Original Article

Frequency of violence against nurses and its related factors during cardiopulmonary resuscitation in emergency wards

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Abstract

Context: Workplace violence in the healthcare setting is an important issue in recent years.

Aims: The aim of this study was to evaluate the frequency of violence against emergency and cardiopulmonary resuscitation (CPR) nurses and its related factors in teaching hospitals in 2019.

Setting and Design: In this cross sectional study, 140 emergency and CPR nurses who worked in hospitals of the Mazandaran University of Medical Sciences randomly selected.

Materials and Methods: The workplace violence in the health sector questionnaire was used.

Statistical Analysis Used: Data were analyzed using the SPSS software version 20.0.

Results: The mean age of the nurses was 34.48 ± 6.07 years with work experience of 10.49 ± 5.93 years. Most of them were female (n = 86; 61.4%) and married (n = 115; 82.1%). A total of 302 different types of harassment were reported during 12 months before the study including physical 55.7%, verbal/bullying 38.6%, sexual 5%, and racial 29.3%. Relatives of the patients were the main perpetrators of the violence. Association between gender and physical and sexual harassments was significant ($P = 0.0001$ and $P = 0.043$, respectively). Physical harassment was significantly associated with marital status ($P = 0.044$), education level ($P = 0.034$) and worry about workplace violence ($P = 0.020$). The association between racial violence with the working situation was significant ($P = 0.008$).

Conclusion: Based on results the prevalence of workplace violence against emergency and CPR nurses is a serious problem. Future research must move from descriptive to intervention studies to provide a guideline in clinical settings.

Keywords: Cardiopulmonary resuscitation, Emergency ward, Nurse, Workplace violence

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INTRODUCTION

Following cardiac arrest cardiopulmonary resuscitation (CPR) performs to provide oxygenation and circulation to the body and improve the chance of survival of the patients.[1,2] CPR is a key component of emergency care.[3] During resuscitation efforts, the emergency nurses often took families to the bedside.[4] The family presence during CPR has negative and positive effects.[5] The incidence of workplace violence is three times higher in health-care settings than in other workplaces and emergency nurses are the most exposed to this phenomenon.[6]

Violence in health-care settings may occur in many different ways: verbal threats or physical violence may result in death, lost workdays, loss of consciousness, restriction of activity or work, loss of property, termination of employment, and transfer to another ward. Furthermore, it is categorized into physical and nonphysical (psychological) violence. Physical violence involves the use of physical force against an individual or a group, and can lead to physical, psychological (emotional), or sexual harm and includes punching, kicking, slapping, shouting, pushing, biting, pinching, and wounding using sharp objects.[7] Sexual harassment is defined as any type of unwelcome sexual behavior that occurs in verbal, nonverbal, physical, mental or visual forms and is accompanied by insult, humiliation or threat to the victim's health.[8] Racial harassment is defined as any threatening behavior in relation to race, color, language, nationality, religion, or in relation to certain minority issues, birth or other conditions affecting the dignity of women and men in the workplace.[9]

To date, three main clusters of factors have been found to cause violent episodes: environmental factors, patient-related factors, and factors related to communication between nurses and patients.[10] Violence in hospitals has several negative impacts including physical and mental harm in the short and long terms,[11] high costs for the organization, and possible reduction in the quality of care received by violent patients.[10] Most of the violence is in the intensive care and emergency departments.[12] The results of the researches showed that the highest rate of violence against nurses was verbal (87%), nonverbal (70%), and physical (%28) and all of these violences were perpetrated by the patient's relatives.[13]

Workplace violence may decrease job satisfaction, quality of life, and productivity, and increase in nurses' turnover that consequently might lead to increased medical errors, reduced quality of patient care, and adverse effects on nurse-patient communication.[14,15] Although numerous studies have been conducted on workplace violence, especially in emergency departments, there is low studies regarding the current status of violence toward nurses during CPR procedure. The aim of this study was to evaluate the frequency, type, and severity of violence toward nurses and to investigate the consequences of such behavior during CPR in emergency wards of teaching hospitals of Mazandaran University of Medical Sciences in 2019. Moreover, the availability of measures for dealing with aggression and violence at the workplace were analyzed.

MATERIALS AND METHODS

This cross-sectional study was conducted among emergency ward and CPR nurses who worked in affiliated hospitals of Mazandaran University of Medical Sciences (Fatemeh Zahra, Imam Khomeini, Zare, and Buali in Sari, Razi in Qaemshahr and Imam Khomeini in Behshahr) in 2019. Inclusion criteria were having at least 1 year of professional experience in CPR and working in the emergency ward. The exclusion criterion was the experience of stressful life events in the last 6 months (natural disaster, divorce, death of relatives,…).

Sample size was estimated 140 cases based on Sheikh-Bardsiri *et al*.'s study[16] which reported 22% of the nurses experienced a type of workplace violence. After calculating the sample size, a multistage random sampling was conducted in two phases. In the first stage, all of the hospitals included in this study and the needed sample size in each hospital were determined according to the proportion of nurses worked there. In the second stage, samples were selected randomly from the list of nurses in each hospital based on number of emergency and CPR nurses, provided by the office of nursing in each hospital.

Data collection

Data were collected using the questionnaire of "workplace violence in the health sector", developed in 2003 by the International Labor Organization, International Council of Nurses, WHO, and Public Services International.[17] This questionnaire contains five sections to assess personal and workplace information (21 items), physical violence (18 items), workplace psychological violence (18 items), including verbal violence (12 items), sexual (12 items) and racial harassment (12 items), health sector (8 items), and participants' views on workplace violence such as personnel, management, social, and patient-related factors and patient relatives (3 open-ended questions). Higher frequency indicates more incidence of violence.[7] Content validity of the questionnaire was confirmed by 11 experts in Esmaeilpour *et al*.'s study.[18] Reliability of the questionnaire was assessed in a pilot study through completing it twice, with a 15-day interval, by 180 health workers and the correlation coefficient was $r = 0.71$.[7]

Nurses were trained on how to fill out the questionnaires. In each hospital questionnaires were received by the office of nursing and were distributed among nurses who were selected randomly. Participants were asked to fill the questionnaire in a private environment and return it back to the nursing office. Then, the main researcher gathered all the questionnaires. All participants were explained that they could choose more than one item in questions regarding the type of psychological violence and reasons of the violence.

Ethical considerations

The ethics committee of Mazandaran University of Medical Sciences approved the study protocol (ethics number: IR. MAZUMS.REC.1398.5289). Moreover, before data collection, permissions were obtained from the hospitals' officials and ward managers. All participants were briefed on the study objectives, assured about the anonymity of the questionnaire and voluntary nature of participation in the study, and also signed a written informed consent.

Data analysis

Descriptive statistics (frequency, percent, means, standard deviations, and frequencies) were used to describe the sociodemographic characteristics of nurses and prevalence, causes and the subject of workplace violence against nurses. Inferential statistics were performed using descriptive statistics and Chi-square, *t*-test, and ANOVA test. Data were analyzed using the SPSS software version 20.0 (IBM, Armonk, NY, USA) and a value of $P < 0.05$ was considered as statistically significant.

RESULTS

The average age of the participants was 34.48 ± 6.07 years. Most of them were female (n = 86; 61.4%) and married (n = 115; 82.1%). The majority of them were registered nurses (n = 71; 50.7%) with average work experience of 10.49 ± 5.93 years. Most of the participants worked fulltime (n = 134; 95.7%) and more than half of them (n = 88; 62.9%) had a protocol for reporting workplace violence. The majority of them had a bachelor's degree in nursing (88.6%) and 95.7% were full-time and working in shifts (87.1%) [Table 1].

In the 12 months before the survey, different types of aggression were reported a total of 302 times and 82.1% of the participants (115 cases) experienced the violence. According to the findings, the frequencies of physical harassment, verbal/bullying, sexual, and racial harassment were 55.7%, 38.6%, 5%, and 29.3%, respectively. It should be noted that most cases (98.7%) of physical violence reported were without weapons and the patients' relatives were the main perpetrators of the violence.

129 (92.1%) of the nurses were worried about violence in their workplace, 62.9% (88 cases) had a procedure for the reporting of violence in their workplace and only 16 cases (11.4%) reported encouragement to report workplace violence.

Nineteen cases (24.4%) were injured as a result of the violent incident and 7 of them (36.8%) required formal treatment for the injury. Twenty-two cases (28.2%) needed to take time off from work after being attacked.

Respond to the incidence

The most frequent response to the harassment included: physical harassment: reporting to a senior staff member (33, 42.3%), taking no action (25, 32.1%) and telling the person to stop (25, 32.1%); verbal harassment: taking no action (25, 46.3%) and reporting to a senior staff member (20, 36.4%); sexual harassment: taking no action (4, 57.1%) and reporting to a senior staff member (4, 57.1%); racial harassment: attacker threat (41, 100%) and pursued prosecution (40, 28.57%).

Table 1: Demographic and occupational characteristics of participants (n=140)

Variable		Number	Percent
Gender	Female	86	61.4
	Male	54	38.6
Marital Status	Single	25	17.9
	Married	115	82.1
Work area	Emergency	127	90.7
	Cardiology	13	9.3
Work type	Full-time	134	95.7
	Part-time	6	4.3
Working shift	7 am to 2 pm	11	7.9
	6 pm to 7 am	1	0.7
	2 pm to 7 am	6	4.3
	Mixed	122	87.1
Number of CPR in day	1	98	70
	2	28	20
	3	9	6.4
	4	2	1.4
	≥5	3	2.1
Age of the patients	Children	2	1.4
	Adolescents	49	35
	Elderly	54	38.6
	Adolescents & Elderly	19	13.6
	Teenage, Adolescents & Elderly	5	3.6
	All ages	11	7.9
Sex of the patients	Female	5	3.6
	Male	10	7.1
	Both	125	89.3
Presence of security guards	Yes	103	73.6
	No	37	26.4
Presence of Protocols for reporting workplace violence	Yes	88	62.9
	No	52	37.1
encouragement to report workplace violence	Yes	13	9.3
	No	127	90.7
Age	Mean±SD	34.48±6.07	
Work experience	Mean±SD	10.49±5.93	
Number of beds in ward	Mean±SD	18.59±8.42	

SD: Standard deviation, CPR: Cardiopulmonary resuscitation

Association between gender and physical and sexual harassments was statistically significant ($P = 0.0001$ and $P = 0.043$, respectively). Furthermore, physical harassment was significantly associated with marital status ($P = 0.044$) and married nurses experienced a higher rate of violence (69, 60%), but other types of harassments were not associated with marital status ($P > 0.05$). Education level was only associated with physical harassment and was more prevalent among bachelor nurses ($P = 0.034$) [Table 2].

The association between racial violence with the working situation was significant ($P = 0.008$). The association between physical violence and worry about workplace violence was statistically significant so that people with high and very high worry had experienced higher physical violence ($P = 0.020$).

The association between all types of harassment with the number of daily CPR, type of employment, working ward, and years of work experience were not statistically significant ($P > 0.05$). Moreover, nurses believed that the presence of security forces and safety measures in the wards (103 ones, 73.6%) and decreasing cost of the patients (19 cases, 13.6%) were noted as the most important deterrents to harassment. Participants could choose more than one option [Table 3].

Staff cuts (49, 35%) and restriction of resources (24, 17.1%) were the most common changes that occurred in the workplace in the past 2 years and most of them (76, 54.3%) believed that work situation for staff worsened.

DISCUSSION

The present study showed that violence against nurses during CPR is highly prevalent. The distribution of nurses in terms of exposure to physical violence, frequency, and time of occurrence showed that the majority of nurses (55.7%) had the experience of physical violence at work during the last year. Al-Omari also reported 52.8% of physical violence in nurses working in hospitals in Jordan,[19] while in Salimi *et al*.'s study performed in the nonpsychiatric emergency departments of the three main hospitals of Tehran in Iran, this rate was 39.7%.[20] In a study of nurses working in 20 hospitals in Iran, 19.1% stated that they had been subjected to physical violence at least once in the past 6 months[21] and it was 19.1% in Wei *et al*.'s study in Taiwan and the highest (55.5%) prevalent in an emergency room or intensive care unit (ICU)[22] and the other types of violence against CPR nurses in this study were verbal (37.57%), racial (29.3%) and sexual (5%), respectively. In the study of Moshtagh *et al*., the most common types of violence

Table 2: Frequency of different types of violence based on demographic factors

	Physical		Psychological		Bullying/Mobbing		Sexual		Racial	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
Gender										
Female	37	43.0	77	89.5	29	33.7	7	8.1	20	23.3
Male	41	75.9	45	83.3	25	46.3	0	0	21	38.9
P	0.0001		0.309		0.156		0.043		0.057	
Marital status										
Single	9	36.0	20	80.0	13	52.0	1	4.0	5	20.0
Married	69	60.0	102	88.7	41	35.7	6	5.2	36	31.3
P	0.044		0.319		0.173		1.000		0.336	
Educational status										
Bachelor	65	52.4	109	87.9	51	41.1	6	4.8	35	28.2
Master	13	81.3	13	81.3	3	18.8	1	6.3	6	37.5
P	0.034		0.434		0.105		0.581		0.560	
Working ward										
Emergency	73	57.5	113	89.0	52	40.9	7	5.5	38	29.9
Cardiology	5	38.5	9	69.2	2	15.4	0	0	3	23.1
P	0.244		0.065		0.081		1.000		0.756	

Table 3: Measures to deal with workplace violence in nurses' workplace

What measures to deal with workplace violence exist in your workplace?	Number	Percent
Security measures (e.g. guards, alarms, portable telephones)	103	73.6
Improve surroundings (e.g. lighting, noise, heat, access to food, cleanliness, privacy)	12	8.6
Restrict public access	12	8.6
Patient protocols (e.g. control and restraint procedures, transport, medication, activities programming, access to information)	13	9.3
Restrict exchange of money at the workplace (e.g. patient fees)	19	13.6
Increased staff numbers	10	7.1
Changed shifts or rotas (i.e. working times)	13	9.3
Training (e.g. workplace violence, coping strategies, communication skills, conflict resolution, selfdefence)	13	9.3
Investment in human resource development (training for career advancement, retreats, rewards for achievement, promotion of healthy environment)	1	0.7
None of these	5	3.6

were verbal (87%), nonverbal (70%), and physical (28%), respectively.[23] In Al-Omari study, 67.8% of patients were verbally abusive and it was the most common abuse.[19] Research by Fallahi Khoshknab *et al*. in Iran revealed among health workers sexual and racial harassment frequencies were 4.7% and 12%, respectively.[9] The results of the study by Babaei *et al*., in Tabriz indicated that nurses reported the most type of workplace violence against them in verbal, physical, rather than racial, and sexual terms.[24] Our study revealed 82.1% of the participants experienced at least one incidence of violence in the past year. Research by Wei *et al*. in Taiwan showed that 49.6% nurses had at least one incidence of violence.[22] In the current study, the most common violence that CPR nurses experienced was physical violence that is different from other studies[19,23,24] on violence in emergency departments. These findings are somewhat different from the results of the present study may be because during CPR, the patients' family or companions suffer a high stress level, which in turn result in high violence experience on them.

In this study, the most frequent number of physical violence against CPR nurses was 2–4 times (37.7%) in most cases. The results of Wei *et al*.'s study and showed the Emergency Room/ICU nurses 6.25 times experience higher physical violence in comparison with other nurses.[22] In inconsistent with our study ALBashtawy's study indicated emergency nurses approximately fivefold experienced verbal violence in compared with physical violence.[25] All of them indicate the high incidence of physical and verbal violence against nurses and special position CPR nurses.

In this study, a significant association was found between physical violence and nurses' female gender ($P = 0.0001$). The study of Moshtagh *et al*., was in line with ours ($P < 0.001$).[23] In the study of Ferri *et al*., female were more frequently assaulted in comparison with men.[26] However, in some studies, workplace violence was experienced similarly between males and females[22] and other studies showed male nurses experienced more physical violence than female nurses.[22,26] The significant correlation between physical violence and female gender can be justified by the higher number of female nurses in this study (61.4%). On the other hand, it may be because women have lower physical strength than men and are therefore at risk and should be given special attention.[23]

In the present study, workplace violence was experienced similarly between different age and work experience groups with any type of violence. The Moshtagh *et al*.'s study as in line with the present study.[23] In some studies, lower age and lower work experience of nurses showed a significant and inverse correlation with all types of violence.[22,27] One of the reasons that may justify this finding is the relatively lower age and work experience of the nurses.

In this study, none of the nurses were shamed about reporting violence, and 14.3% of those surveyed physical violence did not consider it to be important and did not report it. Arnetz *et al*.'s research showed 45% % of hospital employees had reported violence informally in other side 88% did not report violence in the electronic system.[22,27,28] In Kitaneh and Hamdan study, 14.6% of nurses felt embarrassed about their report of violence and worried about their occupational future, and 20.8% of the study population did not consider violence to be important and did not report it.[29]

In the study of Kitaneh and Hamdan 32.5% of the respondents did not report the violence because they believed it to be ineffective.[29] In this regards, failure to report violence and therefore, lack of information in this area is a major problem in implementing violence reduction programs. As Arnetz *et al*. noted underreporting and characteristics of health care workers who less likely to report the violence are important concerns in educational and preventive efforts.[28]

In the present study, the perpetrator of physical violence was patient relatives in 67.94% and patients in 21.79%. Furthermore, 2.56% of physical violence was performed by colleagues. Park *et al*. in their study in South Korea among all staff nurses working on all nursing units (48 units) reported the main perpetrators of physical violence were patients (64.4%), physicians (49.3%), and patients' families (48%).[30] In Hasani *et al*.'s study in the emergency department of Rasoule-Akram hospital, the majority of physical violence cases were by the patients and their relatives (27.6%).[31] ALBashtawy in their study that directed to emergency nurses at governmental and private hospitals in Jordan, reported 7.4% of physical violence by co-workers.[25]

In this study, the cause of verbal violence in 59.26% was the patient relatives, in 12.96% were the patient and in 11.11% were the colleagues. Talas in his study in Ankara reported 98.8% and 64.2% of cases of verbal abuse by the relatives and patient, respectively.[32] Budin stated in his study that during 3 months, about 49% early career registered nurses experienced verbal abuse from nurse colleagues at least once.[33] In ALBashtawy study showed the emergency nurses reported 11.0% of verbal violence by co-workers.[25] In the study of Moshtagh *et al*., verbal, nonverbal, and physical violence were performed by the patient's relatives.[23] In Behnam *et al*.'s study, the main

contributors of violence were patients and their relatives.[34] Since most cases of violence in this study and other studies have been performed by patient relatives, therefore, measures to reduce the presence of patient relatives in the emergency department may be effective in reducing the incidence of violence, especially physical violence.

In the present study, in 39.7% no attempt to investigate the cause of physical violence was done. Al-Omari, s study indicated (63.2%) of the nurses working in Jordanian general hospitals stated that there were procedures to report violence in their workplace but only 52% encouraged to report it.[19] Some reasons may be considered for not reporting the workplace violence that include: lack of follow-up on previous violence, absence of a detailed reporting system unawaring with legal rights, and perceived useless violence reporting. Therefore, many cases of violence may not have been reported.

Nurses in most cases of physical violence took no action or told the person to stop (32.1%). In a survey by Talas *et al*. 41.9% of nurses took no action and were silent after verbal violence and 35.8% reported it. Furthermore, 59.5% of nurses took no action and were silent after verbal violence and 56.8% reported it.[32] Al-Omari also stated the most common responses to verbal abuse were to tell the attacker to stop it (48.9%), to take no action (45.9%), and (37.5%) acted warning against the abuser verbally.[19] It seems that the nurse's supportive role for patients and even their relatives has been effective in inviting them to relax and to avoid emotional reactions.

The results indicated that 5%, and 29.3%, of CPR nurses had been exposed to sexual and racial harassment over the past year, respectively. Fallahi Khoshknab *et al*.'s study showed the sexual and racial harassment frequencies were 4.7% and 12% among health workers, respectively.[9] The sexual harassment frequency is consistent with the current study. However, racial harassment was higher that was reported by CPR nurses in this study. It is consistent with Li *et al*.'s study that showed that racial harassment among residents was 26%.[35] In comparision to other study that was done in Iran[9] higher incidence of racial harassment in the current study could be attributed to cultural diversity in Mazandaran province and revealed that there is especially a need for cultural nurturing of lay people in this regard for decreasing of the racial harassment.

Limitation

The study is also limited by the fact that the data were collected by a retrospective self-report questionnaire that inevitably relies on participants' memory; thus, the estimated prevalence would have been subjected to recall bias and some cases may have been neglected.

CONCLUSION

The results of this study showed that the frequency of violence against nurses in this study were physical (55.7%), verbal (37.57%), racial (29.3%), and sexual (5%), respectively. The results indicate a high incidence of physical and verbal violence against nurses during CPR. The occurrence of high physical and verbal violence during CPR indicates that high stress is tolerated by colleagues and patients, families. Therefore, measures should be taken to reduce stress during CPR. In another side, lower incidence of sexual and racial harassments in comparison with physical and verbal violence among CPR nurses should not underrate those types of violence by healthcare managers.

It seems evident that nurses in our country also need continuing education concerning their rights and personal safety. Based on the findings of this study, it is suggested that researchers consider variables such as nurse's job satisfaction, patient's satisfaction with his/her possible costs over the days of hospitalization, mental health and personality type of nurses, the patient and their relatives, and the related stressors, etc. The results confirm need to the allocation of efficient manpower, equipment, facilities, and enhancement of personnel safety.

As some nurses did not report the violence and lack of care for the victims following aggressive incidents, managers should encourage them to report violence, and follow-up it. Since the higher incidence of physical violence experienced by CPR nurses and most of the perpetrators are relatives of patients, it is necessary to take measures to reduce the harm and violence to the nurses. Therefore, our data suggest the need for future studies to move from descriptive to action research and intervention studies to provide preventive and promoting health guidelines in clinical settings.

Conflicts of interest

There are no conflicts of interest.

Authors' contributions

M Khorram contributed with data collection, writing the first draft of the article. M Bagheri Nesami: Advisors of the article. NM contributed data analysis and interpretation results. H Azimi Lolaty designed and supervised the work.

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