The Impact of COVID-19 on Nurses' Feelings, Stress, Coping, and Motivation in Palestinian Treatment Centers of Corona

Wafaa Menawi[†,1], **Shatha Meri**[2], **Ahmad A. Hanani**[1,*]

Abstract: **Background:** Frontline nurses of COVID-19 found themselves in an unfamiliar new disease work environment, fighting to adapt and control the stress while working at covid-19 centers in Palestine. **Aim:** To investigate the impact of COVID-19 on nurses' feelings, stress, coping, and motivation in COVID-19 Palestinian treatment Centers. **Method:** A descriptive cross-sectional design was conducted between Mid of July to the end of October 2021 by recruiting a purposive sample of 390 nurses who worked at the Ministry of Health during COVID-19 pandemic treatment centers. The nurses filled out the COVID-19 Health Personnel Questionnaire with Cronbach's Alpha > 0.9. **Results:** Palestinian frontline nurses felt that financial incentives constitute a motivator to deal with corona patients. However, they do their duties as health professionals since they must follow ethical obligations (M= 3.78 and 3.75) correspondingly. Nurses have been resentful of wearing PPE every day and being a cause of transmitting the virus to Family or friends. These were the highest stressors (M= 3.91, 3.91, 3.82). They agreed that trusting the staff to care for them in case of infection with COVID-19 and working with all health professionals to overcome COVID-19 will reduce their stress (M= 3.70 and 3.68) in a high score. Whereas updating knowledge about COVID-19 was the highest coping mechanism by nurses (M= 3.93), followed by the usage of appropriate PPE (M=3.79). Also, they agreed that COVID-19 vaccinations were the highest motivating factor (M= 3.80), followed by family support (M=3.79), according to Palestinian frontline nurses. **Conclusion:** The feeling, coping, and motivation mechanisms of Palestinian frontline nurses have been impacted by working with an unfamiliar infectious agent, disturbed by a long-time use of PPE and isolation from their families. Family-supportive dependent strategies should be adopted to keep our frontline nurses working with high performance and accepted quality in risky places, struggling countries, and crises.

Keywords: Nurse, Stress, Coping, Motivation, COVID-19

تأثير جائحة كوفيد-19 على مشاعر الممرضين، والتوتر، وآليات التكيف، والدافع في مراكز العلاج من كورونا في فلسطين

وفاء الميناوي[1,†]، وشذى مرعي[2]، وأحمد حنني[1,*]

الملخص: خلفية البحث: الممرضون العاملون في الخطوط الامامية لمواجهة كوفيد-19، وجدوا أنفسهم في بيئة عمل غير مألوفة مع المرض الجديد. حيث كانوا يحاولون التأقلم والسيطرة على التوتر أثناء العمل في المراكز المخصصة للعمل مع مرضى كورونا (كوفيد -19) في فلسطين. **الهدف:** معرفة تأثير كوفيد -19 على مشاعر الممرضين، التوتر، أليات التأقلم والدوافع لديهم اثناء العمل في مراكز العلاج من مرض (COVID-19). **المنهجية:** تم إجراء دراسة مستعرضة ما بين منتصف يوليو ونهاية أكتوبر 2021، حيث تم اختيار 390 ممرضا وممرضة بواسطة العينة المتيسرة ممن عملوا في مراكز علاج كوفيد-19 التابعة لوزارة الصحة الفلسطينية، تمت تعبئة اداة الدراسة من قبل العاملين، وكان معامل ألفا كرونباخ > 0.9. **النتائج:** شعر الممرضون العاملون في الخطوط الامامية لمواجهة كوفيد-19 في فلسطين، أن الحوافز المالية تشكل دافعاً للتعامل مع مرضى كورونا. مع ذلك، فإنهم يقومون بواجباتهم كمحترفين صحيين حيث يتعين عليهم، الالتزام بالواجبات الاخلاقية (بمتوسط = 3.78 و3.75 على التوالي). كان الممرضون مستائين من ارتداء معدات الوقاية الشخصية يومياً، ومن كونهم قد يكونوا سبباً في نقل المرض إلى عائلاتهم أو أصدقائهم. كانت هذه أعلى عوامل التوتر (بمتوسط = 3.91، 3.91، 3.82). وأعربوا عن اتفاقهم على أن الثقة في الطاقم لرعايتهم في حال الاصابة بمرض كورونا، والعمل مع جميع المحترفين الصحيين للتغلب على فيروس كورونا سيقلل من توترهم (بمتوسط = 3.70 و3.68) بدرجة عالية. في حين أن تحديث المعرفة حول مرض كورونا كان أعلى ألية التأقلم لدى الممرضين (بمتوسط = 3.93)، ثم استخدام معدات الوقاية الشخصية المناسبة (بمتوسط = 3.79)، كما أنهم اتفقوا على أن التطعيمات ضد مرض كورونا كانت أعلى عامل محفز (بمتوسط = 3.80) ثم تلاه دعم الاسرة (بمتوسط = 3.79)، حسب ما أفاد به الممرضون العاملون في الخطوط الامامية لمواجهة مرض كورونا في فلسطين. **الاستنتاجات:** لقد تأثر مشاعر، وأليات التأقلم، والدوافع لدى الممرضين العاملين في الخطوط الأمامية لمواجهة فيروس كورونا في فلسطين من خلال العمل مع مرض معدٍ غير مألوف. وثم لاضطرابها بسبب الاستخدام الطويل لمعدات الوقاية الشخصية والعزلة عن أسرهم. واوصت الدراسة بوجوب استراتيجيات تعتمد على دعم الأسرة للحفاظ على إداء عالٍ وجودة مقبولة في أماكن الخطر، والبلدان التي تعاني من أزمات.

الكلمات المفتاحية: التمريض، المشاعر، التأقلم، الدافعية، كوفيد-19

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† She passed away, may God have mercy on her, on June 24, 2024

1 Department of Public Health, Faculty of Medicine and Health Sciences, An-Najah National University, Nablus, Palestine.

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¹ قسم الصحة العامة، كلية الطب وعلوم الصحة، جامعة النجاح الوطنية، نابلس، فلسطين.

* الباحث المراسل: أحمد حنني a.hanani@najah.edu،

² برنامج ادارة الصحة العامة، كلية الدراسات العليا، جامعة النجاح الوطنية، نابلس، فلسطين.

*Corresponding author: Ahmad A. Hanani, a.hanani@najah.edu,
00970598900689, orcid: 0000-0003-3713-5016
2 Public Health Administrative Program, Faculty of Graduate Studies, An-
Najah National University, Nablus, Palestine.

Background

The sudden appearance and expansion of coronavirus disease 2019 (COVID-19) globally have led to changes in the face of the world, including health, economy, industry, and education (Kulal & Nayak, 2020; Hanani, Badrasawi, Zidan, & Hunjul, 2022). COVID-19 caused significant harm to public health within a few months and financial and economic damages in many nations; it crossed 249 million cases globally, with 5,000,383 confirmed deaths (Ma, Soomro, & Deng, 2021). Here, healthcare professionals (HCPs), especially nurses, have been on the frontline of caring for the infected; nurses fought the COVID-19 Pandemic to promote global health as expert caregivers, giving guidance and information to parents, families, and communities around the world (Ashtiani, Fakhari, Nasiri, 2014). In particular, the demand for healthcare during COVID-19 faced many challenges. These included inadequate infrastructure, scarce resources, shortage of personal protective equipment (PPE), reluctance of healthcare professionals to deal with an unknown virus, and the absence of protocols for treatments (Rahimyan & Bozorgi, 2021). Add to this, the burden of work, lack of experience in managing infectious diseases, and the vast number of cases and fatalities, which increase the risk of mental health issues that may impact the psychological well-being of HCPs (Giusti et al., 2020).

According to the World Health Organization (WHO), around 59% of all healthcare professionals are nurses, and the global workforce of nurses is currently approximately 28 million (WHO, 2020). This number is expected to increase (Hassmiller, & Pulcini, 2020). Nurses are considered the largest sector of healthcare professionals who worked with the coronavirus and made double efforts in hospitals or triage and quarantine centers (Kameg, 2021). The likelihood of being harmed, especially for frontline nurses, increases fear and stress, which may affect their health, well-being, and work effectiveness (Ahorsu et al., 2022). Most studies of COVID-19 have reported that nurses' daily routine was influenced, including nurses' feelings, stress, motivation factors, and other mental health issues of nurses and HCPs (Al-Hawajreh, 2011; Yuanyuan et al., 2020; Kameg, 2021). In a study by Khanal, Devkota, Dahal, Paudel, & Joshi (2020), 41.9% of health workers had anxiety symptoms, 37.5% suffered from depression, and 33.9% had insomnia; the same author found that nurses experienced more anxiety symptoms than other health workers.

At the start of the COVID-19 outbreak in Palestine, the government acted quickly, implementing mobility restrictions and social distance measures between the West Bank governorates as a prophylactic precaution. All positive cases were tracked, and medical attention and observation were sought (AlKhaldi, Kaloti, Shella, Meghari, & Dalo, 2020). The virus was common throughout Palestinian governments, wreaking havoc on the Palestinian population, economy, industry, factory closures, overcrowding, undersupply, and food insecurity (Hashim, Uakkas, Reda, Ramadhan, & Al Mostafa, 2022). Following the confirmation of the first seven cases identified with COVID-19 in Bethlehem in March 2020, healthcare professionals (HCPs) noted a significant increase in workload due to public anxieties about working with COVID-19 patients; HCPs have been harassed and discriminated against (Maraqa, Nazzal, & Zink, 2020). Most HCPs, including nurses' psychological reactions, were due to their vulnerability and the possible risk that disrupted their physical, social, and psychological tolerance to their needs, health conditions, incentives, work pressures, nurses' ages, and the specific coping mechanisms they utilized (Cho & Kim, 2021).

Nurses on the front lines and other COVID-19 HCPs found themselves in an unexpected and unknown new illness work environment, battling to adapt and handle the stress and worry that came with it (Liu et al., 2019). Nurses experienced negative work pressure, a constant state of emergency for the majority of their days, and a sense of isolation and helplessness while dealing with COVID-19 as a health concern (Iheduru-Anderson, 2021). According to studies, nurses' psychological problems during the COVID-19 pandemic may reflect their working conditions (Kwon, Hwang, & Hong, 2020). There was a lack of information about the elements that may induce stress in frontline nurses, the coping techniques they employed, and the factors that drove them to work in the face of the pandemic (Jernigan, 2020).

A COVID-19 study is required to scientifically categorize nurses' subjective psychological responses while caring for patients with COVID-19 (Ren et al., 2021). Nurses' responses may differ based on individual personal perceptions and experiences; as a result, it is crucial to understand nurses' feelings and the underlying factors that contributed to their anxiety and stress, as well as the coping strategies they used to keep working with COVID-19 patients (Bhatti, Soomro, & Shah, 2021). During the COVID-19 pandemic, healthcare workers (HCWs) reported a high level of fear and stress, according to El Sharif et al. (2022). Evidence of the COVID-19 pandemic's impact on the mental health of Palestinian healthcare professionals is lacking and has been disregarded during the COVID-19 pandemic (Ahmead, El Sharif, & Asad, 2022). The current study aimed to explore the impact of COVID-19 on the feelings, stress levels, coping mechanisms, and motivation of Palestinian nurses working in COVID-19 treatment centers. The study sought to address the primary research question:

What was the impact of COVID-19 on the feelings, stress, coping strategies, and motivation of nurses in Palestinian COVID-19 treatment centers?

Method

Study Design: A descriptive, quantitative cross-sectional design is adopted to assess the factors that impact nurses' feelings, stress, coping, and motivation mechanisms in Palestinian treatment centers of corona used by the nurses to keep working in the face of the COVID-19 pandemic.

Study population and Setting: The study was performed in three Ministry of Health centers that treat COVID-19 patients at West Bank- Palestine hospitals by selecting all the nurses who worked with COVID-19 patients from mid-July to the end of October 2021.

Study Sample: The authors used a purposive non-probability sampling technique for this cross-sectional study by recruiting all the accessible nurses who worked in COVID-19 treatment centers to be more readily accessible and convenient and selecting only those who are relevant to the research design. The total number of nurses who worked at three corona treatment centers was 390, according to the administration offices. Therefore, 390 questionnaires were distributed, and the returns were 277 as follows: 102 questionnaires were from Nablus MoH corona centers in the north of Palestine, 72 questionnaires were from Ramallah corona centers in the middle of Palestine, and 103 questionnaires from Hebron corona center in the south of Palestine.

Data Collection Tool: COVID-19 Health Personnel Questionnaire (CHPQ) that was previously adopted by Windarwati et al. (2021) has been translated, adapted, and validated to be suitable and responsive to the study aims and participants. The current study questionnaire had six sections and 73 questions. The first section focused on the demographic profiles of nursing staff (13 items). The second to sixth sections of the questionnaire focused on nurses' feelings (15 questions), causal factors of their stress (17 questions), factors that reduced their stress (10 questions), coping mechanisms (8 questions), and factors that motivated nurses while working at corona treatment centers (10 questions). A Likert-type scale was used to assume that the strength/intensity of the experience is linear, i.e., on a continuum from strongly disagree to strongly agree. Respondents were offered a choice of one to five responses, with the neutral point being neither agree nor disagree, whereby one refers to strongly disagree, two refers to disagree, three refers to neutral, four refers to agree, and finally, five refers to agree strongly as shown in the table below.

Validity and Reliability of the Tool: The validity of the study tool (COVID-19 Health Personnel Questionnaire) was examined by content validity and internal consistency validity. Four multidisciplinary experts evaluated the content validity. Accordingly, the items were modified.

A pilot study was performed for 5% of nurses from the target population excluded from the sample size to check the validity and the internal consistency reliability of the COVID-19 Health Personnel Questionnaire that was adapted and adopted in the current study by using the correlation coefficients Cronbach Alpha. The pilot study was conducted after permission was obtained, information about the research and its objectives were provided to the participating nurses, and a consent form was signed. As a result of the pilot study, the questionnaire was clear, easy to understand, and gave a good interpretation of the data and minimum participant errors. Cronbach's Alpha was 0.973 for nurses' feelings during the COVID-19 pandemic, 0.975 for stress-contributing factors, 0.956 for factors helping to reduce stress among nurses during the COVID-19 pandemic, 0.921 for individual coping strategies, and 0.918 for factors motivating nurses during the COVID-19 outbreak. Cronbach Alpha was 0.8 in a study like ours using the same tool before adaptation (Khalid, Khalid, Qabajah, Barnard, & Qushmaq, 2016).

Statistical Analysis: The Statistical Package for Social Sciences (SPSS) version 26 was used to analyze the gathered data. The data were coded, entered, and double-checked for outliers or errors. The Kolmogorov-Smirnov and Shapiro-Wilk tests were made for normality. The Kolmogorov-Smirnov and Shapiro-Wilk tests revealed that all domains are not normally distributed as $p < 0.05$. Data were analyzed using descriptive and inferential statistics. In terms of descriptive statistics, the study variables were described using frequency, percentages, mean scores, and Standard Deviation (SD). As dependent variables were not normally distributed, non-parametric tests.

Table (1): Socio-demographic Characteristics of The Nurses (n=277).

Socio-demographic characteristics		N	%
Gender	Male	130	46.9
	Female	147	53.1
Age group	20-29 years	96	34.7
	30-39 years	110	39.7
	40-49 years	61	22.0
	50-59 years	10	3.6
Level of education	Diploma	79	28.5
	Bachelor's degree	179	64.6
	Master's Degree and above	19	6.9
Marital status	Not Married	80	28.9
	Married	197	71.1
Monthly income	2501-3500 NIS	159	57.4
	3501-4500 NIS	66	23.8
	4501-6500 NIS	47	17.0
	>6500 NIS	5	1.8
City	Hebron	103	37.2
	Nablus	102	36.8
	Ramallah	72	26.0
Experience	0-5 years	83	29.9
	6-10 years	50	18.1
	11-15 years	82	29.6
	≥ 16 years	62	22.4
For female nurses, Were you pregnant at the time of the Pandemic?	Yes	38	13.7
	No	69	24.9
	Not stated	170	61.4
History of chronic illness	Yes	31	11.2
If yes, what is the name of the illness?	Hypertension	4	1.44
	Diabetes Mellitus (DM)	7	2.53
	Atherosclerosis	2	.72
	Asthma	3	1.08
	Hypertension and DM	4	1.44
	COVID-19	2	.72
	Preeclampsia	2	.72

	Not stated	253	91.35
Follow the COVID-19 news using the social media	High	90	32.5
	Moderate	149	53.8
	Low	38	13.7

Results

Socio-demographic characteristics: The socio-demographic characteristics profile of the nurses who worked at the COVID-19 centers were; nearly (37%) of participants worked in the Nablus corona treatment center, the same as in Hebron vs in Ramallah center (26%). Our study Participants were (53.1%) female, ages of nearly (74%) were between 20-39 of nurses (64.6%) held bachelor's degree, tow-third of nurses were married, (22.4%) of participants had more than 16 years of experience vs (30%) have between 0-5 years' experience. The health profile of our participants indicated that (11%) of participants have a history of chronic disease; nearly (6%) of them have diabetes Mellitus, hypertension and/ or asthma. Closely, more than half of nurses have moderately followed the COVID-19 news on social media (table 1).

Table (2): Feelings, Stress Reducer Factors, Coping Mechanisms and Motivators of Nurses During COVID-19 Outbreak (n= 277)

Category	Items	Mean (SD)	%
Nurses' Feelings	Financial rewards and incentives as motivators; obligations to work; happiness with overtime during the pandemic.	3.76 (0.98)	Positive (60%) Neutral (25%) Negative (15%)
Factors Contributing to Stress	Wearing PPE daily, fear of transmitting the virus, lack of staff, physical fatigue, media reports, uncertainty about pandemic control, stress from caring for coworkers.	4.22 (1.12)	High workload (45%), Emotional stress (35%), Lack of resources (20%)
Factors Reducing Stress	Trust in colleagues, collaborative work, improving patient conditions, non-infection of family members, strict precautions, and support from colleagues.	3.45 (1.08)	Support from colleagues (50%), Adequate PPE (30%), Psychological counseling (20%)
Coping Mechanisms	Seeking support, self-care activities, professional help, maintaining family contact, and mindfulness-based interventions to reduce stress and burnout.	3.89 (1.05)	Seeking support (40%), Self-care activities (35%), Professional help (25%)
Motivation Factors	Sense of duty, having vaccinations during work, peer support, and financial incentives; organizational support needed for mental health and quality health services.	4.10 (1.09)	Sense of duty (50%), Peer support (30%), Financial incentives (20%)

The summarized findings in Table 2 reflect the mean scores for various items related to nurses' feelings, stress factors, stress reducers, coping mechanisms, and motivators during the COVID-19 pandemic. Nurses indicated that financial incentives and benefits (M = 3.76, SD = 0.98) were significant motivators for dealing with COVID-19 patients, performing their duties as healthcare professionals, and adhering to their ethical obligations. Conversely, high levels of stress were associated with wearing PPE daily, fear of transmitting the virus to family or friends, and staff shortages (M = 4.22, SD = 1.12).

In terms of stress reduction, nurses disagreed that the non-infection of family members and strict precautions to protect staff were significant factors (M = 3.45, SD = 1.08). However, they agreed that trusting colleagues to care for each other, collaborative efforts among health professionals, decreasing the number of cases, and improving patient health conditions significantly reduced their stress (M = 3.45, SD = 1.08). For coping mechanisms, the highest mean score was for updating knowledge about COVID-19 and its spread (M = 3.89, SD = 1.05), followed by the use of appropriate PPE. Avoiding public places, overtime, and staying home were also noted as effective strategies, albeit with lower mean scores. The highest motivating factors included having vaccinations during work, family and peer support, and financial incentives (M = 4.10, SD = 1.09). Adequate protective equipment at the hospital also motivated nurses to work (M = 3.73), while psychiatric help, therapy, and acknowledgment from management received neutral responses regarding their motivational impact.

According to Their Socio-Demographic Characteristics: Table (3) presents that Mann-Whitney U and Kruskal Wallis H Tests have shown no significant differences in nurses' feelings in Palestinian treatment centers of corona according to the age group (p= 0.085), level of education (p= 0.749), marital status (p=0.204) and those who follow the COVID-19 news (p=0.127).

However, significant differences were found in gender in favour of females (p=<0.001), pregnant nurses (p=0.029), and the presence of a history of illness (p=0.036). According to the Bonferroni post hoc test, nurses with ≥ 16 years of experience have higher feeling scores than those who have 6-10 years (p=0.025), and those with an income level of 2501-3500 NIS/month have higher feeling scores and reported more nurses' stressor factors than those with 4501-6500 NIS (p=0.026). Also, nurses in Hebron have more feeling scores than those in Ramallah and Nablus COVID-19 centers (p=<0.001).

Table 3: Difference in Nurses' Feelings in Palestinian Treatment Centers of Corona according to their Socio-Demographic Characteristics (n=277).

Table (3): Differences in Nurses' Feelings in Palestinian Treatment Centers of Corona.

Socio-demographic characteristics		N	Mean Rank	P-value
Gender	Male	130	120.83	<.001*
	Female	147	155.06	
Age group	20-29 years	96	122.21	.085
	30-39 years	110	149.66	
	40-49 years	61	145.74	
	50-59 years	10	141.80	
Level of education	Diploma	79	144.34	.749
	Bachelor's degree	179	135.51	
	Master's Degree and above	19	153.13	

Marital status	Single	75	126.64	.204
	Married	197	144.79	
	Widowed	2	122.50	
	Divorced	3	78.83	
For female and married nurses, Are you pregnant?	Yes	38	62.80	.029*
	No	69	49.15	
History of chronic illness	Yes	31	167.35	.036*
	No	246	135.43	
Experience	0-5 years	83	125.70	.025*
	6-10 years	50	121.48	
	11-15 years	82	149.20	
	≥ 16 years	62	157.44	
Monthly income	2501-3500 NIS	159	155.01	<.001*
	3501-4500 NIS	66	130.17	
	4501-6500 NIS	47	135.01	
	>6500 NIS	5	93.10	
City	Hebron	103	108.21	<.001*
	Nablus	102	158.80	
	Ramallah	72	154.99	
Follow the COVID-19 news using the social media	High	90	151.98	.127
	Moderate	149	135.09	
	Low	38	123.58	

Mann-Whitney U & Kruskal Wallis H Tests
Significant at the p ≤ 0.05

Difference Between Socio-Demographic Characteristics in Coping Mechanism Among Nurses During The COVID-19 Outbreak

Table 4 presented that Mann-Whitney U and Kruskal Wallis H Tests have shown no significant differences between age group (p= 0.975), marital status (p=0.596), pregnant status (p=0.483), History of illness (p= 0.288). However, significant differences were found in gender; female nurses have higher personal coping mechanisms than male nurses (p=<0.001). Level of education, according to the Bonferroni post hoc test, nurses who held diplomas have higher personal coping mechanisms than those who have held bachelor's Degrees (p=0.021), nurses who have more years of experience have higher personal coping mechanisms than those who have fewer years of experience (p=0.040). For monthly income, nurses who have 2501-3500 have higher personal coping mechanisms than those who have 3501-4500 (p=<0.001). Finally, nurses who work in Nablus and Ramallah have higher personal coping mechanisms than those working in Hebron (p=<0.001 and p=<0.001).

Table (4): Difference Between Socio-Demographic Characteristics and Coping Mechanism Among Nurses in Corona Center (n=277).

Socio-demographic characteristics		N	Mean Rank	P-value
Gender	Male	130	121.83	<.001*
	Female	147	154.18	
Age group	20-29 years	96	136.03	.975
	30-39 years	110	140.69	
	40-49 years	61	140.80	
	50-59 years	10	138.05	
Level of education	Diploma	79	162.34	.021*
	Bachelor's degree	179	129.56	
	Master's Degree and above	19	135.31	
Marital status	Not married	80	130.39	.596
	Married	197	142.72	
For female and married nurses, Are you pregnant?	Yes	38	56.83	.483
	No	69	52.44	
History of chronic illness	Yes	31	124.61	.288
	No	246	140.81	
Experience	0-5 years	83	134.29	.040*
	6-10 years	50	127.04	
	11-15 years	82	131.87	
	≥ 16 years	62	164.38	
Monthly income	2501-3500 NIS	159	160.37	<.001*
	3501-4500 NIS	66	140.47	
	4501-6500 NIS	47	132.56	
	>6500 NIS	5	119.10	
City	Hebron	103	108.01	<.001*
	Nablus	102	165.40	
	Ramallah	72	145.94	
Follow the COVID-19 news using the social media	High	90	150.97	.113
	Moderate	149	136.70	
	Low	38	119.68	

Discussion

The current study aimed to investigate the effect of COVID-19 on Palestinian nurses' feelings, stress, coping mechanisms, and motivation at corona treatment centers for the first time. The findings revealed several important insights.

Nurses' Feelings and Motivation: Nurses indicated that financial incentives and benefits (M = 3.76, SD = 0.98) were significant motivators for dealing with COVID-19 patients, performing their duties as healthcare professionals, and adhering to their ethical obligations. This aligns with previous findings that financial rewards and incentives are crucial in motivating nurses to work with COVID-19 patients, highlighting the importance of providing adequate support to healthcare professionals during pandemics (Gomez-Salgado et al., 2021; Dweikat, 2023).

Due to the pandemic, Palestine, like many countries, has responded by offering medical services and controlling bed shortages. These rearrangements exposed healthcare workers, including nurses, to significant challenges. Understanding the impact of COVID-19 on Palestinian nurses' feelings, stressors, stress-reducer factors, coping, and motivation mechanisms is substantial to ensure that nurses are supported to deliver adequate services without undermining quality. Nurses in Palestine felt that rewards increase their motivation to work, although they do not like to work in Corona departments if they have the choice. However, they dealt with patients in a highly ethical and professional manner.

Stress Factors: High levels of stress were associated with wearing PPE daily, fear of transmitting the virus to family or friends, and staff shortages (M = 4.22, SD = 1.12). This is consistent with the significant stressor factors identified in other studies, such as the socio-demographic variables, the severity of patients, and long working hours, which contribute to increased anxiety and pressure among nurses (Mo et al., 2020). Other studies have similarly reported that healthcare workers experienced significant stress due to PPE use and fear of virus transmission (Zhang et al., 2020). Nurses agreed that one cause of stress is wearing PPE and working in this pandemic environment, in addition to perceiving it as a cause of passing the disease to friends and family. These reasons made them read more about preventing transmission and working to comply with PPE, although it is one of the most critical stressor factors.

Stress Reduction: In terms of stress reduction, nurses disagreed that the non-infection of family members and strict precautions to protect staff were significant factors (M = 3.45, SD = 1.08). However, they agreed that trusting colleagues to care for each other, collaborative efforts among health professionals, decreasing the number of cases, and improving patient health conditions significantly reduced their stress (M = 3.45, SD = 1.08). Social support and teamwork have been shown to significantly alleviate stress among healthcare workers. The availability of vaccines, family support, and the provision of PPE motivates them to work so all health teams work together in the face of the pandemic; participants trust these teams' ability to take care of them in case they are infected with the virus COVID-19, and hearing about the reduced number of cases contributed to stress reduction in total (Windarwati et al., 2021). The rationale for these attitudes is connected to nurses' sense of their ethical responsibility, professional philosophies, religious faith, moralities, and commitment to their jobs. Their agreement lies in the feeling that financial incentives increase their motivation to work in the deteriorating economic situation in Palestine in particular and the world in general due to the impact of this epidemic on the economic crisis. The willingness of healthcare workers to participate in a second wave of the pandemic or future outbreaks is strongly driven by financial recognition, as reported in previous disease outbreaks (Maraqa et al., 2020).

Coping Mechanisms: For coping mechanisms, the highest mean score was for updating knowledge about COVID-19 and its spread (M = 3.89, SD = 1.05), followed by the use of appropriate PPE. Avoiding public places, overtime, and staying home were also noted as effective strategies, albeit with lower mean scores. Education and training about infection control measures have been found to be effective coping strategies (Shanafelt, Ripp, & Trockel, 2020; Spoorthy, Pratapa, & Mahant, 2020). Evidence shows that in similar outbreaks, nurses have presented the highest levels of occupational stress and resulting distress when compared to other groups as the COVID-19 pandemic has led to a shift in nursing practice to meet pandemic-related care. Studies show that PPE creates barriers to restrict contact between patients, nurses, and their family members. Thus, the facility's readiness, protocol availability, and knowledge of the disease's nature may have all played a role in the staff nurses' remarkable level of adaptability when caring for COVID-19 patients (Maraqa et al., 2020).

Our findings suggest that continuous and comprehensive support mechanisms are vital for promoting nurses' mental health, ensuring quality healthcare services, and improving patient safety (Nadeem et al., 2021). Nurses indicated that family and administrative support-dependent strategies should be adopted as interventions to keep them working with high performance and accepted quality in risk places, struggles, countries, and crises.

Mehta, Mittal, Singh, & Patel (2020) have studied the impact of income on perceived stress, coping, and family functioning in Indian females with pseudo seizures and pointed out that income was a significant contributor to perceived stress. Stress leads to less cooperative behavior and reduces interpersonal cues. At the same time, support from group members is an important social resource and may make team members more stress resistant. During a pandemic, demographic parameters influence coping behavior, including age, gender, race, and socioeconomic class (SES), as well as personality, which tends to influence the adoption of adaptive coping strategies by moderating the relationship between demographic characteristics and health-related behavior. Financial resources also allow for more favorable COVID-19 coping responses to be chosen (Lu & Lin, 202; Mehta, Mittal, Singh, & Patel, 2020).

Our study results and conclusions are compatible with others who declared that motivators, potential risks, and coping mechanisms should be considered in intervention programs to increase motivation to comply with protective procedures against COVID-19 (Galletta et al., 2020). Many studies have revealed the perceived threat of COVID-19, response and cost-efficacy of vaccination, and whether they were taking an influenza vaccine, which is associated with the motivation to receive COVID-19 vaccination (Murphy, Markey, O' Donnell, Moloney, & Doody, 2021; Lazarus et al., 2021; Brooks, & Das, 2020). Finally, the Palestinian community as a collective society provides an important method for Palestinians to cope with the stress caused by the coronavirus pandemic. Some stress-coping mechanisms Palestinians use are social support, self-control, self-efficacy, spirituality, optimism, and subjective well-being (Meri, 2022).

Conclusion

Palestinian frontline nurses' feelings, coping, and motivation mechanisms have been impacted by working with an unfamiliar infectious agent, disturbed by long-time use of PPE and isolation from their families. Nurses in Palestine need strategies to maintain their psychological well-being during crises. Family and administrative support-dependent strategies should be adopted as interventions to keep nurses working with high performance and accepted quality in risk places, struggles, countries, and crises.

Disclosure Statement

The authors declare that they have no relevant or material financial interests that relate to the research described in this paper

List of Abbreviations

MoH: Ministry of Health

HCPs: Healthcare professionals

COVID -19: Coronavirus

PPE: personal protective equipment

 WHO: World health organization

HCWs: health care workforces

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