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Association of nurses' mental well-being and professional quality of life (ProQOL) to their resiliency during the COVID-19 pandemic crisis

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ABSTRACT

This study was conducted in determining the factors that affect nurses' resiliency while working in public hospitals during the COVID-19 pandemic. A cross-sectional design was used and self-administered surveys were completed by 420 nurses. Nurses working in public hospitals have had high levels of resilience and mental well-being during the outbreak of the COVID-19 pandemic, with their ProQOL found to be average. Higher levels of mental well-being and ProQOL contributed to developing better resiliency. The study poses the significance of taking preemptive measures on the parts of both the government and the healthcare institutions themselves to assist nursing professionals in enduring disasters such as the pandemic.

1. Introduction

The COVID-19 pandemic is widespread with great magnitude and an unprecedented situation more challenging than what most of us have experienced in our lifetime. To date, there are over 290 million cases of COVID-19 with a death toll totaling 5 million all over the world as to this date (CSSE, 2022).

This large figure shows how apparent the negative impact that this virus has caused globally. According to WHO (2020), Coronavirus disease, previously known as the Novel Coronavirus (NCOV), has caused a pandemic of viral pneumonia. Originally, the first case was recorded in Wuhan, China, and termed the crisis as a pandemic after the virus spread across the world (Larsen et al., 2020). Patients with the said disease suffer symptoms almost identical to flu, starting from fever, cough, nausea, and vomiting to diarrhea, which imposes great challenges for healthcare professionals in detecting the virus (Larsen et al., 2020). The flu-like symptoms have made people unaware that they are already carrying the virus, resulting in a rapid rate of infection. The growing number of confirmed cases since the onset of the pandemic has caused huge damage in various sectors, particularly impacting healthcare (WHO, 2020). In the healthcare sector, nurses have been considered to be one of the most affected groups during the pandemic since they are the primary healthcare providers for (Alsolais et al., 2021).

They are the ones who get in close contact with COVID-19 patients. In this regard, they are constantly at risk of experiencing not only physical but also emotional distress (Aruta et al., 2022).

In line with this pandemic, it is said that nurses will perform quality care service when they are working in a workplace with satisfactory conditions. To this date, the status of employment and the working conditions of healthcare professionals are perilous due to the damage brought about by the outbreak of COVID-19. Uncertainty is inherent in this pandemic, especially for healthcare workers and nurses responding and attending to patients with the disease (Harwood, 2020).

During the pandemic, the mental well-being of nurses has been compromised since they have suffered from various types of psychological distress. For example, the sudden surge of COVID-19 patients led to primary healthcare providers suffering from mental anxieties related to the fear of getting the virus, feelings of distress due to the death of patients and delivering bad news, and restricted movements due to wearing personal protective equipment (Galehdar et al., 2020; Buheji and Buhaid, 2020; Maben and Bridges, 2020). Shreffler et al. (2020) reported that the pandemic had caused major stress to nurses due to uncertainty surrounding treatment,

patients, and their families. Furthermore, the increase in the number of patients may have caused burnout, fatigue, and lack of sleep among attending healthcare professionals. Beyond that, there is an occurrence of occupational stress due to inadequate working conditions and a lack of equipment, staff, and facilities. The nature of the work requires rigorous effort on the part of nurses, and with the sudden increase of patients due to COVID-19, they are forced to work under intense pressure with extended hours and sudden changes in the healthcare routine. The low mental well-being of nurses may lead to burnout, fatigue, failure in rendering better care service, and disturbance of sleeping patterns, which could potentially deteriorate their physical health.

Serving as the primary care providers during the pandemic situation affects the nurses' behavior as a whole, which will be reflected in their personal lives on the physical, psychological, and emotional levels (Korkmaz et al., 2020). During the pandemic, serving in their line of work can increase stress and induce secondary trauma that can lead to psychological and physical complications. Symptoms such as fear, depression, anxiety, post-traumatic symptoms, spiritual and moral distress, and sleep disturbances can affect nurses' problem-solving skills (Korkmaz et al., 2020). Such complications can cause deterioration in nurses' quality of life. Khan et al. (2021) explained that nurses have been especially affected during the pandemic due to several factors that have negatively influenced their quality of life.

During the pandemic, one of the research studies showed that nurses experience moderate to severe anxiety and depression symptoms, while the level of resilience was observed to be low (Roberts et al., 2021). Other literature has shown that as nurses' resilience improves occupational stress also becomes greater Resilience is evoked when nurses experience intense challenges in the midst of harsh conditions. Thus, resilience to cope with the stress experienced is vital. Jose et al. (2020) stressed that resilience in reducing burnout experienced by nurses during the pandemic has been identified. Overall, building resilience, having sufficient knowledge, and having a good support system coming from the staff were considered factors that help the healthcare staff in battling against the adverse mental outcomes of psychological distress (De Kock et al., 2021; Meghani and Lalani, 2020; Pasay-An, 2020).

Hence, the study investigated the resilience of nurses in coping with the psychological and physical complications of stress caused by the pandemic, along with their quality of life. In Saudi, there is a limited study and literature related to the present study. Addressing the needs and concerns of nurses in this trying situation can improve their quality of life by implementing targeted prevention and intervention programs, thereby improving their preventive practices and positive behaviors during the pandemic.

2. Method

2.1. Study design, sample, and setting

A cross-sectional design with self-administered survey questionnaires to gather data from the selected four tertiary public hospitals in Saudi Arabia was used. The nurses were qualified to become participants of the study if they had a license, had at least six months of hospital experience, were currently working in a public or private hospital, and gave consent to partake in the study. The selected hospitals were all tertiary with a bed capacity of 300 to 400 patients. 681 qualified nurses consented to participate, but only 420 answered the survey, with a response rate of 61.67%.

2.2. Data collection

The Ministry of Health Ethical Review Board (MOH IRB H-05-FT-083) approved the data collection. Each survey questionnaire included an attached cover letter explaining the study's purpose, the right to refuse to participate, and that participation in the study implies consent. Confidentiality was ascertained as the survey questionnaire did not ask for any data that could expose the identity of the participants. After the ethical approval was granted, the researcher sent a copy of the survey questionnaire to each department in the selected tertiary hospitals for approval.

2.3. Measurement

Three standard self-administered questionnaires were utilized in this study: the Resilience Scale (Shi et al., 2021), the "Warwick–Edinburgh Mental Well-Being Scale" (Tennant et al., 2007), and the "Professional Quality of Life (ProQOL)" questionnaire (Stamm, 2010). The resilience of the nurses during COVID-19 was assessed using the 18-item Resilience Scale. Nurses responded to each item (e.g., "Able to adapt to change") on a 5-point scale (0=not resilient to 4=very highly resilient), a higher score means a greater individual resilience level. This tool is the most generally used for assessing the psychological resilience of an individual and has high discriminant and predictive validity (Velickovic et al., 2020). In one study conducted in China, the reliability coefficient of the Resilience Scale was found to be 0.89 (Shi et al., 2021).

An Italian tool version reported good psychometric properties with a Cronbach's alpha of 0.88, showing good internal consistency (Callegari et al., 2016). The tool was also translated into a Brazilian version, and both 13-item and 14-item models have shown Cronbach's alphas of 0.83 and 0.82, respectively (Damásio et al., 2011). The "Warwick–Edinburgh Mental Well-Being Scale" was used to assess the mental state of the nurses during the outbreak of COVID-19. Nurses' responses were measured on a 6-point scale (1=none of the time to 6

=all of the time) with high scores meaning positive mental well-being. A previous study has shown that the tool has acceptable reliability and validity in assessing the mental well-being of an individual (Mavali et al., 2020).

A recent study reported that the same tool has high internal consistency with a Cronbach's alpha of 0.89 (Vaingankar et al., 2017). The Chinese version of the tool was used to test its validity among Chinese students, and it has been shown that the shortened version and the original version of the scale have high internal consistency, with Cronbach's alphas of 0.930 and 0.884, respectively (Fung, 2019). This tool was also applied among teenagers in England and Scotland, which revealed a strong internal consistency (Clarke et al., 2011)

The Professional Quality of Life (ProQOL) questionnaire was used to assess the feelings of the nurses who have dealt with traumatic experiences during the outbreak of COVID-19 (Stamm, 2010). The tool is composed of three different 10-item subscales, including "compassion satisfaction (CS) and compassion fatigue (CF)," which is further composed of two subscales: burnout (BO) and secondary traumatic stress (STS). Items were rated on a 5-point scale (1=never to 5=very often). "A summation of all scale items was used: for example, CS=summation items 3, 6, 12, 16, 18, 20, 22, 24, 27, 30; BO=summation items 1, 4, 8, 10, 15, 17, 19, 21, 26, 29; and STS=summation items 2, 5, 7, 9, 11, 13, 14, 23, 25, 28. Each category of summation score ranges from 10 to 50. For CS, a score ≤22 means a lower CS level, 23–41 denotes average levels, and ≥42 specifies high levels. For BO and STS, a score of ≤22 shows lower levels, 23–41 indicates average levels, and≥42 reveals high levels of BO. The CS scale resulted in a Cronbach's alpha of 0.88, while the BO scale gave 0.75 and the STS scale 0.81 (Stamm, 2010)."

The tool was translated to a Greek version, and it has been shown that Cronbach's alphas for "compassion satisfaction, secondary traumatic stress, and burnout" were 0.87, 0.83, and 0.73, respectively, which means that the tool has good psychometric properties among nurses in Greece (Misouridou et al., 2021). The validity of the tool was tested in Spain and Brazil, and it was shown that it has good psychometric properties since the reliabilities of the Spanish version were 0.774 for "compassion satisfaction," 0.782 for "secondary traumatic stress," and 0.537 for burnout. For the Portuguese version, Cronbach's alphas for compassion satisfaction, secondary traumatic stress, and burnout" were 0.857, 0.770, and 0.654, respectively (Galiana et al., 2017).

2.4. Data analysis

Data were examined using SPSS version 24.0. The demographic characteristics, resilience, mental well-being, and ProQOL of the nurses were presented and described using the frequencies, percentage, mean, and standard deviation. The Kruskal–Wallis value and Spearman correlation were used to test the relationship between mental well-being and ProQOL to their individual resilience and to reveal the significant differences between mental well-being and ProQOL with respect to their individual resilience. The statistically significant level is less than 0.05 (p-value).

3. Results

3.1. Demographic information

Table 1 shows the demographic information of nurses.420 nurses finish the survey with an average age score of 33.55±5.86 years old. Most of the participants were female, comprising 60.5% of the total sample population. 65.7% reported that they were married, and the majority (92.1%) were BSN graduates. The average of the total years of experience in their respective current hospitals was 8.75±6.19. They served in 12 departments/units with the highest percentage in the emergency department (26.7%). The mean of the monthly income was 9,151.64±4,312.96 mean of the working hours per week was 105.27±809.49, and the mean of the total years of experience as a nurse was 10.47±6.01. The majority served in government hospitals (96.2%).

3.2. The individual resilience of nurses

Table 2 shows the individual resilience of nurses was computed using a 5-point Likert scale. The average mean score of nurses' individual resilience was high (3.88±0.65). All 18 items achieved high levels.

3.3. The mental well-being of nurses

Table 3 shows the mental well-being of nurses was determined using a 5-point Likert scale. The average mean score of the mental well-being of nurses was high (3.98±0.75). All 14 items achieved high levels.

3.4. The professional quality of life (ProQOL)

Table 4 reports the professional quality of life of the nurses was measured using a 5-point Likert scale. The total score was of an average level (37.35±6.87). Compassion satisfaction (CS) had an average level of 40.12±7.35, followed by burnout (BO) with a total score of 37.19±7.28, and then secondary traumatic stress (STS) with a total score of 34.75±8.69.

3.5. Relationship of mental well-being and professional quality of life (ProQOL) to their individual resilience

Table 5 shows the relationship between mental well-being and ProQOL to nurses' resilience was

determined using the Spearman correlation test, and there was a significant high and positive correlation between mental well-being and individual resilience (r=0.63, p<0.01). There was a significant high and positive correlation between the professional quality of life (ProQOL) and individual resilience (r=0.70, p<0.01).

Table 1: Demographic information (N=420)

Factor		N (%) M±SD
Age		33.55±5.86
Gender	Male	166(39.5%)
	Female	254(60.5%)
Marital Status	Single	117(27.9%)
	Married	276(65.7%)
	Separated	27(6.4%)
Educational attainment	BSN graduate	387(92.1%)
	Master's degree	29(6.9%)
	Ph.D. degree	4(1%)
Total years of experience in the current hospital		8.75±6.19
Area of practice	Emergency department	112(26.7%)
	Outpatient department	39(9.3%)
	Medical department	47(11.2%)
	Surgical department	24(5.7%)
	ICUs	56(13.3%)
	Operating room	13(3.1%)
	Obstetric department	25(6%)
	Artificial kidney unit	12(2.9%)
	Nursing administration	37(8.8%)
	Private ward	4(1%)
	Pediatric ward	23(5.5%)
	General ward	28(6.7%)
Monthly income (SAR)		9151.64±4312.96
Working hours per week		105.27±809.49
Total years of experience as a nurse		10.47±6.01
Type of your hospital	Government hospital	404(96.2%)
	Private hospital	16(3.8%)

Table 2: The descriptive analysis of individual resilience (N=420)

Statement	M±SD
1. In a crisis or disaster situation, I calm myself and focus on taking useful actions	4.08±1.00
2. I'm usually optimistic. I see difficulties as temporary and expect to overcome them	4.12±0.96
3. I cannot tolerate high levels of ambiguity and uncertainty about situations	3.53±1.15
4. I adapt quickly to new developments. I'm good at bouncing back from difficulties	4.07±0.92
5. I'm playful. I find the humor in rough situations and can laugh at myself	3.86±1.04
6. I'm able to recover emotionally from losses and setbacks. I have friends I can talk with. I can express my feelings to others and ask for help. Feelings of anger, loss, and discouragement don't last	3.95±0.99
7. I feel self-confident, and appreciate myself. and have a healthy concept of who I am	4.10±0.89
8. I'm curious. I ask questions. I want to know how things work. I like to try new ways of doing things	4.00±0.99
9. I do not learn valuable lessons from my experiences and from the experiences of others	3.29±1.35
10. I'm good at solving problems. I can use analytical logic, be creative, or use practical common sense	3.95±0.94
11. I'm good at making things work well. I'm often asked to lead groups and projects	3.98±0.95
12. I'm very flexible. I feel comfortable with my paradoxical complexity. I'm optimistic and pessimistic, trusting and cautious, unselfish and selfish, and so forth	3.79±1.02
13. I prefer to work without a written job description. I'm more effective when I'm free to do what I think is best in each situation	3.62±1.22
14. I'm not a good listener. I have good empathy skills	3.46±1.16
15. I'm non-judgmental about others and adapt to people's different personality styles	3.92±1.01
16. I'm very durable. I hold up well during tough times. I have an independent spirit underneath my cooperative way of working with others	4.04±0.93
17. I've been made stronger and better by difficult experiences	4.06±0.98
18. I've converted misfortune into good luck and found benefits in bad experiences	3.95±0.98
Individual Resilience	3.88±0.65

Table 3: The descriptive analysis of the mental well-being of nurses (N=420)

Statement	M±SD
1. MHWB1.I've been feeling optimistic about the future	4.00±1.09
2. MHWB 2. I've been feeling relaxed	3.85±1.08
3. MHWB 3. I've been feeling interested in other people	3.85±1.07
4. MHWB 4. I've had the energy to spare	3.82±1.03
5. MHWB 5. I've been dealing with problems well	4.06±0.93
6. MHWB 6. I've been thinking clearly	4.04±0.96
7. MHWB 7. I've been feeling good about myself	4.10±0.94
8. MHWB 8. I've been feeling close to other people	3.95±1.04
9. MHWB 9. I've been feeling confident	4.12±0.97
10. MHWB 10. I've been able to make up my own mind about some things	4.01±0.94
11. MHWB 11. I've been feeling loved	3.84±1.15
12. MHWB 12. I've been interested in new things	4.03±1.00
13. MHWB 13. I've been feeling cheerful	3.94±1.04
14. MHWB 14. I've been feeling optimistic about the future	4.10±1.00
15. Mental health well-being	3.98±0.75

Table 4: The descriptive analysis of individual resilience (N=420)

Statement	M±SD
3. I get satisfaction from being able to care for people	4.08±0.95
6. I feel invigorated after working with those I care	3.75±1.10
12. I like my work as a nurse	4.10±1.04
16. I am pleased with how I am able to keep up with caring techniques	3.99±0.98
18. My work makes me feel satisfied	3.95±1.02
20. I have happy thoughts and feelings about those I care about and how I could	4.02±0.95
22. I believe I can make a difference through my work	3.98±0.96
24. I am proud of what I can do to care	4.10±0.95
27. I have thoughts that I am a "success" as a nurse	3.98±0.95
30. I am happy that I chose to do this work	4.17±0.97
Compassion Satisfaction (CS)	40.12±7.35 Average
1. I am happy	3.92±1.03
4. I feel connected to others	3.95±0.95
8. I am not as productive at work because I am losing sleep over the traumatic experiences of a patient I care	3.10±1.35
10. I feel trapped by my job as a nurse	3.43±1.39
15. I have beliefs that sustain me	3.78±1.15
17. I am the person I always wanted to be	3.97±0.98
19. I feel worn out because of my work as a nurse	3.68±1.17
21. I feel overwhelmed because my case workload seems endless	3.68±1.16
26. I feel "bogged down" by the system	3.51±1.20
29. I am a very caring person	4.16±0.95
Burnout (BO)	37.19±7.28 Average
2. I am preoccupied with more than one person I care	3.83±1.07
5. I jump or am startled by unexpected sounds	3.44±1.14
7. I find it difficult to separate my personal life from my life as a nurse	3.53±1.29
9. I think that I might have been affected by the traumatic stress of those I care	3.45±1.29
11. Because of my work, I have felt "on edge" about various things	3.56±1.20
13. I feel depressed because of the traumatic experiences of my patients	3.39±1.25
14. I feel as though I am experiencing the trauma of someone I have cared	3.48±1.22
23. I avoid certain activities or situations because they remind me of past	3.37±1.22
25. As a result of my caring, I have intrusive, frightening thoughts	3.26±1.35
28. I can't recall important parts of my work with trauma victims	3.45±1.21
Secondary traumatic stress (STS)	34.75±8.69 Average
The professional quality of life	37.35±6.87

Table 5: The relationship of mental well-being and professional quality of life (ProQOL) to their individual resilience (N=420)

	Variables	1	2	3	4	5	6
1	Individual resilience	1					
2	Mental health well-being	0.70**	1				
3	Compassion satisfaction (CS)	0.65**	0.72**	1			
4	Burnout (BO)	0.58**	0.57**	0.67**	1		
5	Secondary traumatic stress (STS)	0.50**	0.41**	0.49**	0.83**	1	
6	The professional quality of life	0.63**	0.62**	0.78**	0.95**	0.90**	1

**: $p \leq 0.01$

3.6. Significant differences in mental well-being and professional quality of life (ProQOL) with respect to their individual resilience

Table 6 reports Kruskal–Wallis test revealed significant differences in mental well-being and professional quality of life (ProQOL) with respect to their individual resilience, with an advantage for a high level. The levels of the total score differ in terms of individual resilience, with an advantage for a high level (MD=316.92, X2=109.066, p<0.001) as described in.

Table 6: The difference between mental well-being and professional quality of life (ProQOL) to their individual resilience

Variables		MD	X^2/p value
Professional quality of life	Low	5.88	109.066***/≤0.001
	Average	179.41	
	High	316.92	
Mental health well-being	Very low	5.33	196.296***/≤0.001
	Low	66.90	
	Moderate	89.68	
	High	187.65	
	Very high	294.89	

***: $p \leq 0.001$

4. Discussion

This investigation has shown that the nurses working in selected public hospitals in Riyadh Province, Saudi Arabia, have had high resilience levels during the outbreak of the COVID-19 pandemic. This result corroborates the findings of previous studies conducted in the same country where healthcare staff reported moderate resiliency levels (Balay-Odao et al., 2021; Al-Omar et al., 2019; Elsayes and Abdelraof, 2020). Nurses become resilient because of their knowledge and their usage of effective coping and adapting mechanisms whenever they are faced with adversity (Ramalisa et

al., 2018). One study revealed that support from organizations was also one of the factors in developing nurse resilience (Jo et al., 2021). It is possible that the nurses in Saudi Arabia have received support from healthcare institutions through the process of receiving various resilience interventions and training programs. The findings suggest that the healthcare professionals working in Saudi Arabia are equipped in handling distress brought on by the outbreak of the pandemic. In fact, previous studies in the Riyadh Region have shown that clinical nurses have high COVID-19 hospital preparedness, while primary healthcare leaders have shown that they were trained regarding pandemic preparedness (Balay-Odao et al., 2021; Alakeely et al., 2021).

This could indicate that nursing professionals in the region may potentially have high resiliency due to having attended risk disaster preparedness programs, which allowed them to be well equipped with adversities such as the COVID-19 pandemic. It is important to consistently implement risk disaster and management programs in preparation for sudden local or global catastrophic events such as the pandemic.

The nurses in this study were also shown to have greater levels of mental well-being, which means that nurses have strong mental health statuses. This result may add to our understanding that nurses experience different mental health statuses amidst the pandemic. For instance, a study conducted in Kenya between August and November 2020 revealed that the nurses suffered from psychological burdens such as depression, anxiety, burnout, and stress, which affected their mental well-being during the pandemic (Ali et al., 2021). In Malaysia, a study performed from April to August 2020 revealed that a majority of the nurses suffered from moderate to severe stress levels, with some feeling depressed because of COVID-19 (Chui et al., 2021). One study in China collected data between May 15 and 31 of 2020 from medical healthcare workers working in Hubei and revealed that they have prevalently experienced anxiety, insomnia, depression, and post-traumatic disorder throughout the pandemic (Guo et al., 2021).

However, the current finding is in contrast with studies conducted in the past that show that the majority of the nurses working in Saudi Arabia were showing symptoms of depression and distress (Alhurishi et al., 2021; AlAteeq et al., 2020). One plausible reason for the inconsistencies in the results despite the similarities in the countries being studied might be that the previous studies were conducted in the time frame between April and November 2020, which was at the onset of the pandemic and lockdown, whereas the current study performed later in the year. During the initial phase of the sudden crisis, various problems were encountered by the nurses, such as a shortage of protective equipment, medical supplies, and hospital beds, and the fear of infection (Al Thobaity and Alshammari, 2020). Most probably, the nurses' mental health was affected because of their inability to adjust quickly to the challenges presented to them. Unlike the situation now, where the Saudi health ministry has already created counteractive measures to mitigate further damage, the situation might have allowed nurses to become more confident in handling COVID patients presently. It is then recommended that healthcare institutions continually support various damage control measures against COVID-19 in safeguarding nurses' mental health status.

The ProQOL of nurses was found to be average, with the compassion satisfaction (CS) of the nurses on an average level, followed by burnout (BO), and then secondary traumatic stress (STS). This result corroborated with other studies showing that the ProQOL of nurses in Saudi Arabia and in other countries was average in all domains (Inocian et al., 2021; Wong et al., 2022). This could indicate that the nurses could still maintain satisfaction despite facing burnout and stress during the COVID-19 crisis. In a 2015 study, it was reported that a healthy and positive organizational culture strengthens the quality of life of nurses (Kim and Ryu, 2015). Nurses in this study might have experienced a more positive workplace despite the occurrence of the pandemic. For example, recently, the Saudi ministry budgeted satisfactory funds for the hospitals in addressing the pressing concerns of COVID-19, which could have an effect on the ProQOL of the healthcare workers. Financial compensation for front liners can be one of the factors in motivating nurses to work despite the pandemic. Some countries have rolled out national hazard pay policies for frontline nurses and other healthcare professionals, such as in Poland. Nurses in Poland were provided with monthly cash benefits to compensate them for their absence from work after getting in contact with COVID-19 patients, while financial bonuses were offered to medical staff who had rendered their service amidst COVID-19 in other countries (Williams et al., 2020). One study performed in Ethiopia reported that equitable salary is essential in maintaining the satisfaction of nurses (Ayalew et al., 2019).

Salary, along with other forms of compensation, is possibly one of the most motivating and satisfying factors that nurses have been focusing on while they do their work. Other factors that could possibly enhance the quality of life of nurses might be related to other COVID-19 response strategies that have supported health workers. Countries such as Romania, Malta, and Poland implemented free accommodation for healthcare professionals once they were isolated from their families amidst the COVID-19 pandemic. In some parts of the UK, healthcare professionals were given free access to transportation, while in Finland, they were given free-of-charge parking near healthcare facilities (Williams et al., 2020). The alleviation of the burden of the nurses through the implementation of the protocols mentioned above in different countries may have greatly contributed to maintaining the ProQol of nurses. This is the reason why support from the government plays a vital role in encouraging every sector, particularly healthcare

institutions, to work despite the presence of the pandemic.

Another significant result is that there was an association between mental well-being and the individual resilience of the nurses. This finding agrees with the results of other studies that show that resilience is linked with mental well-being and that it serves as a factor to help in preserving the mental state (Bogaerts et al., 2021; De Kock et al., 2021). There were pieces of evidence provided by previous studies that suggest that resiliency was the defense of an individual in battling negative mental health (Cai et al., 2020; Shacham et al., 2020; Xiao et al., 2020). When a person becomes resilient, they become well-versed in handling situations as they become more used to facing tough challenges. Such a response to adversity could have developed the character of the nursing professionals, which would then produce stronger mental health outcomes. One way to enhance and maintain the resiliency of nursing professionals is to encourage them to attend various intervention programs. For instance, a 2015 study conducted a brief Stress Management and Resiliency Training (SMART) program among new nurses, and it was found that the nurses who received the intervention relatively improved their mindfulness and resiliency (Chesak et al., 2015). These findings indicate how essential it is to integrate interventions in the nursing practice in order to foster resilience in healthcare professionals.

Finally, there were significant differences and positive correlations between ProQOL and individual resilience. This finding is also supported by previous studies that have reported that nurses' resiliency is a significant predictor of professional quality of life (Wong et al., 2022; Atay et al., 2021). A study conducted in 2020 revealed that the professional quality of life affected resilience. It was stated that when burnout decreases, resilience increases, and compassion satisfaction has a direct relationship to resilience (Sarcia, 2020). Studies have also shown that nurses must have strong psychological resilience to have a low level of fatigue (Gerami Nejad et al., 2019). This result implies that when nurses feel more satisfied with their work and when they experience a low level of burnout and stress, or if they have a better professional quality of life, they develop better individual resiliencies. This is probably because satisfied individuals possess positive emotions that allow them to build resilience. Trampe et al. (2015) reported that on average, a person may experience positive emotions twice more as negative emotions. During this pandemic, research with representative data from the US and UK found that resilience is greater for those people with positive emotions than for those with negative emotions (Israelashvili, 2021). This is one of the reasons why nurses need to maintain high satisfaction to keep positive emotions for resiliency to occur. It is then suggested to promote policies that develop high satisfaction, such as rewards for nurses' exemplary performance and other positive reinforcements.

5. Conclusions

In conformity with the findings of the other researchers conducted in the same locality, the findings proved that the nurses working in public hospitals in Saudi Arabia have had high levels of resilience and mental well-being during the outbreak of the COVID-19 pandemic, with their ProQol found to be average. Higher mental well-being and professional quality of life contributed to developing better resiliency, signifying the importance of taking preemptive measures, on the part of both the government and the healthcare institutions themselves, to assist the nursing professionals in enduring disasters such as the pandemic.

6. Implications for nursing practice

This study provided an avenue to explore the significance of resiliency interventions targeting nursing professionals. The study provides evidence that critical variables are necessary for building resiliency, particularly the mental well-being and the professional quality of life of healthcare professionals. In order to realize the enhancement of the resiliency of healthcare professionals, incorporating resiliency interventions in risk reduction and preparedness programs and other policies, along with support from the government and the institution itself in regard to protecting the resiliency of nurses, are necessary to alleviate the negative impact brought by the pandemic.

In terms of enhancing the ProQOL of the nurses, it is therefore recommended that every healthcare institution should provide the safer working environment possible, particularly during the pandemic. Providing healthcare facilities with sufficient protective equipment can greatly help healthcare professionals in alleviating the burden they experience. Supporting frontline healthcare workers by offering monetary compensation, hazard allowance, and other forms of benefits amidst the pandemic is also suggested to enhance their ProQOL. To preserve the healthy nurses' mental well-being and other healthcare professionals, a support system is needed to help them manage the psychological burden. Furthermore, teaching them skills and knowledge in combatting psychological distress through holding capacity-building seminars is also suggested to contribute to keeping nurses mentally healthy despite the occurrence of the pandemic.

7. Limitations and future directions

This finding has some limitations. The study focused only on the nurses working in the Riyadh Region, which calls for further studies with a much larger sample population. Using a wider scope of the population will allow a more comprehensive view of the resiliency of nurses in Saudi Arabia. Furthermore, the study tested only the relationship between the concerned variables and the self-

assessed perception levels of the nurses. The possible barriers that could influence the resiliencies were not thoroughly explored in the study. Moreover, further studies may be carried out to test other negative traits that impact the resiliency of nursing professionals.

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Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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