RESEARCH

Insights into the relationship between professional values and caring behavior among nurses in neonatal intensive care units

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Abstract

Objective Professional values are crucial for delivering high-quality care in neonatal intensive care units while caring behavior impacts nurses' performance and well-being. The purpose of this study was to assess the relationship between professional values and caring behavior among nurses in neonatal intensive care units.

Methods A cross-sectional study involving 172 nurses was conducted using the Nursing Professional Value Scale and Caring Behaviors Assessment Tool. The study was carried out between 1 October and 5 December 2023.

Results Nurses demonstrated a moderate to high degree of professional commitment, with a mean professional value score of 91.1 ± 11.1. The mean score for caring behavior was 99.7 ± 12.4. The highest-rated domain was setting up a supporting, protective, and corrective environment, with a mean score of 22.8 ± 2.7. A low positive relationship was found between the supportive, protective, and corrective environment domain and nurses' professional value ($r = 0.18$, $p = 0.017$), as well as between overall caring behavior and nurses' professional value ($r = 0.16$, $p = 0.038$).

Conclusion The results indicate a favorable relationship between professional values and caring behavior, especially in areas like establishing a supportive workplace. However, both professional value and caring behavior needs improvement in certain aspect. Enhancing these aspects could further strengthen their relationship, ultimately improving the quality of care provided to newborn patients and their families.

Practice implications To cultivate a positive work environment and instill caring behaviors and professional values among NICU nurses, it is imperative to allocate sufficient time and resources. This investment is necessary for nurturing a culture of care, improving patient outcomes, and fostering a supportive environment for NICU nurses, newborn, and their families.

Keywords Professional value, Caring behavior, Nurses, Neonatal intensive care unit

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Introduction

Nursing stands as one of the most respected professions, deeply rooted in unwavering professional ethics and values [1]. Professional nursing values are defined as significant nursing principles that support professional practice, evaluation, and principles [2]. These values provide a framework for assessing the beliefs

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influencing professional performance and serve as endorsed guidelines by professional experts [3]. These principles include human dignity, altruism, integrity, and justice. They form the basis of nursing practice and the guidelines by which nurses should interact with patients and other professionals when making clinical decisions [1, 4, 5]. A profound comprehension of professional values and their profound impact on professional behavior is paramount for nurses [6].

According to Tehranineshat et al. (2020) [7], nurses utilize professional values to guide their decision-making, care practices, and ethical problem-solving when interacting with both well and sick patients. Studies of nurses' professional values reveals a positive correlation between these values and motivation, career advancement, burnout, and satisfaction with compassion [7–9]. These findings underscore the significance of internalizing professional values for fostering a positive work attitude, enhancing work commitment, and delivering high-quality care [10].

The notion of caring stands one of nursing's fundamental and universal values, anchoring its essence and significance within the profession [11, 12]. At the core of nursing lies the essential value of care, serving as a cornerstone of the discipline [13, 14]. Assisting patients in achieving greater levels of mental, physical, and spiritual wellness is the main objective of nursing care [15]. There are two types of care: expressive care and technical care [15, 16]. While expressive care involves interactions that express hope, trust, and emotional support—such as appreciating patients, actively listening to them, and assist of their demands —technical care entails proficiency in the skills necessary to make sure the physical wellbeing and comfort of the patient [16]. This was accomplished by means of transpersonal relationships and compassionate interactions [17].

Health care is delivered by nurses on the front lines. Nurses must exhibit both technical and expressive care behaviors because patient-centered care has become increasingly important in the health services [18]. As part of their professional roles and responsibilities, nurses are also expected to provide services that demonstrate their competence to guarantee patient safety, high-quality care, and satisfaction with the hospital experience [19]. A safe and efficient nursing care delivery system depends on neonatal nurses, who play a variety of roles in the neonatal unit, supporting and addressing the various needs of families and the infants [20]. NICU nurses offer a range of nursing care and treatments to infants, including oxygen therapy, nutritional supplementation, mechanical ventilation, infection prevention, maintenance of vital signs, and pain management and prevention [21, 22].

Neonatal nurses play important roles in shaping neonatal health policy, managing inpatient and healthcare systems, advocating for neonates and their families, and providing direct care. professional values support nursing practice and are crucial for delivering compassionate care. However, despite the significance of these values for neonatal nurses working under intensive conditions in the critical care units, there has been limited research specifically examining how these values influence the caring behaviors exhibited in NICUs [14, 23, 24]. For instance, a study conducted in Saudi Arabia found that the majority of NICU nurses scored highly on perceived caring behaviors [14]. Additionally, an Iranian study reported that the professional values of NICU nurses had good mean ratings and emphasized that the advancement of the nursing profession depends on the development of nurses' professional values [24].

Professional values and caring behaviors of nurses exhibit notable variations across different countries and cultures, reflecting the diverse socio-cultural contexts in which they operate [25]. In Western countries, such as the United States and many European nations, nursing often emphasizes individual autonomy, patient rights, and evidence-based practice [26]. This focus aligns with broader cultural values of individualism and personal empowerment. Conversely, in many Asian countries, including Japan and China, nursing practices may prioritize collective well-being, familial roles, and hierarchical structures, reflecting cultural values of collectivism and respect for authority [27]. These cultural differences impact how nurses perceive their roles and responsibilities, shaping their professional values and behaviors. For example, nurses in collectivist cultures might exhibit a higher degree of deference to family wishes and traditional practices, whereas those in individualist cultures might advocate more strongly for patient autonomy and self-determination [27]. Despite these differences, there is a common thread of commitment to compassionate care and ethical practice, underscoring a universal core of nursing professionalism that transcends cultural boundaries. Understanding these variations is crucial for fostering cross-cultural competence in nursing and enhancing the global practice of nursing care.

NICUs nurses are highly specialized professionals working in a high-stress-environment where their professional values are crucial for ensuring the survival and wellbeing of critically ill newborns [28]. They are responsible for both the technical and expressive aspects of care, making their professional values integral to the quality of care they provide. Consequently, the quality of their care services can impact key health indicators of societal health, including the Maternal Mortality Ratio and Infant Mortality Rate as well as parental satisfaction [29].

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To our knowledge, no previous studies have explored the relationship between professional values and caring behaviors among NICU nurses in Palestine. Therefore, this study aims to assess this relationship and fill the existing gap in the literature, providing insights that can enhance the quality of care and professional development in NICUs.

The status of NICU care in Palestine

As a developing middle-income country, Palestine faces many of the same challenges in neonatal health as other nations in similar economic situations. Palestine struggles with scaling up and improving the quality, integration, and continuity of neonatal care. Healthcare delivery in the region is marked by inequalities arising from the uneven distribution of services, which is further exacerbated by geopolitical factors such as the presence of multiple checkpoints [30]. However, assessing trends in neonatal mortality is difficult due to the incomplete national death registry [31]. In 2017, the neonatal mortality rate in Palestine was reported as 11.3 deaths per 1,000 live births, but this figure is likely underreported. The Palestinian Central Bureau of Statistics noted that in 2013, the death registry was only 60.2% complete, with infant death reporting being particularly inadequate at 25.6% completeness [32]. A study by the United Nations Relief and Works Agency (UNRWA) in the Gaza Strip (GS), where 67% of the population are refugees served by UNRWA, found that between 2008 and 2013, infant mortality increased from 20.2 to 22.4 per 1,000 live births. This rise was mainly due to an increase in the neonatal mortality rate from 12.0 to 20.3 per 1000 live births ($p = 0.01$), with preterm birth, congenital anomalies, and infections being the leading causes of death [33].

Methods

Study design

A descriptive cross-sectional study was conducted.

Participants and setting

The target population comprised nurses working in NICUs in the West Bank region of Palestine. The study was carried out from October 1to December 5, 2023. The study was conducted in level 2 and 3 NICUS across hospitals in Palestine. The West Bank region has 12 neonatal units within government hospitals, with a total of 150 incubators.

Using Raosoft software, the sample size was calculated based on a population size of 300, a response distribution of 50%, and a margin of error of 5% with a confidence interval of 95%. The estimated sample size was 169. To mitigate attrition, a convenience sample of 205 nurses were initially enrolled in the study. Ultimately, 172 nurses completed the study and returned the questionnaires, resulting in a response rate of 84%.

Inclusion and exclusion criteria

The study encompassed all full-time nurses employed in the designated NICUs with a minimum of 6 months of experience. Participants with at least 6 months of experience are likely to have developed a basic level of competence and confidence in handling neonatal care, which is crucial for the study's accuracy and reliability. Additionally, these nurses are more likely to be familiar with the protocols and standard practices in neonatal care [34]. The inclusion criteria also required participants to be willing to participate and to be able to read and write in English. Nurses who were on leave or absent during the data collection period were excluded.

Instruments/Measures

The instrument comprised three sections. The first section collected demographic characteristics, including age, gender, educational level, nursing work experience, experience in the NICU, and participation in education on professional values.

The second section utilized the NPVS-3(Nursing Professional Values Scale-3), a 28-item instrument employing a Likert-scale format ranging from 1 (not important) to 5 (most important), with total scores ranging from 28 to 140. A higher score on the NPVS-3 indicates a stronger orientation towards professional values [35]. NPVS-3 measures professional values of caring (10 items), activism (10 items), and professionalism (8 items). The scale is valid and reliable where Cronbach's alpha for total scale was 0.94; caring domain was 0.89; activism domain 0.91, and professionalism 0.80 [35].

The third section utilized the Caring Behaviors Assessment Tool Nursing Version-Short Form (CBAN-SF) developed by Akgün et al. [36]. CBAN-SF composed of 27 items enables nurses to assess their care behaviors across seven factors: "humanism/faith-hope/sensitivity (4 items), helping/trust (4 items), expression of positive/negative feelings (3 items), supportive/protective/corrective environment (6 items), teaching/learning (4 items), human needs assistance (3 items), and existential/phenomenological/spiritual forces (3 items)". The 5-point Likert-type scale evaluates the importance of different caring behaviors from a nurse perspective from 1 'least important' to 5 'most important.' The lowest possible score is 27, and the highest possible score is 135. Higher scores on the CBAN-SF indicate greater satisfaction with nurses' care behaviors. The scale demonstrated high reliability, with a total Cronbach's alpha coefficient of 0.97. The scale is valid and reliable where Cronbach's alpha for total scale was 0.97; humanism/faith-hope/

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sensitivity domain was 0.85, helping/trust domain 0.79; expression of positive/negative feelings domain 0.81; supportive/protective/corrective environment domain 0.90; teaching/learning domain 0.89, human needs assistance domain 0.85; and existential/phenomenological/spiritual forces domain 0.85 [36].

Both tools were validated by sending it to five researchers and nursing professionals specializing in neonatology to obtain their expert opinions regarding its simplicity, relevance, and importance. The feedback indicated agreement on the content validity of the instrument. Additionally, a pilot study was conducted with 15 nurses, who were excluded from the actual study. The Cronbach's alpha for the CBAN-SF scale in this study was 0.943, and for the NPVS-3, it was 0.889.

Data collection

After obtaining approval to conduct the study from the relevant institutional review boards, the researchers visited hospitals and met with the head nurses supervising the neonatal intensive care units. During these meetings, the researchers presented the study's objectives and requested the preparation of lists containing the names of nurses working in these units, along with their duty schedules for subsequent recruitment efforts. Following this, the researchers organized face-to-face sessions with the nurses to explain the study's objectives and procedures. Nurses who agreed to participate were provided with informed consent forms, which they signed to indicate their voluntary participation. The researchers then administered the questionnaires in person during these sessions. The questionnaires took 15-20 minutes to complete. As all participants were proficient in English, the questionnaires were provided in English.

Ethical consideration

Approval was obtained from the Ministry of Health and Palestine Ahliya University (IRB: CAMS/BSN/1/1223). The researcher clearly explained the study's objectives to the nurses and informed them that they could withdraw from the study at any point. Nurses who agreed to participate signed the informed consent form in person. Additionally, the study carefully protected the participants' confidentiality by not revealing their names or any other personal information. Participants were informed that their involvement in the study was entirely voluntary. The authors obtained permission from the developers to use the instruments.

Data analysis

Data was statistically analyzed using SPSS version 23. The Shapiro-Wilk test was performed to determine whether the data showed normal distribution. Descriptive statistics, including percentage, frequency, mean, and standard deviation, were used to summarize the data. The Pearson correlation test was used to assess the relationship between Nurses' Professional value and caring behavior, with statistical significance set at the 0.05 level. A multivariable regression analysis was also conducted to identify predictors of caring behavior among NICU nurses.

Results

Participants' demographic characteristics

Out of a total of 205 nurses, 172 participated in the study, yielding a response rate of 83.9%. The analysis revealed that a significant portion of the participants, numbering 122 (70.9%), fell within the age range of 21 to 30 years old, with 87 (50.6%) being male. The majority of respondents, comprising 122 (70.9%), held bachelor's degrees. Furthermore, a notable finding is that a majority of the nurses, totaling 94 (54.7%), reported having less than 5 years of experience. Specifically, within the NICU, 100 (58.1%) of respondents had less than 5 years of experience. Remarkably, a vast majority, 166 (96.5%) of the participants, indicated that they had received education on professional values, as depicted in Table 1.

The analysis indicated that the mean score for nurses' professional value was 91.1 ± 11.1 (ranging from 28 to 140), reflecting a high level of professional commitment. Caring behavior, a central aspect of nursing, was reported with a mean score of 99.7 ± 12.4. The study assessed various dimensions of caring behavior with the highest-ranking domain being the creation of a supportive, protective, and corrective environment, critical for

Table 1 Participants' demographic characteristics (*N*=172)

Characteristics		N	(%)
Age	21–30 year	122	70.9
	31–40 year	34	19.8
	41–60 year	16	9.3
Gender	Male	87	50.6
	Female	85	49.4
Educational level	Diploma	22	12.8
	Bachelor	122	70.9
	Master and above	28	16.3
Work experience in nursing	Less than 5 years	94	54.7
	5-10 years	46	26.7
	more than 10 years	32	18.6
Work experience in NICU	Less than 5 years	100	58.1
	5-10 years	42	24.4
	more than 10 years	30	17.4
Status of receiving education on professional values	Yes	166	96.5
	No	6	3.5

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Table 2 Distribution of nurses professional value (*N*=172)

Variable	M(SD)
Nurses professional value	91.1(11.1)
Caring (10 items)	33.0(4.6)
Activism (10 items)	32.3(4.1)
Professionalism (8 items).	26.0(3.7)
Caring behavior (27 items)	99.7(12.4)
Humanism/ faith-hope/ sensitivity (4 items)	14.5(2.6)
Helping/ trust (4 items)	14.1(2.8)
Expression of positive/ negative feelings (3 items)	11.3(1.5)
Teaching/ learning (4 items)	14.7(2.2)
Supportive/ protective/ corrective environment (6 items)	22.8(2.7)
Human needs assistance (3 items)	11.2(1.9)
Existential/ phenomenological/ spiritual forces (3 items)	11.1(1.5)

Table 3 The relationship between nurses' professional value and caring behavior (*N*=172)

Variable	Nurses professional value
	r(p)
Caring behavior	0.16 (0.038[a])
Humanism/ faith-hope/ sensitivity	0.13 (0.103)
Expression of positive/ negative feelings	0.15(0.052)
Helping/ trust	0.14 (0.077)
Teaching/ learning	0.07(0.338)
Supportive/ protective/ corrective environment	0.18(0.017[a])
Human needs assistance	0.09(0.245)
Existential/ phenomenological/ spiritual forces	0.14(0.070)

[a] Correlation is significant at the 0.05 level (2-tailed)

patient well-being, scoring a mean of 22.8 ± 2.7. This was followed by the teaching/learning domain, which had a mean score of 14.7 ± 2.2 and then humanism/faith-hope/ sensitivity domain, with a mean score of 14.5 ± 2.6, as seen in Table 2.

A Pearson correlation test was applied to examine the relationship between nurses' professional values and caring behavior. The analysis showed a low positive relationship between nurses' professional values and their caring behavior (*r*=0.16, *p* =0.038). Additionally, there was a low positive relationship between nurses' professional values and supportive/protective/corrective environment domain (*r*=0.18, *p* = 0.017), as seen in Table 3.

A multivariable regression analysis was utilized to identify the caring behavior predictors among nurses. The independent variables (professional values, age, gender, educational level, work experience, work experience in NICU, status of receiving education on professional values) were entered into the model of predictors. The overall model was statistically significant ($p < 0.001$, $R = 0.866$, $R^2 = 0.750$, adjusted $R^2 = 0.739$). This stated that 75.0% of the variance in caring behavior was illuminated by the whole model.

The findings revealed that professional values were predictor of caring behavior ($\beta = 0.358$, $p < 0.01$) illustrating that a one-point increment in professional values was associated with a 0.358 increase in caring behavior, as seen in Table 4.

Discussion

An essential and distinctive hallmark of nursing, care encompasses several dimensions and is profoundly influenced by the personal and professional characteristics of nurses. Numerous studies have extensively explored the multifaceted nature of nurses' care [37–39]. Nurses base their decisions, problem-solving, patient care, community contributions, and teamwork on their

Table 4 Predictors of caring behavior: multiple linear regression

Predictor	B	Beta	t	*p*. Value	95.0% confidence interval		Correlations	
					Lower Bound	Upper Bound	Partial	Part
Professional values	.358	.872	21.639	.001**	.326	.391	.861	.845
Age	-.657	-.093	-1.358	.176	-1.613	.299	-.105	-.053
Gender	.199	.022	.525	.600	-.550	.948	.041	.021
Educational level	-.594	-.070	-1.676	.096	-1.294	.106	-.130	-.065
Work experience	-.714	-.121	-.972	.333	-2.166	.737	-.076	-.038
Work experience/NICU	.477	.080	.658	.511	-.955	1.909	.051	.026
Status of receiving education on professional values	-1.707	-.069	-1.668	.097	-3.728	.314	-.129	-.065

CI Confidence Interval, *b* Unstandardized beta, *B* Standardized beta

** Significant at *p* < 0.01

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professional beliefs rather than personal ones [37]. Therefore, this study aimed to assess the relationship between nurses' professional values and caring behaviors among nurses working in neonatal intensive care units in Palestine.

Our study revealed that the mean score for nurses' professional values was moderate to high, indicating a good level of professional commitment. This finding is consistent with those of Du et al. [40], who also reported high levels of professional values among nurses. Adopting and internalizing professional values enhance both nurses' job satisfaction and the quality of care they provide to patients [41]. Hutagaol et al. [42] suggests that the variation in nursing educational levels and backgrounds may explain these results, as the majority of participants in our study held bachelor's degree, followed by those with master's degree. Additionally, nurses' work experience and individual factors further contribute to maintaining high professional values among nurses [43].

When assessing various dimensions of professional values, caring emerged as the highest-ranking domain, followed by activism and professionalism. The results align with previous studies, where caring consistently ranks as the top professional value [13, 44]. However, the NICU nurse demonstrated low perceptions of the value of professionalism. Enhancing one's perception of professionalism is vital as it relates to active engagement with health services, involvement in decision-making processes, and the advancement of the profession [13].

The current study's results reveal that nurses exhibit a high mean score in caring behavior. Caring behaviors are fundamental to the nursing profession and can enhance self-confidence and job satisfaction, thereby improving patient care standards [13]. In assessing the subscale, NICU nurses ranked the domain of creating a supportive, protective, and corrective environment as the highest, which is critical for patient well-being. This finding is supported by Majait et al. [45] and Basit et al. [13], who underscore the importance of such an environment. However, it contradicts Elsayed et al. [46], who reported "humanism/faith/hope/sensitivity" was highly ranked. Additionally, it differs from Shalaby et al. [14], who found that the highest-ranking category of nurses' caring behavior was related to "human needs assistance".

The study's findings indicate that higher perceptions of care behaviors by nurses are regarded as a positive outcome. This will enhance self-assurance and job satisfaction, ultimately elevating the standard of patient care. However, the study highlights a need for improvement in the area of "existential/ phenomenological/ spiritual forces", as this was identified as the least significant care behavior in this study. This could be attributed to the challenging nature of comprehending these concepts,

as noted by Watson [47]. Understanding these factors requires experience and reflection to provoke thought and deepen one's understanding of oneself and others. It's noteworthy that in our study, the majority of nurses were aged less than 30 years old and had less than 5 years of experience in nursing or in NICUs. In contrast to our study, the domain of "expression of positive/ negative feelings" was perceived by nurses as the least important [13].

The Pearson correlation analysis results reveal intriguing insights into the relationship between several characteristics of caring behavior and nurses' professional values. Firstly, there is a statistically significant positive association between nurses' total professional values and their caring behavior. This suggests that nurses who uphold their professional values are more likely to exhibit caring behaviors in their practice. Notably, the aspect of creating a supportive/protective/corrective environment shows the strongest correlation among the caring behavior domains. This implies that nurses who prioritize fostering a supportive and protective environment also tend to demonstrate higher levels of professional values. These findings are consistent with those of Kootahi et al. [24] and are confirmed by Arsat et al. [48]. They align with the core principle of nursing, emphasizing the importance of compassionate and comprehensive care environments for optimal patient outcomes [49].

Notably, however, there is no discernible relationship between professional values and human needs support, teaching/learning, or existential/phenomenological/spiritual forces, suggesting that these aspects of caring behavior may be influenced by variables other than professional values. Another explanation could be related to the low sample size in our study, which may have affected the outcomes. The present study's findings emphasize the intricate association between an individual's professional values and their demonstration of caring behaviors. The results led to the conclusion that there is indeed a relationship between nurses' assessment of professional values and their care behaviors. As demonstrated by Basit et al. [13], this underscores the importance of providing ongoing education and training along with fostering a supportive organizational culture to enhance both aspects of nursing practice.

According to the current study, professional values are a significant predictor of caring behavior among NICU nurses. This finding is consistent with previous studies, which have identified a statistically significant positive correlation between professional values and care behaviors [13, 24, 37, 48]. These findings underscore the critical role of professional values in influencing the quality of care provided in NICU settings. Therefore, strengthening professional values among NICU nurses could be

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beneficial for enhancing caring behaviors and improving patient outcomes.

Limitations

Our study has several limitations. Firstly, the small sample size of NICU nurses in Palestinian hospitals may not accurately reflect the diversity of NICU nurses' professional values and caring behaviors in similar conditions, potentially affecting the generatability of our results to other groups. Additionally, using a self-administered questionnaire may introduce bias, potentially affecting the reliability and accuracy. Furthermore, the cross-sectional study design makes it challenging to establish causal relationships between professional values and caring behaviors, as well as any long-term effects. Moreover, various factors were not included in our study, such as the quality of nursing care and job satisfaction, which warrants exploration in future studies. The weak correlation suggests that other factors may be influencing the variables examined, and which these should be considered in future studies

Conclusions

In conclusion, this study provides valuable insights into the association between NICU nurses' professional values and caring behaviors. The findings indicated a positive relationship between professional values and caring behaviors, particularly in the domain fostering a "Supportive/ protective/ corrective environment". Therefore, it's imperative to enhance nurses' professional values, whether for professional nurses or nursing students, through continuous education and training. Additionally, nursing students should deeply integrate caring concepts into their education. This approach could contribute to enhanced care quality for a diverse range of patients, especially newborn babies, and their families

Recommendations

The study recommends several avenues for future research and practice improvements. Firstly, further research should explore the relationship between nurses' professional values and compassionate behaviors across various healthcare facilities and geographic locations. Secondly, prioritizing continuing education and training programs is essential for improving nurses' capacity to deliver holistic patient care and to uphold professional values and compassionate care. Additionally, hospitals should focus on effective staffing and resource allocation to create a healthy work environment where nurses' efforts are recognized and valued. Finally, qualitative research is encouraged to deepen understanding of the relationship between professional values and caring behaviors.

Abbreviations
NICU   Neonatal intensive Care Unit
PVS-3   Nursing Professional Values-3
CBAN-SF   Caring Behaviors Assessment Tool Nursing Version-Short Form

Authors' contributions
A.A, M.A, A.B, B.S designed the study. A.O, R.M, S.A, M.A collected the data. A.A, M.A, B.S & A.B analyzed the data. All authors prepared the manuscript. All authors approved the final version for submission. Corresponding author. Correspondence to Basma Salameh. Email: basma.salameh@aaup.edu.

Availability of data and materials
The data utilized to support the results of the research are accessible to the corresponding author upon request.

Declarations

Ethics approval and consent to participate
Ethical approval was obtained from the Ministry of Health and Palestine Ahliya University (IRB number: CAMS/BSN/1/1223). The researcher clearly explained the study's objectives to the nurses and informed them that they could withdraw from the study at any point. Additionally, the study carefully protected the participants' confidentiality by not revealing their names or any other personal information. Nurses who approved to participate signed the informed consent form. Participants were informed that their involvement in the study was voluntary

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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