypothesis is proposed:

H4: Psychological resilience is a mediator between workplace loneliness and work-related emotional exhaustion.

The proposed mediation model is presented in Figure 1.

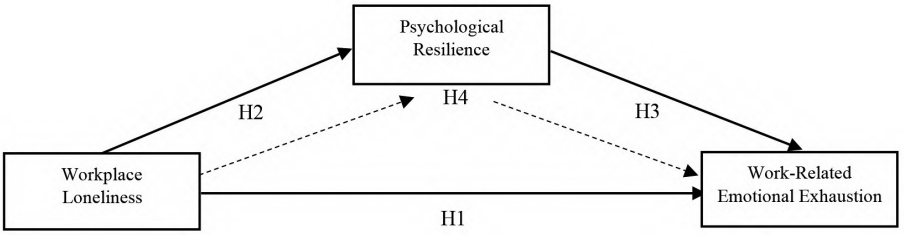

Figure 1. Proposed mediation model

Methodology

Research Instrument and Sample

The sample group of this study consists of healthcare technical personnel working in various public, university, and private health institutions that provide laboratory and imaging services in Ankara, Türkiye. It includes medical imaging and medical laboratory technicians, as well as other healthcare professionals in similar positions.

The work practices of the participants in the study are mainly individual, process/ device-based, and technical application-based. They have limited opportunities for social interaction and communication in the workplace. These characteristics make this group a unique and valuable sample for examining psychosocial variables, such as workplace loneliness, work-related emotional exhaustion, and psychological resilience. The sample was determined using a purposive sampling approach. Individuals directly related to the study's purpose and able to provide relevant data were targeted for participation. The study reached healthcare technical personnel who were actually working in laboratory and imaging services.

Data was collected using an online survey. This method was chosen because of the ease of digital access and the opportunity for broad participation. The survey form was designed for the study's target audience, and its content validity

was evaluated through expert review, specifically by two academics specializing in organizational behavior and health management, as well as two experts specializing in radiology and laboratory services. The experts evaluated each survey item based on coverage, suitability, clarity, alignment with the target group, and the language/discourse used. Based on the feedback received, the questionnaire was deemed suitable for the target audience.

Data was collected from December 2024 to January 2025 through an institutional collaboration with eight healthcare facilities. The survey invitation and link were sent to the target group via internal email lists and digital notice boards by the authorized unit managers of each institution. Thus, the researchers did not have direct access to the participants' personal email addresses. Additionally, the same standard announcement was shared through closed communication channels managed by unit managers (e.g., internal WhatsApp or Telegram announcement groups). Participation was voluntary, the survey was administered anonymously and only once, with no incentives offered. Ultimately, 406 valid responses were obtained and included in the analysis. This sample size was sufficient for the statistical analysis techniques used, supporting the validity and reliability of the findings.

Instruments

The questionnaire used for data collection consists of 4 sections. The first section consists of questions designed to determine the demographic characteristics of the participants. Scales were used in the other sections. Information about these scales is provided below:

Workplace Loneliness Scale

It was developed by Wright et al., (2006) and its adaptation to Turkish and validity and reliability analyses were conducted by Doğan, Çetin, & Sungur (2009) The scale is composed of two subscales. The first 9 items measure "emotional deprivation", and the last 7 items measure the "social friendship" dimension. The scale was prepared according to a 5-point Likert scale. Some items (5, 6, 10, 11, 12, 14, 15 and 16) are reverse-scored. The Cronbach Alpha reliability coefficient calculated for the overall scale was 0.91, while it was 0.87 for emotional deprivation and 0.83 for social friendship.

Work-Related Emotional Exhaustion

The scale, developed by Wharton (1993) and adapted to Turkish by Günay (2021), retains its unidimensional structure as in its original form and consists of six statements. The scale was prepared to evaluate the emotions felt by the participants at work and has a 5-point Likert-type structure ranging from 1 ("I never feel this way at work") to 5 ("I feel this way every day"). In the validity and reliability study conducted by Günay (2021), the Cronbach's Alpha coefficient was found to be 0.90.

Shortened Psychological Resilience Scale

The scale was developed by Smith, Dalen, Wiggins, Tooley, Christopher, & Bernard (2008). It has a unidimensional structure and consists of six statements. Items 2, 4 and 6 are reverse-coded. The scale is a 5-point Likert scale. High scores obtained after reverse coding indicate that the individual has a high level of psychological resilience. The adaptation, validity, and reliability study of the scale into Turkish was conducted by Doğan (2015). Its Cronbach's Alpha coefficient was found to be 0.83, which is sufficiently reliable.

Ethical Considerations

All processes of this study were conducted in accordance with the Declaration of Helsinki, and ethical approval was obtained from Başkent University Social and Human Sciences Research Board (Date: 25/11/2024, Decision No: 17162298.600-272). At the beginning of the survey, participants were provided with an online informed consent form. The form clearly stated the purpose of the study, the principle of voluntary participation, the right to withdraw at any time, and that data would be collected without personally identifiable information. No identifying information was requested, and privacy principles were strictly adhered to in the management and reporting of data.

Data Analysis

The data obtained in the research were analyzed using the SPSS 26.0 program. In addition, Confirmatory Factor Analysis (CFA) was conducted using the AMOS 24.0 program to determine whether the scales used provide measurements compatible with their theoretical constructs. The results obtained from CFA showed that they were compatible with their theoretical constructs and statistically acceptable.

The PROCESS Macro plug-in developed by Hayes (2022) was used to test the hypotheses related to the structural model developed in accordance with the study's primary purpose. The mediation analysis used Hayes' mediation model, Model 4, which tests for direct and indirect effects. This model tests how the effect of the independent variable on the dependent variable is mediated by a mediating variable. The bootstrap method was employed in the analyses, and the reliability level was enhanced with 5,000 replications. The significance of indirect effects was assessed by whether the bootstrap confidence intervals were significant at the 95% level. According to the results, the mediation effect is found to be statistically significant if the indirect effect does not contain a zero value in the confidence interval.

Results

Reliability and Validity of the Measurement

The internal consistency of the scales was assessed using Cronbach's Alpha coefficient. All measurement tools demonstrated a high level of reliability. The Cronbach's Alpha value for the total score of the Workplace Loneliness Scale was calculated as 0.97, indicating that the scale has strong internal consistency. Separate reliability analyses were also performed for the scale's two subscales, Emotional Deprivation and Social Companionship, yielding Cronbach's Alpha values of 0.98 and 0.96, respectively. The Work-Related Emotional Exhaustion Scale also demonstrated high internal consistency (α = 0.95). The Cronbach's Alpha coefficient calculated for the Psychological Resilience Scale was also 0.95, indicating a strong level of reliability. These findings show that all measurement tools used in the study have sufficient internal consistency at both the total scale and subscale levels.

Table 1 shows the results of the goodness-of-fit indices for the study. The χ^2/df values were 3.42 for "Loneliness", 3.18 for "Psychological Resilience", and 1.71 for "Emotional Exhaustion", all within the acceptable limits. The GFI values were 0.90, 0.99, and 0.98, respectively, indicating excellent fit, especially in the dimensions of resilience and emotional exhaustion. The AGFI values were 0.86 for workplace loneliness, 0.94 for psychological resilience, and 0.97 for emotional exhaustion, indicating results at acceptable levels. CFI and NFI values were above 0.95 for all three dimensions, demonstrating a high level of model fit. TLI values were 0.98 and above, showing a perfect fit. The RMSEA value was

0.04 for "Emotional Exhaustion", 0.08 for "Workplace Loneliness", and 0.07 for "Psychological Resilience", which were within acceptable limits. In general, the fit indices obtained signify that the model provides a good fit to the data.

Table 1. Confirmatory Factor Analysis (CFA) Results of the Scales

Fit indices	Perfect values	Acceptable values	Workplace Loneliness	Emotional Exhaustion	Psychological Resilience
χ2/df	$0 \leq \chi^2/df \leq 3$	$3 \leq \chi^2/df \leq 5$	3.42*	1.71**	3.18*
GFI	0.90 ≤ GFI	0.80 ≤ GFI	0.90**	0.99**	0.98**
AGFI	0.90 ≤ AGFI	0.80 ≤ AGFI	0.86*	0.97**	0.94**
CFI	0.95 ≤ CFI	0.85 ≤ CFI	0.98**	0.99**	0.99**
NFI	0.95 ≤ NFI	0.80 ≤ NFI	0.97**	0.99**	0.99**
TLI	0.90 ≤ TLI	0.80 ≤ TLI	0.98**	0.99**	0.99**
RMSEA	0.0 ≤ RMSEA ≤ 0.05	0.06 ≤ RMSEA ≤ 1.0	0.08*	0.04**	0.07*

* Acceptable fit indices, ** Perfect fit indices (Bahar et al., 2022).

Note. χ^2; Chi-square value, df; degrees of freedom, χ^2/df; Normed chi-square, GFI; Goodness of Fit Index, AGFI; Adjusted Goodness of Fit Index, CFI; Comparative Fit Index, NFI; Normed Fit Index, RMSEA; Root Mean Square Error of Approximation.

Participants' Socio-demographic Characteristics

The analysis of the demographic and occupational characteristics of 406 participants (Table 2) yielded the following results: 27.6% (n = 112) were male, and 72.4% (n = 294) were female. Regarding marital status, 42.9% (n = 174) were married, and 57.1% (n = 232) were single. Concerning educational status, 3.7% (n = 15) had a high school diploma, 71.7% (n = 291) had an associate degree, 23.9% (n = 97) had a bachelor's degree, and 0.7% (n = 3) had a postgraduate degree. When participants' living arrangements were assessed, 13.3% (n = 54) lived alone, 81.5% (n = 331) lived with family, and 5.2% (n = 21) lived with friends. When participants' job satisfaction was analyzed, 77.1% (n = 313) reported liking their job, while 22.9% (n = 93) reported disliking it. The mean age was 26.46 ± 7.72 years, with the youngest participant being 20 years old, and the oldest being 52. The mean total number of years worked in the occupation was 8.35 ± 7.74 years, with a range from 1 year to 33 years. The mean number of total years

of employment in the current organization was 5.77 ± 6.24 years, also ranging from 1 to 33 years.

Table 2. Socio-demographic Characteristics (n = 406)

	n	%	M	SD
Gender				
Male	112	27.6		
Female	294	72.4		
Marital Status				
Married	174	42.9		
Single	232	57.1		
Education Status				
High School	15	3.7		
Associate Degree	291	71.7		
Bachelor's degree	97	23.9		
Postgraduate	3	0.7		
Who do you live with?				
Alone	54	13.3		
With family	331	81.5		
With friends	21	5.2		
Do you like your profession?				
Yes	313	77.1		
No	93	22.9		
Age			26.46	7.72
Total years of work in the profession			8.35	7.74
Total years of service in the current institution			5.77	6.24

Note. M: mean, SD: standard deviation

Descriptive Statistics and Correlation Analysis

Descriptive statistics and Pearson correlation analyses were used to determine the relationships between the variables in the study (Table 3). The results revealed a significant and positive relationship between workplace loneliness and work-related emotional exhaustion ($r = 0.542$, $p < 0.01$). This finding indicates that as the workplace loneliness levels increase, emotional exhaustion also rises. The mean score for participants' workplace loneliness was 3.81, with a standard

deviation of 0.84, while they were 3.20 and 0.94 for the work-related emotional exhaustion variable, respectively. Moreover, a negative and statistically significant relationship was found between workplace loneliness and psychological resilience ($r = -0.531$, $p < 0.01$), which meant that the level of psychological resilience decreases as the loneliness level increases. The mean psychological resilience score of the participants was 2.78 and the standard deviation was 1.11. Additionally, a negative and significant relationship was found between job-related emotional exhaustion and psychological resilience ($r = -0.527$, $p < 0.01$). This finding suggests that individuals with high levels of psychological resilience have lower levels of emotional exhaustion.

Table 3. Means, Standard Deviation and Correlation Matrix for Study Variables (n = 406)

Variables	M	SD	1	2	3
1. Workplace loneliness	3.81	0.84	1		
2. Emotional exhaustion	3.20	0.94	0.542*	1	
3. Psychological resilience	2.78	1.11	-0.531*	-0.527*	1

*p<0.01

Note. M: mean, SD: standard deviation.

Testing of Hypothesis

The mediating role of psychological resilience in the relationship between workplace loneliness and emotional exhaustion was examined using Hayes' PROCESS "Model 4" macro (Table 4). In the first model, the direct effect of workplace loneliness on psychological resilience was examined, and workplace loneliness was found to have a statistically significant and negative effect on psychological resilience ($\beta = -0.41$, $SE = 0.04$, $t = -9.16$, $p < 0.001$; 95% CI [-0.49, -0.32]). The model's explained variance was $R^2=0.294$ ($F = 41.677$, $p < 0.001$). In terms of covariates, marital status, living arrangement (alone/not alone), and work enjoyment coefficients were not significant ($p > 0.10$). These findings supported hypothesis H2.

In the second model, the direct effect of workplace loneliness on emotional exhaustion was positive and significant ($\beta = 0.30$, $SE = 0.05$, $t = 5.62$, $p < 0.001$; 95% CI [0.20, 0.41]); the effect of psychological resilience was negative and

significant (β = -0.38, SE = 0.06, t = -6.93, p < 0.001; 95% CI [-0.49, -0.27]). The model explained 38.2% of the variance (R^2 = 0.382; F = 49.392, p < 0.001). Among the covariates, while the coefficient for marital status was marginally positive (β = 0.17, p = 0.072), living arrangement (alone/not alone) and work enjoyment were not significant (p = 0.941 and p = 0.178). These results supported H1 and H3.

In the total effect model, the total effect of workplace loneliness on emotional exhaustion was significant (β = 0.46, SE = 0.05, t = 8.85, p < 0.001; 95% CI [0.36, 0.56]) and R^2 = 0.306 (F = 44.520, p < 0.001). In this model, marital status was positive and significant (β = 0.22, p = 0.028), while the effects of living arrangement and work enjoyment were not significant (p = 0.680 and p = 0.142).

The indirect effect (Workplace Loneliness → Psychological Resilience → Emotional Exhaustion) was positive and statistically significant (effect = 0.16, BootSE = 0.03, BootLLCI = 0.10, BootULCI = 0.23), and the confidence interval did not include zero. This finding indicated that psychological resilience acted as a partial mediator, supporting H4. In other words, workplace loneliness both directly and indirectly increased emotional exhaustion by decreasing psychological resilience. This relationship pattern remained unchanged even when covariates were controlled.

Table 4. Mediation Analysis of Psychological Resilience in the Relationship Between Workplace Loneliness and Emotional Exhaustion

Direct Effect Model						
Predictor	**Outcome = M (Psychological resilience)**					
	β	**SE**	**t**	**p**	**LLCI**	**ULCI**
Constant	4.56	0.17	26.36	0.000	4.22	4.91
Workplace loneliness	-0.41	0.04	-9.16	0.000	-0.49	-0.32
Marital status	-0.13	0.08	-1.51	0.131	-0.29	-0.03
Living arrangement	-0.18	0.12	-1.48	0.140	-0.43	0.06
Work enjoyment	-0.07	0.12	-0.59	0.554	-0.32	0.17
	R^2=0.294; F=41.677; p<0.001					
Direct Effect Model						
Predictor	**Outcome = Y (Emotional exhaustion)**					
	β	**SE**	**t**	**p**	**LLCI**	**ULCI**
Constant	2.73	0.32	8.64	0.000	2.11	3.35
Workplace loneliness	0.30	0.05	5.62	0.000	0.20	0.41
Psychological resilience	-0.38	0.06	-6.93	0.000	-0.49	-0.27
Marital status	0.17	0.09	1.81	0.072	-0.02	0.36
Living arrangement	-0.01	0.14	-0.07	0.941	-0.28	0.26
Work enjoyment	0.18	0.14	1.35	0.178	-0.08	0.45
	R^2=0.382; F=49.392; p<0.001					
Total Effect Model						
Predictor	**Outcome = Y (Emotional exhaustion)**					
	β	**SE**	**t**	**P**	**LLCI**	**ULCI**
Constant	0.99	0.20	4.88	0.000	0.59	1.38
Workplace loneliness	0.46	0.05	8.85	0.000	0.36	0.56
Marital status	0.22	0.10	2.21	0.028	0.02	0.42
Living arrangement	0.06	0.14	0.41	0.680	-0.23	0.34
Work enjoyment	0.21	0.14	1.47	0.142	-0.07	0.49
	R^2=0.306; F=44.520; p<0.001					
Indirect Effect Model						
	Effect		**BootSE**	**BootLLCI**		**BootULCI**
Psychological resilience	0.16		0.03	0.10		0.23

Note. Covariates (dummy coding). Marital status (0 = married, 1 = single), Living arrangement (1 = living alone, 0 = not living alone [with family/friends]), and Work enjoyment (0 = yes, 1 = no)

In summary, as workplace loneliness increases, psychological resilience decreases. The decline in resilience, in turn, increases work-related emotional exhaustion. Psychological resilience acts as a protective buffer in the loneliness–exhaustion relationship and contributes to lower exhaustion levels. The mediating effect is significant (indirect effect = 0.16, BootSE = 0.03, 95% CI [0.10, 0.23]), which can be interpreted as small to medium. In the literature, indirect effects of this magnitude are considered practically significant and can yield valuable results, particularly in terms of intervention programs (Ledgerwood & Shrout, 2011; Rosenthal & Rubin, 1982).

Discussion

This study aims to fill a gap in the extant literature by examining the mediating role of psychological resilience on the relationship between the impact of workplace loneliness and work-related emotional exhaustion in the healthcare sector. The findings show that workplace loneliness is associated with increased levels of work-related emotional exhaustion, where psychological resilience plays a significant mediating role. These results are not only consistent with the findings reported in previous studies but also support the literature emphasizing that a lack of workplace social support and high job demands have a significant effect on exhaustion symptoms (Bakker et al., 2004). Moreover, this study makes an important contribution to the literature by focusing on a unique occupational group, such as technical staff providing imaging and laboratory services in the health sector, who mostly work individually with limited social interactions (Alghamdi et al., 2023; Shematek, 2013). Findings demonstrate that employees who cannot find a favorable health environment at work to establish healthy social relationships and develop a sense of belonging sufficiently are at a higher risk of emotional exhaustion, which is aligned with previous findings (Kaymaz, Eroğlu, & Sayılar, 2014; Uslu, 2021). These results highlight that the experience of workplace loneliness in healthcare can have a profound impact on occupational well-being, pointing to the need to strengthen social support mechanisms at the organizational level.

Within the scope of the first hypothesis, workplace loneliness was found to have a significant and positive effect on work-related emotional exhaustion. This finding is in line with previous studies showing that loneliness is closely related to negative emotional outcomes such as emotional exhaustion, psychological dis-

tress, and stress (Kagan & GreenblattKimron, 2021; Kolcz et al., 2023; Phillips, 2021). Similarly, Khan et al. (2019) emphasized that increased levels of loneliness alleviate the risk of burnout by rapidly depleting employees' emotional resources. Wolters et al. (2023) suggest that socially anxious and lonely individuals are overly alert to social stimuli in their environment, which leads them to perceive social interactions more negatively. This process causes such individuals to avoid social contact, further increasing their loneliness, which in turn leads to an increase in emotional exhaustion levels, accompanied by the depletion of emotional resources. On the other hand, some studies argue that the effect of loneliness on exhaustion may vary according to individual differences, especially the level of perceived social support. For example, Jolly, Kong, & Kim (2021) stated that individuals' experiences of social isolation may produce less or more stress responses depending on the strength of their existing social support networks. This perspective proposes that the loneliness-exhaustion relationship does not always proceed in a direct and uniform manner, and that individual and environmental factors may shape this interaction. In addition, Choudhary et al. (2024) emphasized that low social integration in the work environment may lead to emotional exhaustion by increasing feelings of loneliness. This perspective posits that workplace structures and cultural environments may also play an important role in influencing loneliness and exhaustion levels. Indeed, it has been reported that the negative effects of loneliness are mitigated in environments with a high perception of organizational support, whereas a lack of support perception exacerbates burnout (Stănescu & Romașcanu, 2024). The findings of the current study reveal that loneliness directly threatens individual psychological resilience in high-stress occupations, such as healthcare professionals, and is an important triggering factor in the development of burnout. Accordingly, developing structural and social strategies to combat loneliness in healthcare organizations is crucial for improving employee well-being and reducing exhaustion.

Regarding the second hypothesis, it was found that workplace loneliness has a negative effect on psychological resilience. This finding is consistent with the literature, which advocates that factors such as workplace exclusion, lack of social support, and perceived social isolation trigger feelings of loneliness, depleting individuals' emotional resources and reducing their psychological resilience (Chen & Li, 2020; Nashwan et al., 2024). Loneliness weakens individuals' capacity to cope with stress, making them more vulnerable to environmental stressors. Especially in individuals deprived of social support, the erosion of emotional and cog-

nitive resilience resources can lead to a serious decline in psychological resilience (Schwarzer, 2024). The fact that individuals experiencing social anxiety and loneliness are overly vigilant of their social environments and are inclined to interpret social interactions more negatively increases social withdrawal and feeds the cycle of loneliness, which further weakens their psychological resilience. Increased loneliness can also lead to a decrease in individuals' ability to manage stressful events, a decline in their level of hope, and a weakening of their coping strategies (Lim, Eres, & Vasan, 2020). The findings of this study suggest that psychological resilience serves as a resource that buffers the negative effects of workplace loneliness on the individual, but this buffering effect may weaken as loneliness levels increase. Therefore, it is argued that strengthening social support mechanisms in the workplace and providing interventions to reduce the perception of loneliness can play a critical role in protecting employees' psychological resilience.

The results obtained in accordance with the third hypothesis showed that psychological resilience has a mediating effect on work-related emotional exhaustion. This finding is consistent with previous studies, suggesting that psychological resilience has the capacity to alleviate the emotional distress associated with stressful and isolating work experiences (Heath, Sommerfield, & von Ungern-Sternberg, 2020; Uusiautti, Järlström, Rajala, & Hyvärinen, 2025). However, some studies argue that the impact of psychological resilience is not unlimited for lonely individuals and that sources of resilience may erode over time in extreme loneliness experiences (Wicks, 2023). Therefore, psychological resilience plays a critical role as a protective personal resource in the relationship between workplace loneliness and emotional exhaustion. The development of individual and organizational interventions to enhance psychological resilience in healthcare organizations appears to be of strategic importance for protecting the professional well-being of employees and reducing their levels of emotional exhaustion.

The demographic and work-related covariates included in the mediation analyses (marital status, living arrangement, and job satisfaction) did not significantly alter the main relationships. The direct effect of workplace loneliness on emotional exhaustion and the indirect effect through psychological resilience remained stable. The fact that the marital status variable showed a marginal relationship in the total effect model, while not changing the indirect effect, is consistent with evidence in the literature showing that this variable's relationship with exhaustion varies depending on the context. Whereas some studies report that single/separated individuals report higher emotional exhaustion (Kış, 2014;

Załuski & Makara-Studzińska, 2024), others find no statistically significant differences based on marital status (Mutair et al., 2025). The lack of impact of the living arrangement (living alone) is also theoretically consistent: objective indicators of isolation, such as living alone, are conceptually distinct from subjective experiences such as loneliness, and the main component that strongly predicts health risks is subjective loneliness (Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015; Lim et al., 2020). The work enjoyment variable in this study, while in the expected direction, did not reach statistical significance. This result suggests that, despite comprehensive reviews indicating that the job satisfaction–burnout relationship is generally negative and strong, reasons may be context-sensitive in specific subgroups (e.g., shifted/isolated technicians) (Gu, Lee, Hwang, Kim, Lee, & Kim, 2023; Quesada-Puga et al., 2024; Yoon & Kim, 2022). Therefore, it is argued that demographic/job-related covariates do not obscure the explanatory power of the core mechanism along the workplace loneliness and psychological resilience axis, while they may be important contextual determinants.

Conclusions

This study aimed to investigate the mediating role of psychological resilience in the relationship between workplace loneliness and work-related emotional exhaustion among imaging and laboratory technicians in the healthcare sector. The results showed that workplace loneliness significantly increased emotional exhaustion, while psychological resilience acted as a mediating mechanism. Moreover, loneliness was also shown to be an important factor that directly affects the burnout levels of health professionals, where psychological resilience acted as a protective buffer in the process.

Comprehensively addressing the impact of workplace loneliness on emotional exhaustion is of great importance not only for the development of healthy work environments but also for strengthening employees' sense of belonging and supporting their social ties. Experiencing social isolation at work makes it difficult for such individuals to develop a sense of organizational belonging, bond with coworkers, and benefit from social support, thus increasing the risk of emotional exhaustion. Thus, interventions to strengthen individual coping resources, such as psychological resilience, may help professionals who work independently and have limited social interaction opportunities cope with loneliness.

Multidimensional intervention strategies are needed to address loneliness and burnout in healthcare organizations. Among the recommendations are strengthening social support systems at the organizational level, creating structures that enable managers to communicate more effectively and inclusively with employees, and scheduling regular events that foster social connectedness. Additionally, individual awareness programs, stress management training, and technology-based digital support practices can be integrated to enhance overall well-being.

The results show that loneliness is a multi-dimensional phenomenon shaped by organizational structure, work environment, and social contexts. Further study of these variables in the disciplines of organizational behavior, management science, and health policy will enable the development of holistic strategies at the application level.

Limitations and Future Research

This study was conducted in a multi-institutional field setting, and some operational and administrative difficulties were encountered during the data collection process. First, differences in institutional approval processes and the fact that announcements could only be communicated through institutional channels (e.g., Intranet, internal closed group communication) restricted access for the researchers and made it difficult to reach employees who did not regularly follow these channels of corporate communication. This approach may have systematically excluded some employees. Second, the study employed a self-reporting approach; therefore, common method bias and social desirability effects cannot be entirely ruled out despite the precautions taken. It can be reduced by using multi-source, multi-wave designs (e.g. T1 loneliness, T2 resilience and T3 exhaustion, with supervisor and HR results used as external criteria) in future studies. Third, the voluntary nature of participation may have led to self-selection bias, and individuals with high sensitivity to loneliness/exhaustion themes may have been overrepresented. Fourth, the sampling frame was not shared by the management of the institutions with the research team due to corporate data protection principles, which complicated probability sampling and necessitated a purposive access strategy. Finally, the research design is cross-sectional; therefore, the assumed directional relationships should be interpreted as a relational pattern rather than a causal chain. For future studies, longitudinal, multilevel designs (employee, team, and organisation) can be used to determine temporal sequencing and cross-level

effects. Testing different aspects of loneliness (emotional deprivation and social companionship) separately makes it possible to determine which aspect leads to fatigue. Statements can be compared with objective indicators, such as shift rotation, night shift frequency and workload/overtime records, as well as qualitative data from interviews and focus groups.

References / Kaynaklar

Alghamdi, S. A., Alshamrani, S. A., Alomair, O. I., Alashban, Y. I., Abujamea, A. H., Mattar, E. H., Almalki, M., & Alkhorayef, M. 2023. Safety survey on lone working magnetic resonance imaging technologists in Saudi Arabia. ***Healthcare,*** 11 (5): 1–10.

Anand, P. & Mishra, S. K. 2021. Linking core self-evaluation and emotional exhaustion with workplace loneliness: Does high LMX make the consequence worse? ***The International Journal of Human Resource Management,*** 32 (10): 2124–2149.

Ashraf, N., Tahir, M. J., Saeed, A., Ghosheh, M. J., Alsheikh, T., Ahmed, A., Lee, K. Y., & Yousaf, Z. 2023. Incidence and factors associated with burnout in radiologists: A systematic review. ***European Journal of Radiology Open,*** 11 (100530): 1–11.

Bahar, Z., Cal, A., Beser, A., Cavusoglu, F., Deveci, A., Badur, S., & Bahar, I. H. 2022. A study on the adaptation of the HIV/AIDS-related Stigma Scale into Turkish. ***Perspectives in Psychiatric Care,*** 58 (2): 509–517.

Bakker, A. B., & Demerouti, E. 2017. Job Demands–Resources theory: Taking stock and looking forward. ***Journal of Occupational Health Psychology,*** 22 (3): 273–285.

Bakker, A. B., Demerouti, E., & Verbeke, W. 2004. Using the Job Demands-Resources model to predict burnout and performance. ***Human Resource Management,*** 43 (1): 83–104.

Bayram Değer, V., Çifçi, S., & Kaçan, H. 2025. The mediating role of psychological resilience in the relationship between workplace violence and job stress among healthcare workers. ***BMC Public Health,*** 25 (3005): 1–13.

Chen, Y. & Li, S. 2020. Relationship between workplace ostracism and unsafe behaviors: The mediating effect of psychological detachment and emotional exhaustion. ***Psychological Reports,*** 123 (2): 488–516.

Chinene, B., Mudadi, L., Mutandiro, L., Y Mushosho, E., & Matika, W. 2023. Radiographers' views on the workplace factors that impact their mental health: Findings of a survey at central hospitals in Zimbabwe. ***Journal of Medical Imaging and Radiation Sciences,*** 54 (2): S51–S61.

Choudhary, A., Jena, B. P., & Patre, S. 2024. Unveiling the veil of workplace loneliness: A Theory-Concept-Methodology (TCM) framework. ***Psychology Hub,*** 41 (1): 79–90.

Cunningham, F. C., Ranmuthugala, G., Plumb, J., Georgiou, A., Westbrook, J. I., & Braithwaite, J. 2012. Health professional networks as a vector for improving healthcare quality and safety: A systematic review. ***BMJ Quality & Safety,*** 21 (3): 239–249.

Denckla, C. A., Cicchetti, D., Kubzansky, L. D., Seedat, S., Teicher, M. H., Williams, D. R., & Koenen, K. C. 2020. Psychological resilience: an update on definitions, a

critical appraisal, and research recommendations. ***European Journal of Psychotraumatology,*** 11 (1822064): 1–18.

Di Giuseppe, M., Nepa, G., Prout, T. A., Albertini, F., Marcelli, S., Orrù, G., & Conversano, C. 2021. Stress, burnout, and resilience among healthcare workers during the COVID-19 emergency: The role of defense mechanisms. ***International Journal of Environmental Research and Public Health,*** 18 (10): 1–12).

Doğan, T. 2015. Kısa psikolojik sağlamlık ölçeği'nin Türkçe uyarlaması: Geçerlik ve güvenirlik çalışması. ***The Journal of Happiness & Well-Being,*** 3 (1): 93–102.

Doğan, T., Çetin, B., & Sungur, M. Z. 2009. İş yaşamında yalnızlık ölçeği Türkçe formunun geçerlilik ve güvenilirlik çalışması. ***Anadolu Psikiyatri Dergisi,*** 10 (6): 271–277.

Duncan, D. L. 2020. What the COVID-19 pandemic tells us about the need to develop resilience in the nursing workforce. ***Nursing Management,*** 27 (3): 22–27.

Elliott, J., Hodges, C., Boots, M., Pattinson, R., Gillen, E., Whybrow, D., & Bundy, C. 2024. Mixed shift rotations, sleep, burnout and well-being in professions similar to radiographers: A systematic review. ***Radiography,*** 30 (4): 1194–1200.

Ernst, M., Niederer, D., Werner, A. M., Czaja, S. J., Mikton, C., Ong, A. D., Rosen, T., Brähler, E., & Beutel, M. E. 2022. Loneliness before and during the COVID-19 pandemic: A systematic review with meta-analysis. ***American Psychologist,*** 77 (5): 660–677.

Firoz, M. & Chaudhary, R. 2022. The Impact of workplace loneliness on employee outcomes: What role does psychological capital play? ***Personnel Review,*** 51 (4): 1221–1247.

Garcia, C. de L., Abreu, L. C. de, Ramos, J. L. S., Castro, C. F. D. de, Smiderle, F. R. N., Santos, J. A. Dos, & Bezerra, I. M. P. 2019. Influence of burnout on patient safety: Systematic review and meta-analysis. ***Medicina,*** 55 (9): 1–13.

Gransjøen, A. M. 2024. Prevalence, impact and prevention of stress and burnout, and promoting resilience among radiological personnel: A systematized review. ***Discover Psychology,*** 4 (11): 1–17.

Gu, H., Lee, J., Hwang, Y., Kim, J., Lee, S., & Kim, S. J. 2023. Job burnout among workers with different shift regularity: Interactive factors between sleep, depression, and work environment. ***Frontiers in Public Health,*** 11 (1131048): 1–9.

Günay, A. 2021. İşe bağlı duygusal tükenmişlik: Bir ölçek uyarlama çalışması. ***Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi,*** 30 (1): 142–149.

Hawkley, L. C. & Cacioppo, J. T. 2010. Loneliness matters: A theoretical and empirical review of consequences and mechanisms. ***Annals of Behavioral Medicine,*** 40 (2): 218–227.

Hayes, A. F. 2022. ***Introduction to mediation, moderation, and conditional process analysis: A regression-based approach (3th edition).*** New York: Guilford Publications.

Heath, C., Sommerfield, A., & von Ungern-Sternberg, B. S. 2020. Resilience strategies to manage psychological distress among healthcare workers during the COVID-19 pandemic: A narrative review. ***Anaesthesia,*** 75 (10): 1364–1371.

Heider, K. L. 2021. Isolation, burnout, and a lost sense of belonging: Combating the challenges of distance education during a pandemic. ***Distance Learning,*** 18 (1): 25–35.

Hobfoll, S. E., Halbesleben, J., Neveu, J. P., & Westman, M. 2018. Conservation of resources in the organizational context: The reality of resources and their consequences. ***Annual Review of Organizational Psychology and Organizational Behavior,*** 5 (1): 103–128.

Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. 2015. Loneliness and social isolation as risk factors for mortality: A meta-analytic review. ***Perspectives on Psychological Science,*** 10 (2): 227–237.

Ishaky, L., Sivanthan, M., Nowrouzi-Kia, B., Papadopoulos, A., & Gohar, B. 2023. The mental health of laboratory and rehabilitation specialists during COVID-19: A rapid review. ***AIMS Public Health,*** 10 (1): 63–77.

Ismail, Y., Shiner, N., & Tucker, R. 2024. Workplace factors impacting the wellbeing of diagnostic radiographers in clinical practice: A literature review. ***Journal of Medical Imaging and Radiation Sciences,*** 55 (4): 1–14.

Jackson, S. E. & Schuler, R. S. 1983. Preventing employee burnout. ***Personnel,*** 60 (2): 58–68.

Jolly, P. M., Kong, D. T., & Kim, K. Y. 2021. Social support at work: An integrative review. ***Journal of Organizational Behavior,*** 42 (2): 229–251.

Jung, Y. S., Jung, H. S., & Yoon, H. H. 2022. The Effects of workplace loneliness on the psychological detachment and emotional exhaustion of hotel employees. ***International Journal of Environmental Research and Public Health,*** 19 (9): 1–12.

Kagan, M. & GreenblattKimron, L. 2021. Psychological distress among social workers. ***Journal of Social Work,*** 21 (5): 1243–1260.

Kaymaz, K., Eroğlu, U., & Sayılar, Y. 2014. Effect of loneliness at work on the employees' intention to leave. ***ISGUC The Journal of Industrial Relations and Human Resources,*** 16 (1): 38–53.

Khan, M. A. S., Jianguo, D., Mann, A., Saleem, S., Boamah, K. B., Javed, U., & Usman, M. 2019. Rejuvenating the concept of work alienation through Job Demands-Resources model and examining its relationship with emotional exhaustion and ex-

plorative and exploitative learning. ***Psychology Research and Behavior Management,*** 12: 931–941.

Kış, A. 2014. Marital status differences in burnout among educational stakeholders: A meta-analysis. ***Journal of Human Sciences,*** 11 (2): 543–558.

Kiratli, D. & Duran, S. 2024. Compassion fatigue and loneliness at work in nurses – the mediating role of resilience: A cross-sectional study. ***Journal of Research in Nursing,*** 29 (4–5): 290–302.

Klaver, M., van den Hoofdakker, B. J., Wouters, H., de Kuijper, G., Hoekstra, P. J., & de Bildt, A. 2021. Exposure to challenging behaviours and burnout symptoms among care staff: The role of psychological resources. ***Journal of Intellectual Disability Research,*** 65 (2): 173–185.

Kobasa, S. C. 2013. The hardy personality: Toward a social psychology of stress and health. In G. S. Sanders & J. Suls (Eds.). ***Social psychology of health and illness:*** 3–32. New York: Psychology Press.

Kolcz, D. L., Ferrand, J., Young, K. P., O'Sullivan, D. M., & Robinson, K. 2023. Loneliness in healthcare providers: Results from a mid-pandemic survey. ***Clinical Medicine Insights: Psychiatry,*** 14: 1–8.

Kunzler, A. M., Helmreich, I., Chmitorz, A., König, J., Binder, H., Wessa, M., & Lieb, K. 2020. Psychological interventions to foster resilience in healthcare professionals. ***Cochrane Database of Systematic Reviews,*** 7: 1–79.

Kutluturkan, S., Sozeri, E., Uysal, N., & Bay, F. 2016. Resilience and burnout status among nurses working in oncology. ***Annals of General Psychiatry,*** 15 (33): 1–9.

Lara-Cabrera, M. L., Betancort, M., Muñoz-Rubilar, C. A., Rodríguez Novo, N., & De las Cuevas, C. 2021. The mediating role of resilience in the relationship between perceived stress and mental health. ***International Journal of Environmental Research and Public Health,*** 18 (18): 1–10.

Ledgerwood, A. & Shrout, P. E. 2011. The trade-off between accuracy and precision in latent variable models of mediation processes. ***Journal of Personality and Social Psychology,*** 101 (6): 1174–1185.

Lim, M. H., Eres, R., & Vasan, S. 2020. Understanding loneliness in the twenty-first century: An update on correlates, risk factors, and potential solutions. ***Social Psychiatry and Psychiatric Epidemiology,*** 55: 793–810.

López-Cabarcos, Á. M., López-Carballeira, A., & Ferro-Soto, C. 2021. How to moderate emotional exhaustion among public healthcare professionals? ***European Research on Management and Business Economics,*** 27 (2): 1–11.

Lyng, H. B., Macrae, C., Guise, V., Haraldseid-Driftland, C., Fagerdal, B., Schibevaag, L., Alsvik, J. G., & Wiig, S. 2022. Exploring the nature of adaptive capacity for

resilience in healthcare across different healthcare contexts; a metasynthesis of narratives. ***Applied Ergonomics,*** 104 (103810): 1–9.

Maslach, C. 1978. The client role in staff burn-out. ***Journal of Social Issues,*** 34 (4): 111–124.

Maslach, C. & Jackson, S. E. 1981. The measurement of experienced burnout. ***Journal of Organizational Behavior,*** 2 (2): 99–113.

Meese, K. A., Boitet, L. M., Sweeney, K. L., & Rogers, D. A. 2024. Perceived stress from social isolation or loneliness among clinical and non-clinical healthcare workers during COVID-19. ***BMC Public Health,*** 24 (1): 1–10.

Mutair, A. Al, Alsaleh, K., Alrasheeday, A., Almadani, N., Alyami, H., Daniyal, M., & Almahmoud, S. 2025. Prevalence and associated factors of burnout among nurses at private tertiary hospitals in the gulf region: A cross-sectional multicenter study. ***SAGE Open Nursing,*** 11: 1–10.

Nagle, E., Griskevica, I., Rajevska, O., Ivanovs, A., Mihailova, S., & Skruzkalne, I. 2024. Factors affecting healthcare workers burnout and their conceptual models: Scoping review. ***BMC Psychology,*** 12 (1): 1–21.

Nashwan, A. J., Alsalamah, Y. S., Abu-Mahfouz, M. S., Palanivelu, P., Masoud, A., Baker, R. A., & Fradelos, E. C. 2024. Resilience in solitude: A review of loneliness and its impact on nurses' wellbeing. ***Perspectives in Psychiatric Care,*** 2024 (225026): 1–12.

Ng, S. M. & Lee, T. M. C. 2020. The mediating role of hardiness in the relationship between perceived loneliness and depressive symptoms among older. ***Aging & Mental Health,*** 24 (5): 805–810.

Nikolova, I., Van Dam, K., Van Ruysseveldt, J., & De Witte, H. 2019. Feeling weary? Feeling insecure? Are all workplace changes bad news? ***International Journal of Environmental Research and Public Health,*** 16 (10): 1–22.

Ofei-Dodoo, S., Ebberwein, C., & Kellerman, R. 2020. Assessing loneliness and other types of emotional distress among practicing physicians. ***Kansas Journal of Medicine,*** 13: 1–5.

Ozcelik, H., & Barsade, S. G. 2018. No employee an island: Workplace loneliness and job performance. ***Academy of Management Journal,*** 61 (6): 2343–2366.

Phillips, C. S. 2021. Psychosocial well-being: An exploratory cross-sectional evaluation of loneliness, anxiety, depression, self-compassion, and professional quality of life in oncology nurses. ***Clinical Journal of Oncology Nursing,*** 25 (5): 530–538.

Quesada-Puga, C., Izquierdo-Espin, F. J., Membrive-Jiménez, M. J., Aguayo-Estremera, R., Cañadas-De La Fuente, G. A., Romero-Béjar, J. L., & Gómez-Urquiza, J. L. 2024. Job satisfaction and burnout syndrome among intensive-care unit nurses:

A systematic review and meta-analysis. ***Intensive and Critical Care Nursing,*** 82 (103660): 1–10.

Rosenthal, R. & Rubin, D. B. 1982. A simple, general purpose display of magnitude of experimental effect. ***Journal of Educational Psychology,*** 74 (2): 166–169.

Schwarzer, R. 2024. Stress, resilience, and coping resources in the context of war, terror, and migration. ***Current Opinion in Behavioral Sciences,*** 57 (101393): 1–8.

Seppala, E. & King, M. 2017. Burnout at work isn't just about exhaustion. It's also about loneliness. ***Harvard Business Review,*** 29: 2–4.

Shematek, G. 2013. Safety for workers who work alone. ***Canadian Journal of Medical Laboratory Science,*** 75 (3): 13–14.

Sîrbu, A. A. & Dumbravă, A. C. 2019. Loneliness at work and job performance: The role of burnout and extraversion. ***Psihologia Resurselor Umane,*** 17 (1): 7–17.

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. 2008. The brief resilience scale: Assessing the ability to bounce back. ***International Journal of Behavioral Medicine,*** 15: 194–200.

Smith, B. W., Tooley, E. M., Christopher P. J., & Kay, V. S. 2010. Resilience as the ability to bounce back from stress: A neglected personal resource? ***The Journal of Positive Psychology,*** 5 (3): 166–176.

Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. 2014. Resilience definitions, theory, and challenges: interdisciplinary perspectives. ***European Journal of Psychotraumatology,*** 5 (25338): 1–14.

Stănescu, D. F. & Romașcanu, M. C. 2024. The impact of perceived social support on workplace loneliness: The mediation role of work alienation. ***Management Dynamics in the Knowledge Economy,*** 12 (2): 133–144.

Sullivan, D. M. & Bendell, B. L. 2023. Help! Lonely at work: Managerial interventions to combat employee loneliness. ***Business Horizons,*** 66 (5): 655–666.

Uslu, O. 2021. Being alone is more painful than getting hurt: The moderating role of workplace loneliness in the association between workplace ostracism and job performance. ***Central European Business Review,*** 10 (1): 19–38.

Uusiautti, S., Järlström, M., Rajala, A., & Hyvärinen, S. 2025. The impact of professional isolation on emotional exhaustion with psychological capital as the moderator among finnish knowledge workers. ***International Journal of Work Organisation and Emotion,*** 16 (1): 95–109.

Van den Broeck, A., Ferris, D. L., Chang, C.-H., & Rosen, C. C. 2016. A review of Self-Determination Theory's basic psychological needs at work. ***Journal of Management,*** 42 (5): 1195–1229.

Wax, A., Deutsch, C., Lindner, C., Lindner, S. J., & Hopmeyer, A. 2022. Workplace loneliness: The benefits and detriments of working from home. ***Frontiers in Public Health,*** 10 (903975): 1–15.

West, C. P., Dyrbye, L. N., Sinsky, C., Trockel, M., Tutty, M., Nedelec, L., Carlasare, L. E., & Shanafelt, T. D. 2020. Resilience and burnout among physicians and the general US working population. ***JAMA Network Open,*** 3 (7): 1–11.

Wharton, A. S. 1993. The affective consequences of service work: Managing emotions on the job. ***Work and Occupations,*** 20 (2): 205–232.

Wicks, R. J. 2023. ***Bounce: Living the resilient life.*** UK: Oxford University Press.

Wolters, N. E., Mobach, L., Wuthrich, V. M., Vonk, P., Van der Heijde, C. M., Wiers, R. W., Rapee, R. M., & Klein, A. M. 2023. Emotional and social loneliness and their unique links with social isolation, depression and anxiety. ***Journal of Affective Disorders,*** 329: 207–217.

Wood, R. E., Brown, R. E., & Kinser, P. A. 2022. The connection between loneliness and burnout in nurses: An integrative review. ***Applied Nursing Research,*** 66 (151609): 1–9.

Wright, S. 2005. Organizational climate, social support and loneliness in the workplace. In N. M. Ashkanasy, W. J. Zerbe, & C. E. J. Härtel (Eds.). ***The effect of affect in organizational settings:*** 123–142. Leeds: Emerald Group Publishing Limited.

Wright, S. 2009. In a lonely place: The experience of loneliness in the workplace. In R. L. Morrison & S. L. Wright (Eds.). ***Friends and enemies in organizations: A work psychology perspective:*** 10–31. UK: Palgrave Macmillan.

Wright, S., Burt, C. D. B., & Strongman, K. T. 2006. Loneliness in the workplace: Construct definition and scale development. ***New Zealand Journal of Psychology,*** 35 (2): 59–68.

Wright, S. & Silard, A. 2020. Unravelling the antecedents of loneliness in the workplace. ***Human Relations,*** 74 (7): 1060–1081.

Yoon, S., & Kim, Y. A. 2022. A meta-analysis of factors related to job satisfaction: Focused on Korean nurses. ***Iranian Journal of Public Health,*** 51 (5): 978–989.

Załuski, M., & Makara-Studzińska, M. 2024. Having children and being married are predictors of burnout and obesity among working men: Effects of latent profile analysis. ***Inquiry: A Journal of Medical Care Organization, Provision and Financing,*** 61: 1–15.