

Research



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Workplace violence experienced by nurses: associated factors and impact on mental health

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Abstract

Introduction: workplace violence is known as one of the most challenging issues in negative nursing work environments. The purpose of this study was to determine the prevalence rate of workplace violence (WPV) against nurses in Tunisian university hospitals, to identify associated factors and to evaluate the impact on nurses' mental health.

Methods: a cross-sectional study was conducted during April to July 2019 at two public hospitals. Data were collected using a self-administered questionnaire. Mental health was evaluated using General Health Questionnaire (GHQ12). **Results:** a total of 190 nurses completed the questionnaire. Of

them, 107 (56.3%) indicated that they had experienced workplace violence, 46 (42.9%) had been subjected to physical violence (PV) and 100 (93.4%) had been subjected to verbal violence (VV). Binary logistic analyses indicated that male nurses were more often victims of PV (OR=4.66; 95%CI=1.86-11.66). Likewise, working in psychiatry department and in pediatrics increased the risk of PV (OR=8.64; 95%CI=2.22-33.5, OR=9.05; 95%CI=2.65-30.9) respectively. Poor mental health was increased in nurses who experiencing WPV (OR=16; 95%CI=6.1-43.9), PV (OR=3.7; 95%CI=1.8-7.4) and VV (OR=6.9; 95%CI=3.2-14.5). **Conclusion:** workplace violence was prevalent in Tunisian hospitals. Male gender, working in psychiatry department and in pediatrics was the most important associated factors to PV. University hospitals' administration and policy makers should develop practical measures for preventing and controlling the prevalence of violence against nurses.

Introduction

Health care workers are among the groups most experiencing aggressive behavior at work. The National Institute for Occupational Safety and Health notes that hospital employees are at high risk for experiencing violence in the workplace, especially nurses [1]. This category takes a leading role within health-care teams, and often works at the front line interacting with all kinds of patients and has direct contact with their families and relatives. WPV is known as one of the most challenging issues in negative nursing work environments. Groenewold *et al.* (2017) analyzed surveillance data about injury due to workplace violence from 2012 to 2015 in the US. They found that nurses have the highest workplace violence injury rates of all health professionals, finding that the nurses in their study faced 1.7 times the risk of experiencing injury due to workplace violence than personnel not involved in patient care. A meta-analysis of 136 international research

studies, conducted in Asian, European, Anglo and Middle East regions demonstrated that verbal abuse is the most frequent type of violence reported by nurses [3]. This situation may be highly distressing for nurses and entails a series of negative consequences, since verbal and physical violence against workers is associated with decreased job satisfaction, increased occupational strain, and poor patient care outcomes. The nurse may also respond to aggression with absenteeism from work, changing jobs, or leaving the nursing profession altogether [4]. This study aimed to determine the prevalence rate of WPV against nurses in Tunisian university hospitals, to identify associated factors and to evaluate the impact on nurses' mental health.

Methods

Setting and participants

This was a cross-sectional survey conducted from April to July 2019 at two public hospitals belonging to the Ministry of health in Sfax, Tunisia: Hedi Chaker University Hospital and Habib Bourguiba University Hospital. A self-administered questionnaire was distributed to nurses working in all duty shifts (morning, evening and night) and who were providing direct care to patients (n=803). We excluded nurses with less than 12 months of seniority.

Study instrument

The study adapted an anonymous self-reported survey questionnaire. It was composed of 3 main sections: (a) demographic and workplace data (age, gender, marital status, educational levels, years of work experience), (b) questions related to WPV against nurses perpetrated by patients and/or parents or visitors within the preceding year: physical violence (PV) and verbal violence (VV), (c) mental health effects using the General Health Questionnaire (GHQ12) [5]. The reliability for the GHQ12 was determined by Cronbach's alpha ($\alpha = 0.84$).

Data collection

A pilot study adapted on 15 participants had been conducted in occupational health department to test the comprehensibility and usability of questions. The nurses answered the questionnaire in an average of 15-20 minutes and did not make any recommendations for changes. Before conducting the study, the researchers obtained approval from the directors of the two university hospitals of Sfax-Tunisia. Then, they went to all departments (except administrative and technical ones), distributed the questionnaire and invited nurses to participate. The questionnaires were answered individually, during working hours, in accordance with every nurse timetable, for causing minimum disturbance to the service, and with flexibility to fit working patterns.

Data analysis

Statistical analysis was performed using the Statistical Package for the Social Sciences (version 23.0). The results of quantitative variables were presented as mean \pm standard deviation (SD). Qualitative variables were presented as percentages. Chi-square and Fisher's test were performed for categorical variables in independent samples. In order to determine the independent factors associated with WPV, PV and VV, binary logistic regression analyse was used, after adjusting on the confounding variables. Adjusted odds' ratio (OR) with corresponding 95% confidence intervals were presented. To assess the impact of workplace violence on mental health, T-test of hypothesis testing was conducted to find any significant difference in mean GHQ-12 between those nurses who experienced workplace violence and those who did not. P-values lower than 0.05 were considered statistically significant.

Ethical considerations

To protect confidentiality, no identification information of participants was collected. Completion and return of the questionnaire was considered as consent to participate. There were

not financial or non-financial incentives for survey participation. In each department, the head nurse was charged to supervise each participating nurse to collect the answered questionnaire in closed envelope.

Results

A total of 276 participants returned the questionnaire for a response rate of 34.3%. Of these, 190 questionnaires were valid: 33 incompleting and 53 were excluded (less than one year of seniority). The age of participants ranged between 23 and 59 with a mean of 38.7 ± 9.3 years, 66.3% were female. The majority held university degrees in nursing (70%) and had a mean work experience of 13.8 ± 9.4 years. Of the nurses surveyed: 64.7% worked in medical department. The largest proportion (55.3%) had an alternate shift schedule (Table 1).

Workplace violence

The research found that 56.3% of the nurses were exposed to WPV from patients and/or parents or visitors. Of the participants violence, 42.9% of the nurses had been subjected to physical violence and 93.4% of the nurses had been subjected to VV. Nurses stated that PV had come in the form of jostling in 39.1% of cases and of hitting in 36.9% of cases. VV against nurses was in the form of swearing in 53% of cases (Table 2).

Factors associated with WPV

A chi-square test showed that none of the variables tested were associated with WPV. Male nurses experienced more PV than female ones (OR=2.83; 95% CI=1.43-5.62). Working in psychiatry department and in pediatrics was significantly associated with PV (OR=4.76; 95% CI=1.66-13.63) and (OR=4.17; 95% CI=1.20-14.37) respectively. VV was more frequent in younger nurses (age ≤ 30) (OR=2.04; 95% CI=1.01-4.12). It is also more frequent in Bachelor's degree nurses (OR=2.03; 95% CI=1.08-3.82). In contrast, married nurses, those working in intensive care unit and those

working in morning shift were less subjected to VV (OR=0.36; 95% CI=0.15-0.87), (OR=0.27; 95% CI=0.08-0.87) and (OR=0.5; 95% CI=0.26-0.92) respectively (Table 3).

Logistic regression analysis of WPV

Table 4 presents the results of logistic regression analysis. After adjustment for confounding variables (age, gender, marital status, educational level, department and shifts), WPV was significantly associated with working in intensive care unit (OR=0.19; 95% CI=0.05-0.63). PV was associated with male gender (OR=0.21; 95% CI=0.09-0.48). Likewise, working in psychiatry department and in pediatrics increased the odds of experiencing PV (OR=8.64; 95% CI=2.22-33.5) and (OR=9.05; 95% CI=2.65-30.9) respectively. VV was significantly associated with working in intensive care unit (OR=0.24; 95% CI=0.007-0.82).

Impact of WPV on nurses' mental health

The score of GHQ12 of participants ranged between 0 and 12 with a mean of 2.62 ± 2.94 . The comparison results showed that the mean score of GHQ-12 in nurses who experienced WPV and PV are higher than in those who did not (respectively $p=0.045$ and $p=0.01$) (Table 5).

Discussion

This research was conducted to analyze violence experienced by nurses employed at two university hospitals in south Tunisia. The research found that 56.3% of nurses had been subjected to WPV the previous 12 months. This rate was higher than the prevalence shown in developed countries such as Italy (49.4%) [6] and Australia (36%) [7]. It was concluded that VV was more frequent than PV (93.9% versus 42.9%). Almost studies have shown that VV was higher than PV [8,9] because verbal abuse could not be controlled by any sort of security measures [8].

PV affected 42.9% of nurses which was higher than the rate shown in the study of Zampieron *et al.*

(18.4%) [6]. However, VV reported in our study (93.9%) was similar to the same study (95.2%). This prevalence considerably exceeded that of both Palestine (40%) [10] and South Africa (45%) [11]. Coming out of a political and social revolution, violence has risen in Tunisian society in its most varied forms and become a daily mode of expression [12]. Male nurses were more often victims of physical violence than their female counterparts which was in accordance with a systematic review published by Edward *et al.* [13].

In our study, nurses working in intensive care units had experienced less WPV and VV than nurses in the other departments. These findings disagreed with those of previous studies noticing that this population shared the second rank of most frequently reported departments where WPV took place after emergency department [14,15]. This can be explained by the fact that violence is routinely underreported in this health sector. The intensive care workers considered WPV as an expected part of their job calling it "nursing silent epidemic" and even may be accepted it calmly [16]. Nurses working in pediatrics were more likely to have experienced PV. As shown in literature, pediatrics was known traditionally as high-risk for WPV [17]. The same applied to psychiatry nurses who were more likely to have experienced PV. In fact, previous studies have documented that 64.3-84.1% of psychiatry nurses were exposed to PV and are exposed to PV [6,18]. We found that WPV was related to poor mental health. Likewise, a Chinese study who found that the workplace violence had negative effects on the job performance and quality of life [19]. A systematic review concluded that violence is associated with negative consequences in healthcare such as increases in anxiety, depression levels and guilt with negative outcomes on well-being and quality of life of healthcare professionals [20].

To our knowledge, this study is the first to assess WPV among nurses in the Arab Maghreb Union, and to evaluate mental health using GHQ12 which is considered to be a high reliability and validity questionnaire. On the other hand, this study has

several limitations. The questionnaire employed in the present study was based on retrospective data and self-reporting, which may have suffered from recall bias. Furthermore, the nurses' reluctance to participate is also a limitation of this study, as it is difficult to obtain information from unenthusiastic nurses. To solve this restriction, a larger-scale, multi-centric, comparative and prospective investigation could be conducted among various hospitals and health structures.

Conclusion

While the findings of this study are generally not new, they do offer an illustration of the types and contexts of violence in the workplace towards nurses, including the type of nurse that is more likely to be targeted. More specifically, physical aggression was most frequent with male nurses, in psychiatry departments and pediatrics. Unlike literature, intensive care departments were protected from WPV. Nurses who were exposed to WPV often experienced a psychological impact post incident. Our study demonstrated that the WPV with nurses was associated to poor mental health. Determining the pattern and nature of WPV is the first step in developing suitable strategies to combat violence in the hospital workplace, and would support planning of appropriate intervention/prevention strategies. As hospital nurses still suffer from workplace violence, especially verbal abuse from patients/families, our results support the implementation of “safe hospital” policies and showing zero tolerance to workplace violence toward health care workers, including nurses, in order to retain them and to improve patient safety.

What is known about this topic

- *Health care workers are among the groups most exposed to workplace violence;*
- *Workplace violence has negative consequences on work environment.*

What this study adds

- *Nurses exposed to workplace violence suffered from poor mental health;*
- *Necessity of implementation of “safe hospital” policies.*

Competing interests

The authors declare no competing interests.

Authors' contributions

Nada Kotti: writing and design methodology; Ferial Dhouib: writing and development of research aims; Amel Kchaou: data collection and application of statistical to analyse study data; Hana Charfi: data collection; Kaouthar Jmal Hammami: bibliographic research; Mohamed Larbi Masmoudi: activity planning and execution; Mounira Hajjaji: management and coordination responsibility. The authors have read and agreed to the final manuscript.

Tables

Table 1: demographic and work characteristics of the participants

Table 2: types of workplace violence among nurses

Table 3: factors associated with WPV

Table 4: logistic regression analysis of workplace violence

Table 5: impact of WPV on nurses' mental health

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Table 1: demographic and work characteristics of the participants

Variable	All nurses (n=190)	
	n	%
Age		
[23-30]	50	26.3%
]30-40]	67	35.3%
]40-50]	45	23.7%
]50-59]	28	14.7%
Gender		
Male	64	33.7%
Female	126	66.3%
Marital status		
Married	161	84.7%
Unmarried	29	15.3%
Educational level		
University degree	133	70%
Bachelor's degree	57	30%
Department		
Medical	123	64.7%
Surgical	67	35.3%
Work experience		
[1-10]	93	48.9%
]10-20]	56	29.5%
]20-30]	24	12.7%
]30-37]	17	8.9%
Shifts		
Alternate	105	55.3%
Fixed	85	44.7%
Morning	61	32.1%
Afternoon	16	8.4%
Night	8	4.2%

Table 2: types of workplace violence among nurses

	n	%
WPV (n=190)		
Yes	107	56.3
No	83	43.7
Physical violence (n=107)		
Yes	46	42.9
No	61	57.1
Types of physical violence (n=46)		
Jostling	18	39.1
Hitting	17	36.9
Throwing an object	7	15.2
Spitting	7	15.2
Kicking	6	13.1
Destroying equipment	5	10.8
Slapping	4	8.7
Headbutting	3	6.5
Scratching	2	4.3
Biting	1	2.2
Pinching	1	2.2
Verbal violence (n=107)		
Yes	100	93.4
No	7	6.6
Types of verbal violence (n=100)		
Swearing	53	53
Verbal threat	43	43
Reviling	39	39
Gesturing	16	16
Intimidation	13	13
Mobbing	7	7
Sexual assault	4	4
Threatening with object	1	1

Table 3: factors associated with WPV

Variable	Any violence (56.3%, n=107)			Physical violence (42.9%, n=46)			Verbal violence (93.4%, n=100)		
	n	%	p	n	%	p	n	%	p
Age									
[23-30]	28	26.2%	0.26	9	19.6%	0.5	29	29%	0.04
]30-40]	36	33.6%	0.6	19	41.3%	0.12	34	34%	0.55
]40-50]	26	24.3%	0.21	10	21.7%	0.89	22	22%	0.73
]50-59]	9	8.4%	0.07	6	13%	0.82	9	9%	0.16
Gender			0.36			0.002			0.47
Male	39	60.9%		24	37.5%		36	56.3%	
Female	68	54%		22	17.5%		64	50.8%	
Marital status			0.13			0.64			0.02
Married	87	81.3%		38	82.6%		79	79%	
Unmarried	20	18.7%		8	17.4%		21	21%	
Educational level			0.32			0.41			0.026
University degree	78	58.6%		30	22.6%		77	57.9%	
Bachelor's degree	29	50.9%		16	28.1%		23	40.4%	
Department									
Surgical	38	35.5%	0.93	14	30.4%	0.41	34	34%	0.7
Medical	69	64.5%		32	69.6%		66	66%	
Intensive care	4	3.7%	0.08	4	8.7%	0.93	4	4%	0.034
Psychiatry	10	62.5%	0.6	9	56.3%	0.02	10	62.5%	0.4
Pediatrics	8	72.7%	0.35	6	54.5%	0.016	7	63.6%	0.54
Work experience									
[1-10]	52	55.9%	0.91	24	25.8%	0.61	51	54.8%	0.55
]10-20]	33	58.9%	0.63	14	25%	0.87	28	50%	0.63
]20-30]	11	45.8%	0.26	4	16.7%	0.35	10	41.7%	0.25
]30-37]	11	64.7%	0.46	4	23.5%	0.94	11	64.7%	0.29
Shifts									
Varied	62	59%	0.39	26	24.8%	0.84	59	56.2%	0.27
Fixed	45	52.9%		20	23.5%		41	48.2%	
Morning	29	47.5%	0.09	14	23%	0.78	25	41%	0.027
Afternoon	10	62.5%	0.6	4	25%	0.93	10	62.5%	0.4
Night	6	75%	0.27	2	25%	0.95	6	75%	0.19

Table 4: logistic regression analysis of workplace violence

Variables		Sig	Exp (B)	95% CI for Exp (B)	
				Lower	Upper
Workplace violence	Intensive care	0.007	0.192	0.058	0.63
Physical violence	Gender male	0.001	4.66	1.86	11.66
	Psychiatry	0.002	8.64	2.22	33.5
	Pediatrics	0.0001	9.05	2.65	30.9
Verbal violence	Intensive care	0.02	0.24	0.007	0.82

Table 5: impact of WPV on nurses' mental health

	Mean GHQ-12 scores		p
	Nurses victims of violence	Nurses not victims of violence	
Workplace violence	2.98±3.22	2.14±2.48	0.045
Physical violence	3.59±3.93	2.31±2.49	0.01
Verbal violence	2.64±2.82	2.59±3.04	0.906