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Original Article

Resilience and its Relationship with Exposure to Violence in Emergency Nurses

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Abstract

Background: Workplace violence (WPV) is a detrimental factor affecting nurses' health and performance. Individual protective factors such as resilience can assist nurses in coping with and adapting to workplace adversity. **Objectives:** The present study was aimed to determine the relationship between resilience and exposure to WPV in emergency nurses. **Methods:** This cross-sectional study was carried out on 118 emergency nurses in Tabriz educational hospitals, Iran. The participants were selected through a convenience sampling method. A demographic questionnaire, the Conner-Davidson Resilience Scale, and the Modified Questionnaire of Workplace Violence in the health sector were used for data collection. The data were analyzed using descriptive statistics, logistic regression analysis, *t*-test, and one-way analysis of variance. **Results:** The mean resilience score of nurses was 25.05 ± 5.79 in the possible range of 0–40. Most of the cases of violence were verbal threats (80.5%), and 56.7% of the exposures occurred during the night shift. Logistic regression showed that lower resilience predicted verbal threats (P = 0.001) and physical attacks (P = 0.038) against the individual. In addition to resilience, working on the night shift significantly predicted verbal threats (P = 0.008) against nurses. **Conclusion:** The resilience score was lower in nurses who exposed to violence. Empowerment programs are suggested to improve the resilience of nurses.

Keywords: *Emergency nursing, Resilience, Psychological, Workplace violence*

Introduction

Workplace violence (WPV), is a common phenomenon.[1] A recent systematic review showed that health-care workers are at a greater risk of exposure to violence than staff working in other sectors.[2] Among health-care workers, nurses, especially those working in emergency departments (EDs), are more likely to be violated due to their direct and long-term contact with patients and their companions.[3,4] Studies in China,[5] Australia,[6] and Iran[7] showed that almost 90% of nurses working in EDs experienced WPV.

WPV is the deliberate use of verbal or physical force to threaten and harm oneself, another person, or a group of

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people and may result in death, injury, and maltreatment of the population.[8] Violence against nurses has multiple negative consequences. A study reported that nurses who are victims of violence have higher levels of emotional distress, difficulty thinking, absenteeism, and a desire to change their job.[9] Violence against nurses may also impede effective nurse-patient communication, disrupts patient care, and decreases the quality of nursing care[10,11] and patients' safety.[12] Resilience is a feature that helps nurses adapt to workplace stress.[13] It is defined as the capacity and ability to overcome problems and adapt to difficult situations.[14] Resilience helps nurses cope with workplace adversity.[15] A high level of resilience in nurses is associated with increased overall well-being, mental health, improved working relationships, and job satisfaction.[16]

A number of studies are available about WPV against Iranian nurses.[17,18] Some studies are also available about the resilience of nurses working in Iran[19] and other countries.[13,20] However, few studies have examined the relationship between nurses, resilience and WPV against them and reported conflicting findings.[4,21,22] Two studies have reported that nurses and midwives who experienced WPV had lower levels of resilience than nurses who did not expose to violent occasions.[4,21] However, another study of mental health nurses showed no significant relationship between exposure to verbal and physical violence and resilience.[22] Most of these studies have focused on nurses working in general wards[4,21] or mental health units,[22] and no study in this regard has been conducted on Iranian nurses working in EDs. The present study was conducted to fill this gap.

Objectives

The present study aimed to determine the nurses' resilience and its relationship with exposure to WPV among nurses working in EDs.

Methods

Design and participants

This cross-sectional study was conducted on 118 nurses working in EDs of educational hospitals of Tabriz University of Medical Sciences in 2018. The sample size was calculated using the results of a study, in which the mean resilience score nurses were 145.56 ± 25.20.[23] Accordingly, with a confidence level of 95%, a δ of 25.20, a *d* of 5, and considering an attrition rate of 20%, a sample of 118 nurses was identified to be needed for the study.

Inclusion criteria were as follows: (a) having a work experience of more than one year in ED; (b) having direct contacts with patients during the daily work, and (c) a willingness to participate in the study. Nurses who were still on probation did not recruit in the study.

Instruments

A demographic questionnaire, the Modified version of "Workplace Violence in the Health Sector" questionnaire (WPVHS), and the short form of Connor-Davidson Resilience Scale (CD-RISC) were used for data collection. The demographic characteristics questionnaire included questions on nurses' age, gender, marital status, education level, employment status, type of shift work, overall work experience, and years of working in the ED.

The WPVHS consists of four parts, including the demographic characteristics of the respondents and workplace data, prevalence of different types of WPV, factors affecting violence such as personnel and management factors, and nurses' responses to WPV. The validity and the reliability of the Persian translation of WPVHS have been assessed by Babaei *et al.* and its test-retest reliability coefficient was 0.97.[24] In the current study, the Cronbach's alpha coefficient for the scale was 0.92.

The short form of CD-RISC has 10 items that are responded on a 5-point Likert scale as follows: Zero: "not true at all;" 1: "rarely true;" 2: "sometimes true;" 3: "often true;" and 4: "true nearly all of the time." The total score ranges from 0 to 40 and higher scores indicate higher levels of resilience.[25] The validity and the reliability of the Persian translation of the CD-RISC have been assessed by Salimi *et al.* and the internal consistency coefficient of the scale was 0.82.[26] In the current study, the Cronbach's alpha of the scale was calculated as 0.98.

To find eligible participants, the researcher referred to the EDs of the hospitals during the morning, evening, and night shifts briefed the eligible nurses about the study objectives and passed them the study instruments if they agreed to participate in the study. The participants were asked to respond to the study questionnaires in a private setting and return it back to the researcher at her next referral.

Ethical considerations

This study was approved by the Research Ethics Committee of Tabriz University of Medical Sciences, Tabriz, Iran (code: IR. TBZMED. REC.1397.686). All the questionnaires were unnamed. The objectives of the study were explained to participants, and they were informed of their rights to voluntarily participate in or withdraw from the study. All participants signed written informed consent for participation and were assured of the confidentiality of their personal data.

Data analysis

The data were analyzed using the SPSS software version 16.0 (SPSS Inc., Chicago, IL, USA). Numerical data were described through mean and standard deviation, and categorical data were described through absolute and relative frequencies. To calculate the normalized mean, the sum of the scores obtained from each dimension was divided by the number of items in the same dimension. Independent samples *t*-test and one-way analysis of variance were used to compare the mean resilience scores of the nurses in terms of their sociodemographic characteristics. Moreover, the *t*-test was used to compare the mean resilience scores of nurses who experienced physical, verbal, sexual, and racial violence. Binary logistic regression was performed to predict the frequency of violence (as a binary dependent variable) based on resilience score (as the independent variable) after adjusting for potential confounders (i.e., gender, work experience, and working shifts). All analyses were performed at a significance level of <0.05.

Results

A total of 118 nurses working in the emergency wards of 10 educational hospitals participated in this study. The majority of nurses were female (68.6%), married (65.3%), aged 20–29 years (45.8%), and 76.3% were working in rotating shifts [Table 1].

Verbal threat was the most form of violence against nurses working in EDs (80.5%) [Table 2]. Most of the violent behaviors were carried out by men (86.8%). Furthermore, a majority of the violent behaviors were occurred by the patients' relatives (63.7%), and the remaining by the patients (34.1%), physicians (1.1%), managers, and supervisors (1.1%). Most of the exposures to WPV have been occurred during the night shifts (56.7%), the remaining in the morning (20%), and evening shifts (23.3%), and during the last 2 h of the working shift (46.7%).

The mean resilience score of the participating nurses was 25.05 ± 5.79, and the highest and lowest scores were related to the items "tend to bounce back after illness or hardship" and "can stay focused under pressure" [Table 3].

None of the nurses' characteristics could significantly affect their resilience except for their working shift; so that those with rotating shifts showed lower resilience than those with fixed shifts [$P < 0.03$; Table 4].

Significant differences were found between the mean resilience score of nurses who have not been subjected to WPV and those who experienced physical ($P < 0.01$) or verbal violence ($P < 0.01$) in the past 12 months [Table 2]. Since variables such as gender, age, shift work, and work experience, may confound the significant relationship observed between resilience and the occurrence of violence, logistic regression analysis was performed to examine the effects

Table 1: Demographic characteristics of nurses working in the emergency department of Tabriz educational hospitals in 2018

Characteristics	*n* (%)
Age	
20-29	54 (45.8)
30-39	41 (34.7)
40-49	22 (18.6)
50<	1 (0.8)
Gender	
Male	37 (31.4)
Female	81 (68.6)
Marital status	
Unmarried	41 (34.7)
Married	77 (65.3)
Employment status	
Formal	55 (46.6)
Contractual	22 (18.6)
Conventional	5 (4.2)
Mandatory services	29 (24.6)
Corporative	7 (5.9)
Work experience (years)	
1-5	82 (69.5)
6-10	19 (16.1)
11-15	11 (9.3)
16-20	5 (4.2)
21-25	1 (0.8)
Working shift	
Fixed	28 (23.7)
Rotating	90 (76.3)

Table 2: Frequency and types of workplace violence experienced by the participating nurses in the past 12 months and their resilience score

Type of violence	*n* (%)	Resilience, mean ± SD	*P*
Physical			
Yes	30 (25.4)	22.86 ± 5.95	<0.01
No	88 (74.6)	25.80 ± 5.57	
Verbal			
Yes	95 (80.5)	23.75 ± 5.38	<0.01
No	23 (19.5)	29.26 ± 4.98	
Sexual			
Yes	0	-	
No	118 (100)	25.24 ± 5.65	
Racial			
Yes	10 (8.5)	25.60 ± 8.44	0.75
No	108 (91.5)	25.00 ± 5.53	

SD: Standard deviation

Table 3: The participants' mean and standard deviation of the 10-item resilience scale (Connor-Davidson Resilience Scale)

Item	Mean ± SD
Able to adapt to change	2.73 ± 0.75
Can deal with whatever comes	2.69 ± 0.79
Tries to see the humorous side of problems	2.51 ± 0.96
Coping with stress can strengthen me	2.53 ± 1.13
Tend to bounce back after illness or hardship	2.76 ± 0.78
Can achieve goals despite obstacles	2.71 ± 0.86
Can stay focused under pressure	2.06 ± 0.99
Not easily discouraged by failure	2.18 ± 1.075
Thinks of self as a strong person	2.61 ± 0.906
Can handle unpleasant feelings	2.28 ± 0.951
The mean resilience score	25.05 ± 5.79

SD: Standard deviation

of these variables on the occurrence of violence. The logistic regression analysis showed that the resilience score could significantly predict physical (P = 0.038) and verbal violence against nurses (P < 0.001). In addition, the working shift could significantly predict verbal violence against nurses (P = 0.008). As Table 5 shows, the power of the working shift in the prediction of violence was considerably greater than that of the resilience score (B = 4.57 vs. B =1.221).

Discussion

The present study showed that verbal threat was the most common form of violence against nurses working in EDs. This finding is consistent with earlier studies in the EDs of Ireland[27] and Turkey,[28] where verbal violence was the most common type of violence against nurses. A study in Iran has also investigated the patients' perceptions about the nature of WPV against nurses and reported that >66% of patients had verbal violence against nurses due to the inappropriate conduct of health care providers with patients and their companions.[17] Our findings, along with previous studies, indicate the high prevalence of verbal violence in EDs. Although nurses experience higher levels of verbal violence than physical violence, the high prevalence of verbal violence in EDs might indicate the weakness of nurses and other health care providers in suitable communication in emergency conditions. On the other hand, nurses working in EDs are usually busy. High workload and staff shortages may also lead to longer waiting times for consultation and treatment. Patients with acute and emergency conditions are also anxious and in pain, and may perceive any delay as irrational. They may easily get frustrated and become verbally abusive and violent.

The current study also revealed that most of the participating nurses worked in rotating shifts. Moreover,

Table 4: The mean resilience score emergency nurses according to their sociodemographic characteristics

Characteristics	Mean ± SD	*P*
Age (year)		0.06
20-29	24.68 ± 5.55	
30-39	24.14 ± 6.18	
40<	27.56 ± 5.79	
Gender		
Male	25.51 ± 4.86	0.532
Female	24.85 ± 6.18	
Marital status		
Married	25.23 ± 5.25	0.068
Other	24.73 ± 6.74	
Employment status		
Formal	25.21 ± 6.31	0.438
Contractual	24.09 ± 5.66	
Conventional	23.00 ± 3.80	
Mandatory services	26.37 ± 5.36	
Corporative	22.85 ± 4.33	
Work experience (year)		
1-5	24.78 ± 5.52	0.552
6-10	24.68 ± 6.11	
11-15	26.27 ± 7.9	
16 <	27.83 ± 4.16	
Working shift		
Fixed	27.92 ± 5.39	0.03
Rotating	24.16 ± 5.64	
Having direct contact with patients		
Yes	25.06 ± 5.84	0.983
No	25.00 ± 4.35	
Do you have physical contact with the patient? (for example: getting I.V. lines, casting, …)		
Yes	24.95 ± 5.75	0.449
No	28.00 ± 6.97	
What sex do you most often deal with?		
Female	25.54 ± 5.85	0.606
Male	27.75 ± 5.18	
Both	90.24 ± 5.83	
With what group of patients do you work often?		
Patients with physical disabilities	26.16 ± 4.82	0.301
Dying patients	25.00	
Mothers and babies	24.66 ± 5.64	
Patients with mental disorders	22.66 ± 6.65	
Patients with the critical condition	24.94 ± 6.03	
With what emergency conditions do you face often?		
General emergency	24.48 ± 4.94	0.868
Orthopedic emergency	24.50 ± 6.45	
Trauma emergency	24.50 ± 6.48	
Burn emergency	26.50 ± 6.01	
Internal emergency	25.60 ± 6.54	
Heart emergency	26.00 ± 6.91	
Neurological emergency	23.75 ± 5.33	
Women's emergency	23.50 ± 6.02	
Eye emergency	25.16 ± 2.22	

Contd...

Table 4: Contd...

Characteristics	Mean ± SD	*P*
Oncology emergency	30.33 ± 5.79	
With how many nurses often do you work?		
One	23.50 ± 6.32	0.298
Two	24.50 ± 6.45	
Three	24.95 ± 5.75	
Four	25.06 ± 5.84	
Five or more	26.27 ± 7.9	

SD: Standard deviation

a majority of violent events occurred in the night shifts. These findings were congruent with the findings of a former study in Urmia, Iran.[29] A survey of violence against staff working in the EDs in Ankara, Turkey, has also reported that most of the violent behaviors against ED nurses occurred in evening and night shifts.[28] The high rate of WPV during the night shifts in the current study might be attributed to a number of factors. First, the numbers of nurses are lower and fewer physicians and office staff are available in night shifts. Then the waiting time for admission and treatment of patients might become longer in these shifts. Second, most of the nurses we studied were young, had < 5 years of work experience, were working in rotating shifts, and a majority of them were passing their mandatory postgraduation services. Such nurses are usually less experienced in managing critical situations and therefore face more violent behaviors from the patients and their companions whose expectations are not sufficiently met.[30] Furthermore, night shifts are longer than other shifts, and nurses in these shifts usually experience more fatigue due to staying awake, and access to less support. As most of the violent behaviors in the present study were done by the patients' relatives and by men, increasing the number of nurses and guards during the night shifts may reduce the incidence of violence against nurses. However, as the patients' companions were the most threatening group in this study, the causes of this phenomenon should be studied carefully.

Nurses in the present study possessed a mean resilience score of 25.05 in the acquirable range of 0–40. In other words, they acquired 63% of the possible score, showing relatively appropriate resilience. This finding is in line with what reported by Shakerinia and Mohammadpour[31] and Salimi *et al*.[26] who assessed the resilience of Iranian nurses worked in general wards and intensive care units, respectively. High resilience in nurses enables them to cope with stress, use suitable coping strategies, and manage stressful emergency conditions successfully. In addition, the high resilience of nurses is associated with an increased level of mental health and life satisfaction.[30] In general, resilient people can "bounce back" and quickly improve after a bad experience, have intellectual thinking skills, perseverance, endurance, and a sense of humor, are optimistic, able to solve problems and look at problems as an opportunity for learning and development, can behave respectfully with themselves and others, and enjoy of conflict resolution skills.[32]

In the current study, the mean resilience score was significantly higher in nurses who had not been exposed to WPV than those who experienced physical or verbal violence during the past 12 months. This finding was consistent with the results of a study that examined the association between resilience and WPV-related depression among ED nurses in Taiwan.[4] Similarly, studies in Australia[21] and Korea[33] showed that nurses and midwives who experienced WPV had lower levels of resilience. Some studies showed that mental health nurses develop resilience when exposed to WPV[22,34] as a result of finding positive meaning in the clients' aggressive behaviors, and more focusing on teamwork.[35,36] However, the same conclusion does not seem to be true for our less experienced participants.

Our results also showed that the resilience score of nurses working in rotating shifts was lower than those working in fixed shifts. This finding might be attributable to the fact that these nurses have been exposed to more violent behaviors. In other words, the frequent exposure of emergency nurses to aggressive behaviors of the patients and their relatives has reduced their resilience.

On the other hand, logistic regression analysis showed that shift working and resilience scores can significantly predict violence against nurses, and the predictive power of the working shift was more than three times of resilience. However, further studies are suggested in this regard.

This study had some limitations. The cross-sectional nature of the study and the limited sample size diminishes the generalizability of the findings. Therefore, further multicentre studies with larger sample sizes are suggested.

Conclusion

The results of the current study showed that nurses' resilience could predict their exposure to WPV, and hence that the higher the resilience, the less exposure to verbal and physical violence. Holding empowerment programs is suggested to improve the resilience of nurses. In addition, it is recommended to consider nursing resilience as a criterion in selecting nurses for employment in the ED.

Table 5: Logistic regression analysis for determining the predictors of workplace violence in nurses working in the emergency department of Tabriz educational hospitals (adjusted for gender, work experience, and working shift)

Variables	*B*	SE	Exp(*B*)	Wald	95% CI for EXP(B)		*P*
					Upper	Lower	
Frequency of physical violence in the last 12 months							
Gender	0.08	0.478	1.083	0.028	2.765	0.424	0.867
Work experience	0.269	0.305	1.308	0.775	2.379	0.719	0.379
Shift working	0.44	0.424	1.553	0.497	2.279	0.457	0.481
Resilience	0.083	0.04	1.087	4.304	1.176	1.005	0.038
Frequency of verbal violence in the last 12 months							
Gender	0.66	0.593	1.935	1.242	6.183	0.606	0.265
Work experience	0.056	0.314	1.058	0.032	1.958	0.571	0.858
Shift working	1.521	0.575	4.579	7.013	14.118	1.485	0.008
Resilience	0.199	0.058	1.221	11.702	1.368	1.089	0.001
Frequency of racial violence in the last 12 months							
Gender	0.025	0.732	0.976	0.001	4.095	0.232	0.973
Work experience	0.838	0.65	2.311	1.662	8.25	0.647	0.197
Shift working	0.75	0.783	0.472	0.917	2.192	0.102	0.338
Resilience	0.018	0.061	0.982	0.085	1.108	0.871	0.771

CI: Confidence interval, SE: Standard error

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Conflicts of interest

There are no conflicts of interest.

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