Evaluation of Occupation Related Burnout among Nursing Professionals in Riyadh, Saudi Arabia – A Descriptive Cross-Sectional Study

Alya Alghamdi

Department of Community and Mental Health Nursing, King Saud University, Riyadh, Saudi Arabia

Abstract

Background and Aim: The prevalence of burnout is increasing among healthcare professionals, particularly among nurses, due to their multiple roles in healthcare. There are limited studies assessing burnout among nurse providers in Saudi Arabia. Therefore, this study aimed to assess occupation-related burnout among nurse professionals in Riyadh, Saudi Arabia. Methods: A descriptive cross-sectional study was conducted to evaluate burnout among nurse providers. Nurse providers working in a tertiary hospital in Riyadh were recruited for the study. Structured, pre-validated questionnaires were used to assess burnout among nurse professionals. Data analysis was performed using statistical software package, version 26 (SPSS Inc., Armonk, New York, United States). Results: A total of 120 nurses responded to the study (82.5% females) and were included in the final analysis. Among the respondents, 74% were aged over 30 years, 67.5% were single, 47.5% of the nurses had 2-5 years of experience, while 40% had over 5 years of work experience. The findings revealed that 26.7% of the nurses never felt emotionally exhausted because of their work, while 11.7% felt that way every day. In addition, 27.5% of the nurses agreed that working with people all day is stressful. Furthermore, 19.2% felt that their work was breaking them down. Of the nurses in this survey, 13.3% reported feeling exhausted as soon as they saw a new workday ahead of them, compared to 24.2% who said they never felt tired at all. Moreover, 13.3% of the nurses revealed that they easily understood the actions of their patients every day, while 25% never understood it easily. In addition, 15.8% of the nurses agreed that they successfully dealt with other people's problems every day, while 16.7% agreed that they dealt with them several times a month. Conclusion: Nurses in the current study exhibited burnout in various aspects of their work in terms of emotional exhaustion, depersonalization, and personal achievement. In today's society, the concept of occupational burnout is increasing due to multiple factors. Therefore, there is a need to raise understanding and awareness of management techniques for burnout among health-care professionals, particularly nurses.

Key words: Depersonalisation, Emotionally exhaustion, Personal achievement, Stress, Work

INTRODUCTION

Burnout among health-care professionals, particularly nurses, is increasing in everyday life. Recent studies indicate that workplace burnout is prevalent and influenced by various factors.^[1-5] Burnout is a psychological condition characterized by depersonalization, emotional tiredness, and a feeling of lost productivity in daily work.^[4,5] According to the latest 11th iteration of the International Classification of Diseases, burnout is a sickness that arises from "chronic workplace stress that has not been successfully managed."^[6] By defining occupational burnout more precisely and designating it as a condition exclusively associated with professional work, the field has improved its standing and recognized occupational burnout as a serious health risk.^[6]

Health-care professionals frequently experience burnout, especially nurses who deal with patients from multi-ethnic

Address for correspondence:

Alya Alghamdi, Department of Community and Mental Health Nursing, King Saud University, Riyadh, Saudi Arabia. E-mail: aalgamdii@ksu.edu.sa

Received: 05-11-2024 **Revised:** 23-12-2024 **Accepted:** 31-12-2024 background and a high patient volume.^[6] Their employment and caregiving quality may suffer as a result of emotional tiredness brought on by this stress.^[6] Furthermore, burnout among medical personnel can have serious negative effects on their careers, including decreased patient satisfaction,^[6-8] poorer service quality, and even medical errors. It can also lead to malpractice lawsuits, which might be very expensive for hospitals and caregivers.^[6-8] The Maslach Burnout Inventory (MBI) has been used extensively for decades to detect burnout prevalence, although earlier research estimated the prevalence of burnout among health-care professionals which ranges from 19% to 66% on patient treatment.^[9,10]

In the US, researchers discovered that 45.8% of 7288 doctors exhibited some form of burnout syndrome. Emergency and family physicians reported having symptoms of burnout at the highest rates. Burnout and medical mistakes are significantly correlated. About 9% of the 8000 surgeons in the US said that they have committed medical mistakes.^[9-11] In addition, burnout among health-care professionals may also have significant professional consequences such as lower patient satisfaction,^[6-8] impaired quality of care, even up to medical errors, potentially resulting in malpractice suits with significant costs for caregivers and hospitals. According to the literature, the most significant dimension on the MBI is emotional exhaustion (EE).

A high depersonalization or emotional tiredness score is thought to be a symptom of clinically serious burnout.^[6-8] Both physical and emotional health, as well as work performance, can be impacted by burnout. A number of negative outcomes have been linked to burnout, including early retirement, high employee turnover, poor patient care, and medical blunders. In addition, it has been linked to suicide thoughts, alcohol consumption, anxiety, sadness, and sleep difficulties. Medical students, residents, and practicing physicians are all susceptible to burnout. In the US, burnout affects medical students between 31% and 49.6% of the time, physicians between 30% and 76% of the time, and residents between 50% and 76% of the time. High levels of burnout have also been documented in certain emerging nations, including Malaysia, Yemen, Qatar, Saudi Arabia, and Lebanon.^[10-13] Therefore, the purpose of this study is to assess the Assessment of work related burnout and triggered factors among health-care physicians in Saudi Arabia.

METHODS

A cross-sectional study using web-based questionnaires was conducted among nurses working in a tertiary hospital in Riyadh, Saudi Arabia, over a period of 3 months. This study included nurses aged above 18 years, registered nurses with the Saudi Council for Health Specialties, and those working in rotating shifts. Nurses who worked part-time or used only one shift in the hospital were excluded. The data were collected using structured, pre-validated questionnaires aimed at assessing the socio-demographic and work-related information of the nurses, the incidence of burnout, sources of burnout, sources of stress, and factors that trigger burnout. Burnout was assessed using the MBI-Human Services Survey. Participants agreed to participate in the study by filling out the questionnaire, and nurses who refused to participate or did not complete the questionnaires were excluded from the study.

The questionnaires used for this study were adopted from earlier studies and divided into two parts. Part one focused on demographic information and consisted of a total of 6 questions asking nurse providers about their age, gender, marital status, years of experience, working hours, and satisfaction with work-life balance. Part two of the study assessed burnout using the Maslach Burnout Tool, which consisted of 22 items further divided into three sections (A-C). Section A of the Maslach Burnout Tool consisted of seven questions, while section B focused on depersonalization (7 items), and section C was about personal achievement (8 items). All questions on the Maslach Burnout Scale were assessed on a seven-point scale ranging from 0 to 6, where a score of 0 indicates never, 1 indicates at least a few times a year, 2 indicates at least once a month, 3 indicates several times a month, 4 indicates once a week, 5 suggests several times a week, and 6 indicates every day.

Sample size

The sample size was determined using an online calculator that has been used in an array of prior studies.^[14-25] On the study site, we do not know the exact number of nurses, so we assumed a population size of 300 nurses from whom the required sample size was obtained at a 95% confidence interval (CI) and a 5% margin of error. To calculate the sample size, we used a 5% non-response rate, which led to a sample size of 169. Nevertheless, we ultimately included 170 nurses in study to increase the reliability.

Data analysis

Participants' responses will be evaluated using a descriptive analysis, categorical data were described using frequencies (*n*) and percentages (%), and burnout scores will be prepared. The data were examined using the Statistical Package for the Social Sciences version 26.0, and a difference was deemed statistically significant if the P < 0.05. (SPSS Inc., Chicago, IL, USA).

RESULTS

Sample characteristics

A total of 120 nurses responded to the study by giving a response rate of 70.6% (n = 170), among those 82.5% of

nurses were females. Among the respondents, 74% of them were aged >30 years 67.5% of them were single 47.5% of the nurses were experienced between 2 and 5 years, while 405 of them were having >5 years of work experience. Furthermore 55.8% of the nurses working \geq 8 h in a day and most 69.2% of the nurses satisfied with the work life balance. Table 1 shows the respondents demographic- and work-related characteristics.

Frequency of responses towards burnout

In this study, nurse's responses toward burnout statements are varied and 26.7% of the nurses never felt emotionally exhausted because of their work, while 11.7% of them felt every day, while 27.5% of the nurses agreed that working with people in the whole day is stressful. In addition, 19.2% of them felt that their work is breaking them down. Furthermore 15.8% of the nurse's everyday feel frustrated because of their work, on the other hand, 5.8% of them felt it several times in a week. The overall burnout among nurses was 78.1%. The detailed responses of the burnout items by the respondents are shown in Table 2.

Responses towards depersonalization

Of the nurses surveyed, roughly one-third (29.2%) stated that they never felt like they treated some patients impersonally, as objects, compared to 14.2% who felt that way every day and

Table 1: Sociodemographic characteristics of the health-care professionals					
Variables	Frequency (%)				
Age (Years)					
<30	26 (26)				
>30	74 (74)				
Gender					
Male	21 (17.5)				
Female	99 (82.5)				
Marital status					
Single//divorced	81 (67.5)				
Married	39 (32.5)				
Years of experience					
Less than a year	15 (12.5)				
Between 2 and 5 years	57 (47.5)				
\geq 5 years	48 (40.0)				
Work hours (Day)					
8 h	53 (44.2)				
≥8 h	67 (55.8)				
Satisfaction with work life balance					
Yes	83 (69.2)				
No	37 (30.8)				

5% who felt that way several times a week. In addition, 13.3% of the nurses in this survey reported feeling exhausted as soon as they see a new workday ahead of them, while 24.2% said they never feel tired at all. Furthermore, 14.2% of the nurses have the feeling every day that their colleagues or patients blame them for some of their problems, while 9.2% of them had it several times in a week. In addition, approximately 30% of the nurses never agreed that they really do not care about what happens to some of their patients, and 20.8% of them never agreed that work makes them emotionally harder, while 15.8% of them felt it every day, as shown in Table 3.

Respondents responses towards personal achievement

In addition, 13.3% of the nurses revealed that they easily understand the actions of their patients or clients every day, while 25% of them never understand it easily. Of the nurses, 15.8% of them agreed that they deal with other people's problems successfully every day, while 16.7% of them agreed that they deal with them several times a month. In addition, 16.7% of the nurses revealed that they positively influence other people throughout their work. Only 15.8% of the nurses feel full of energy every day, and 16.7% of them revealed that they feel stimulated when working closely with colleagues. Furthermore, 16.7% and 8.3% of the nurses feel refreshed every day and several times a week when they have been working closely with their patients. The detailed frequencies toward the personal achievement of the nurses are presented in Table 4.

DISCUSSION

Despite adequate treatment and management of patient health by health-care professionals, health outcomes depend highly on the performance of these professionals. Therefore, it is crucial for health-care professionals to maintain good health in terms of mental, physical, and physiological wellbeing so that they can perform better at their organizations. Burnout is one of the many health-related problems that health-care professionals, especially nurses, face on a daily basis. This can lead to errors in diagnosis or treatment, or the worsening of existing conditions. This study would be a valuable addition to the management of work-related health problems, such as burnout, among nurses and other healthcare professionals in Saudi Arabia and other nations. It would also serve as a reference for much-needed future research. By addressing the factors that contribute to this issue, health-care organizations can use the findings to establish appropriate measures to control and minimize work-related stress, ultimately reducing burnout among nurses and other healthcare professionals.

However, respondents in this study revealed that 11.7% of nurses feel emotionally exhausted in their everyday work.

Alghamdi: Evaluation of occupation related Burnout among nurses

Table 2: Respondents frequencies towards burnout questionnaires								
Variables	Never n (%)	At least a few times a year n (%)	At least once a month <i>n</i> (%)	Several times a month <i>n</i> (%)	Once a week n (%)	Several times a week n (%)	Every day n (%)	
I feel emotionally exhausted because of my work	32 (26.7)	9 (7.5)	19 (15.8)	16 (13.3)	18 (15)	12 (10.0)	14 (11.7)	
Working with people the whole day is stressful	33 (27.5)	20 (16.7)	11 (9.2)	18 (15.0)	13 (10.8)	4 (3.3)	21 (17.5)	
l feel like my work is breaking me down	23 (19.2)	23 (19.2)	19 (15.8)	18 (15.0)	8 (6.7)	6 (5.0)	23 (19.2)	
I feel frustrated by my work	26 (21.7)	11 (9.2)	27 (22.5)	15 (12.5)	15 (12.5)	7 (5.8)	19 (15.8)	
I get the feeling that I work too hard	31 (25.8)	13 (10.8)	23 (19.2)	14 (11.7)	12 (10.0)	4 (3.3)	23 (19.2)	
Being in direct contact with people at work is too stressful	25 (20.8)	17 (14.2)	19 (15.8)	18 (15.0)	8 (6.7)	13 (10.8)	20 (16.7)	
I feel as if I'm at my end of rope	14 (11.7)	17 (14.2)	29 (24.2)	19 (15.8)	18 (15.0)	7 (5.8)	16 (13.3)	

Table 3: Respondents frequencies towards depersonalization								
Variables	Never n (%)	At least a few times a year n (%)	At least once a month <i>n</i> (%)	Several times a month n (%)	Once a week n (%)	Several times a week n (%)	Every day n (%)	
I get the feeling that I treat some clients/patients impersonally, as if they were objects	35 (29.2)	20 (16.7)	17 (14.2)	12 (10)	13 (10.8)	06 (5.0)	17 (14.2)	
I feel tired as soon as I get up in the morning and see a new working day stretched out in front of me	29 (24.2)	21 (17.5)	28 (23.3)	12 (10)	7 (5.8)	07 (5.8)	16 (13.3)	
I have the feeling that my colleagues or patients blame me for some of their problem	30 (25.0)	10 (8.3)	28 (23.3)	17 (14.2)	7 (5.8)	11 (9.2)	17 (14.2)	
I am at the end of my patience at the end of a working day	25 (20.8)	19 (15.8)	21 (17.5)	20 (16.7)	7 (5.8)	8 (6.7)	20 (16.7)	
I really do not care about what happens to some of my patients	35 (29.2)	16 (13.3)	24 (20.0)	13 (10.8)	6 (5.0)	10 (8.3)	16 (13.3)	
I have become more insensitive to people since I have started doing this job	27 (22.5)	22 (18.3)	18 (15.0)	20 (16.7)	8 (6.7)	4 (3.3)	21 (17.5)	
I'm afraid that my work makes me emotionally harder	25 (20.8)	19 (15.8)	23 (19.2)	20 (16.7)	8 (6.7)	6 (5.0)	19 (15.8)	

Statements such as "I feel like my work is breaking me down" and "I get the feeling that I work too hard" had the highest burnout score (19.2%) in daily life. Previous studies have also reported similar findings. For instance, a study by Al-Omari *et al.* among health-care providers found that they were experiencing high levels of burnout, particularly in EE (34.33 \pm 11.87).^[11] Similarly, another study concluded that 21% of the physicians had high EE.^[12] On the other hand in the US a recent study in 2020 concluded that 62% of the nurses experience burnout, more particular it was more common among younger nurses, with 69% of nurses under 25 reporting burnout.^[26] Although burnout among health-care professionals may vary

from study to study, influenced by factors such as the type of profession being studied, methods of interpretation, and the country profile of the subjects, it is a fact that senior nurses and other health-care professionals generally experience lower levels of burnout than their junior counterparts. These findings underscore the need for major healthcare institutions to address the factors and policies contributing to burnout, and to support the development of a safer and more resilient nursing workforce in countries like Saudi Arabia and beyond in the future.

Regarding the specific elements that scored highly on depersonalization, 17.5% of the nurses reported that

Table 4: Frequency of responses toward personal achievement in the working environment							
Variables	Never n (%)	At least a few times a year n (%)	At least once a month <i>n</i> (%)	Several times a month n (%)	Once a week n (%)	Several times a week n (%)	Every day n (%)
I have achieved many rewarding objectives in my work	17 (14.2)	21 (17.5)	17 (14.2)	22 (18.3)	18 (15.0)	5 (4.2)	20 (16.7)
I feel full of energy	28 (23.3)	12 (10.0)	19 (15.8)	18 (15.0)	13 (10.8)	11 (9.2)	19 (15.8)
I can easily understand the feelings of my patients	30 (25)	16 (13.3)	22 (18.3)	15 (12.5)	09 (7.5)	12 (10.0)	16 (13.3)
I look patients problems effectively	29 (24.2)	15 (12.5)	15 (12.5)	20 (16.7)	11 (9.2)	11 (9.2)	19 (15.8)
In my work I handle emotional problems easily	22 (18.3)	14 (11.7)	17 (14.2)	23 (19.2)	13 (10.8)	10 (8.3)	21 (17.5)
I feel that I influence other people positively through my work	30 (25.0)	19 (15.8)	18 (15.0)	19 (15.8)	8 (6.7)	6 (5.0)	20 (16.7)
I find it easy to build a relaxed atmosphere with patients or clients	28 (23.3)	12 (10.0)	18 (15.0)	20 (16.7)	13 (10.8)	8 (6.7)	21 (17.5)
I feel refreshed when I have been working close to my patients	19 (15.8)	23 (19.2)	14 (11.7)	23 (19.2)	11 (9.2)	10 (8.3)	20 (16.7)

since starting their current jobs, they have become more insensitive to their patients every day. In addition, 16.7% of the nurses expressed that they felt as though they had run out of patience every day by the end of their workday. Furthermore, in the current study, 15.8% of the nurses were afraid that their work makes them emotionally harder. However, previous findings among health-care providers show high levels of depersonalization, with a mean score of 12.92 ± 7.03 .^[11] Similarly, another study in Saudi Arabia revealed that 38% of the physicians working in primary healthcare had depersonalization.^[12] Among nurses a review of the studies on burnout in nursing, revealed that the incidence of severe emotional tiredness was 28%, while 15% reported high depersonalization, and 31% had a poor personal accomplishment.[27] In this study, only 16.7% of the nurses have achieved rewarding objectives in their work and 17.5% of the nurses handle emotional problems easily. Suggesting that nurses in the current study has poor personal achievement. These findings were comparable to earlier findings.^[27,28] For example, Shahin et al. among nurses in Saudi Arabia revealed that 39% of the nurses had high EE, while 38% of them reported high depersonalization and 85.5% had low personal accomplishment.^[28]

Nevertheless, burnout is a prevalent and manageable problem among nurses. Previous research indicates that, in addition to demographic factors like gender, age, and years of experience, burnout is significantly associated with stress at work, overworking, long working hours, a lack of resources, and conflict with co-workers.^[27,28] Addressing these issues is recommended to overcome burnout and its negative effects among nurses and health-care professionals for promising health outcomes. A comprehensive interventional approach is required to minimize and prevent burnout in nurses. Workshops on self-care, stress management, communication skills training, yoga, mindfulness, meditation, and coping mechanisms are recommended for health-care professionals like nurses. A stress management training program and staff schedule rotation are required by the organization where health-care professionals are employed. Further studies examining the characteristics linked to burnout in the nursing workforce, with a larger sample size, should be conducted. The current study has several limitations. First, the results relied on a self-administered online questionnaire, which raised the possibility of biases like recollection or social desirability bias. Second, the results were not indicative of other hospitals or other healthcare workers on a national or international scale since they were confined to nursing personnel and centered on a single hospital, making them non-generalizable internationally. Despite these limitations, our research suggests that greater focus should be placed on informing individuals and healthcare organizations about the existence of burnout among nurses working in healthcare facilities, as well as providing them with support and education to help minimize the negative effects of burnout.

CONCLUSION

Nurses in the current study exhibited burnout in various aspects of their work, including EE, depersonalization, and personal achievement. In today's society, the concept of occupational burnout is on the rise due to multiple factors. As a result, there is a need to increase understanding and awareness of management techniques for burnout among health-care professionals, specifically nurses. Our research could help investigate the most effective and practical methods for increasing awareness and addressing burnout. Integrating management methods through interventions, providing organizational and peer support, as well as offering continuing training modules, are all important steps to minimize work-related burnout.

DATA SHARING STATEMENT

AA has access to the data and take responsibility for integrity of the data and analysis.

DECLARATION OF COMPETING INTEREST

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

ACKNOWLEDGMENT

The authors of this study extend their appreciation to King Saud University, Saudi Arabia.

REFERENCES

- World Health Organization. Geneva: The Organization; 2019. Burn-out an "Occupational Phenomenon": International Classification of Diseases. Available from: https://www.who.int/mental_health/evidence/burn-out/ en [Last accessed on 2021 Oct 13].
- Maslach C, Jackson SE, Leiter MP. Maslach Burnout Inventory Manual. 3rd ed. Mountain View, CA: CPP, Inc.; 1996.
- Woo T, Ho R, Tang A, Tam W. Global prevalence of burnout symptoms among nurses: A systematic review and metaanalysis. J Psychiatr Res 2020;123:9-20.
- 4. Shanafelt TD, Boone S, Tan L, Dyrbye LN, Sotile W, Satele D, *et al.* Burnout and satisfaction with work-life balance among US physicians relative to the general US population. Arch Intern Med 2012;172:1377.
- De Hert S. Burnout in healthcare workers: Prevalence, impact and preventative strategies. Local Reg Anesth 2020;13:171-83.
- 6. Shanafelt T, Sloan J, Habermann T. The well-being of physicians. Am J Med 2003;114:513-59.
- 7. Dyrbye LN, Thomas MR, Massie FS, Power DV, Eacker A, Harper W, *et al.* Burnout and suicidal ideation among U.S. medical students. Ann Intern Med 2008;149:334-41.
- 8. Haas JS, Cook EF, Puopolo AL, Burstin HR, Cleary PD, Brennan TA. Is the professional satisfaction of general internists associated with patient satisfaction? J Gen Intern Med 2000;15:122-8.

- 9. Lacy BE, Chan JL. Physician burnout: The hidden health care crisis. Clin Gastroenterol Hepatol 2018;16:311-7.
- Aldubai SAR, Aljohani AM, Alghamdi AG, Alghamdi KS, Ganasegeran K, Yenbaawi AM. Prevalence and associated factors of burnout among family medicine residents in Al Madina, Saudi Arabia. J Family Med Prim Care 2019;8:657-62. Erratum in: J Family Med Prim Care 2019;8:1293.
- Al-Omari A, Al Mutair A, Shamsan A, Al Mutairi A. Predicting burnout factors among healthcare providers at private hospitals in Saudi Arabia and United Arab Emirates: A cross-sectional study. Appl Sci 2020;10:157.
- 12. Alshreem RM, Baraja M, Almogbel ES. Prevalence of burnout and its impact on self-reported patient care among primary health care physicians at King Abdul-Aziz Medical City in Riyadh region. J Family Med Prim Care 2022;11:4624-30.
- 13. Schaufeli WB, Leiter MP, Maslach C. Burnout: 35 years of research and practice. Career Dev Int 2009;14:204-20.
- 14. Samreen S, Siddiqui NA, Wajid S, Mothana RA, Almarfadi OM. Prevalence and use of dietary supplements among pharmacy students in Saudi Arabia. Risk Manag Healthc Pol 2020;13:1523-31.
- 15. Samreen S, Siddiqui NA, Mothana RA. Prevalence of anxiety and associated factors among pharmacy students in Saudi Arabia: A cross-sectional study. Biomed Res Int 2020;2020:2436538.
- Mahmoud MA, Wajid S, Naqvi AA, Samreen S, Althagfan SS, Al-Worafi Y. Self-medication with antibiotics: A cross-sectional community-based study. Latin Am J Pharm 2020;39:348-53.
- Syed W, Basil A. Al-Rawi M. Assessment of awareness, perceptions, and opinions towards artificial intelligence among healthcare students in Riyadh, Saudi Arabia. Medicina 2023;59:828.
- Syed W, Samarkandi OA, Alsadoun A, Harbi MK, Al-Rawi MB. Evaluation of clinical knowledge and perceptions about the development of thyroid cancer-an observational study of healthcare undergraduates in Saudi Arabia. Front Public Health 2022;10:912424.
- Syed W, Iqbal A, Siddiqui NA, Mothana RA, Noman O. Attitudes and associated demographic factors contributing towards the abuse of illicit drugs: A crosssectional study from health care students in Saudi Arabia. Medicina (Kaunas) 2022;58:322.
- Syed W, Qadhi OA, Barasheed A, AlZahrani E, Basil A, Al-Rawi M. Evaluation of knowledge of risk factors and warning signs of stroke-An observational study among future health care professionals. Front Public Health 2023;11:1131110.
- Bashatah AS, Syed W, Al-Rawi MB, Al Arifi MN. Assessment of headache characteristics, impact, and managing techniques among pharmacy and nursing undergraduates-an observational study. Medicina (Kaunas) 2023;59:130.
- 22. Syed W, Al-Rawi MB, Bashatah A. Knowledge of and attitudes toward clinical trials: A questionnaire-based

study of 179 male third-and fourth-year PharmD undergraduates from Riyadh, Saudi Arabia. Med Sci Monit 2024;30:e943468.

- 23. Martin B, Kaminski-Ozturk N, O'Hara C, Smiley R. Examining the impact of the COVID-19 pandemic on burnout and stress among US nurses. J Nurs Regul 2023;14:4-12.
- 24. Qedair JT, Balubaid R, Almadani R, Ezzi S, Qumosani T, Zahid R, *et al.* Prevalence and factors associated with burnout among nurses in Jeddah: A single-institution cross-sectional study. BMC Nurs 2022;21:287.
- 25. Syed W, Al-Rawi MB. Assessment of hand-washing knowledge and practice among nursing undergraduates in Saudi Arabia. Can J Infect Dis Med Microbiol 2024;2024:7479845.
- 26. Syed W, Al-Rawi MB. Assessment of sleeping disorders,

characteristics, and sleeping medication use among pharmacy students in Saudi Arabia: A cross-sectional quantitative study. Med Sci Monit 2023;29:e942147.

- 27. Monsalve-Reyes CS, San Luis-Costas C, Gomez-Urquiza JL, Albendín-García L, Aguayo R, Cañadas-De la Fuente GA. Burnout syndrome and its prevalence in primary care nursing: A systematic review and metaanalysis. BMC Family Pract 2018;19:59.
- Shahin MA, Al-Dubai SA, Abdoh DS, Alahmadi AS, Ali AK, Hifnawy T. Burnout among nurses working in the primary health care centers in Saudi Arabia, a multicenter study. AIMS Public Health 2020;7:844-53.

Source of Support: Nil. Conflicts of Interest: None declared.