

Original Article

Workplace Violence: Effects on Job Performance and Coping Strategies among Physicians

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Abstract

Background & Objective(s): Workplace violence, an occupational hazard in the healthcare setting, can lead to a variety of adverse consequences for its victims, including physical and psychological ones. It can also bring job strain, job dissatisfaction, and job turnover for health workers. Further, it has also been found that workplace violence influences aspects of employee work status, such as job performance.

This study investigated workplace violence, its effects on job performance, and coping strategies among physicians in the city of Tanta, Egypt.

Methods: For this cross-sectional study, 422 physicians were recruited using a random-cluster sampling technique. For every participant, personal and occupational data, coping strategies against workplace violence, and responses to the workplace violence questionnaire and the job performance scale (JPS) were collected by a self-administered questionnaire.

Results: Among the study participants, 56.4% have been exposed to workplace violence, and 79.4% of them have reported that they felt unsafe at work. The majority (85.8%) stated that there were inadequate measures for their protection while working. The respondents' average score on the JPS among physicians exposed to work-related violence was significantly lower, compared to that of non-exposed (22 ± 3.62 and 24.01 ± 3.88 , respectively) ($p = 0.003$). The most commonly adopted strategy for coping with workplace-related violence was telling one's colleagues (60.1%) at an individual level and reporting to the administration (36.1%) at the organizational level.

Conclusion: A large proportion of physicians in Egypt may be exposed to workplace violence. Although many coping strategies can be adopted against workplace violence, this problem still requires a multidisciplinary approach and community support.

Keywords: Workplace violence, Job performance, Coping, Physicians, Egypt.

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INTRODUCTION

Workplace violence (WPV) is defined as a major event or an accumulation of small, recurrent smaller incidents that can cause harm to the worker.⁽¹⁾ For healthcare workers, violence is a real occupational hazard.⁽²⁾ The primary goal of any healthcare system is to promote health in an entire community, granting equal opportunity to all.⁽³⁾ Patients need a stable, calm environment where they can be supported and feel safe. Unfortunately, the incidence of violence is rising in healthcare settings.⁽⁴⁾ Doctors play a key role in the healthcare, so it is essential to study the prevalence and forms of their exposure to WPV.⁽⁵⁾

WPV is an important emerging public health issue that has attracted community concern. Numerous studies

have found that healthcare workers are more at risk of becoming victims of violence and aggression than members of other professions.⁽⁶⁻⁸⁾ The World Health Organization (WHO) classifies WPV into two main forms; physical violence (such as beating, kicking, shooting, biting, pinching, slapping, pushing, and stabbing) and psychological violence (such as verbal abuse, harassment, and threats).⁽⁹⁾ The prevalence of WPV toward healthcare professionals ranges from 50% to 88% in different study settings.⁽¹⁰⁻¹²⁾

WPV impacts healthcare workers' job performance and their ability to make professional decisions and carry out their daily tasks. Additionally, it reduces their commitment to proper clinical practices and affects their self-efficacy in their professional abilities, leading as a result to an increased rate of medical errors⁽¹³⁾; in severe

cases, malpractice may result. Consequently, it is possible that an encounter with WPV may lead to a drop in the quality and the efficiency of the healthcare system as a whole.⁽¹⁴⁾

Workers who receive violence-prevention training may be better able to cope with violent events, and their untrained colleagues may respond more passively. Training may also improve workers' problem-solving and coordination skills, helping them predict risk factors and increase their skill in avoiding situations that have a risk of violence.⁽¹⁵⁾

This study investigated the work environment in relation to violence and its effects on the job performance and coping strategies adopted by physicians working in different settings in health care in the city of Tanta, Egypt.

METHODS

Study design, setting and population

A cross-sectional study was conducted at some hospitals in Tanta city, Delta Region, Egypt. All hospitals that provide clinical services located in Tanta eligible to be included in the study. Three main types of hospitals provide clinical services in Tanta, namely, university, governmental, and private hospitals. The study was conducted in January and February 2018. Physicians with any specialty were invited to participate in the study. The administrations of the target hospitals were contacted to enable data collection data from different departments during different work shifts to make the sample more representative of the intended study population. Random-cluster sampling was used with proportional allocation to recruit the study participants.

A sample size of 384 was calculated to determine the necessary number of participants assuming an expected prevalence of 50%, a confidence level of 95% and a precision of 0.05). To ensure data accuracy, the sample was enlarged to 422 physicians.

Study Tool

All those were contacted and agreed to participate in the study were asked to fill a predesigned questionnaire and return their response after completing it. A definition of WPV was included at the start of the questionnaire to ensure proper comprehension of the term. A self-administered, semi-structured questionnaire sheet was completed. The questionnaire was developed by the researchers was subjected to review by five experts, and the reliability was tested using Cronbach's α , with a correlation coefficient of 0.80). The study questionnaire collected data on the following domains:

i) Socio-demographic and occupational data

Age, gender, specialty, type of hospital, professional grade, years of experience, safety feeling at work, and availability of workplace protective measures against violence.

ii) WPV

The WPV instrument, developed by WHO, was used to assess the exposure to all forms of violence while working in the hospital over the previous 12 months.⁽¹⁶⁾ The

questionnaire provided data on the two main types of violence, namely, physical violence (e.g., beating, kicking, pushing biting, and pinching) and psychological violence (e.g., verbal abuse, bullying, harassment, and threats).

iii) Job Performance

Job performance was assessed with The Health and Work Performance Questionnaire, developed by the WHO.⁽¹⁷⁾ It is a seven-item scale for self-assessment of job performance. The questionnaire inquires about the self-perceived job performance in the past 4 weeks. It included questions like "How often was your performance lower than most workers on your job?" and "How often did you find yourself not working as carefully as you should?" The participants were asked to rate their responses on a 5-point Likert scale ranging from 1 (all of the time) to 5 (none of the time). One of the scale items was had a reversed score, namely, "How often was your performance higher than most workers on your job?" The total score ranged from 7 to 35, where the higher the total score, the more the degree of job performance. Scores from 7 to 22 denote poor work performance, and scores of 23 to 35 denote good work performance.

iv) Coping with WPV questions

Participants were asked about possible strategies needed to prevent and/or control WPV. Yes or no responses were used to different suggested coping strategies on three different levels (individual, institutional, and social strategies).

Statistical Analysis

The questionnaire sheets were checked for completeness of the required data, and then the responses were coded. The statistical package for social sciences (SPSS) software (version 20.0, IBM SPSS Statistics for Mac, released 2011; IBM Corp., Armonk, New York, USA), was used for data analysis. Qualitative variables were presented as number and percent and quantitative ones were presented as means \pm SD. Tests of significance were adopted as follows; the X^2 -test, for testing association between qualitative variables, and Student's *t*-test for comparing the means of quantitative variables. The threshold of significance was set at $p < 0.05$.

Ethical Considerations

This study was carried out following the international research guidelines and principles of the Helsinki Declaration. Administrative permissions from the managers of the hospitals were obtained prior to the initiation of the study. The research methods were approved by the scientific committee of the Community Medicine Department, Faculty of Medicine, Tanta University. The aim of the study was explained to all participating physicians, and informed oral consent was obtained from each. The confidentiality of the collected data from the questionnaire sheets was guaranteed. Names of the participants and the affiliated hospitals were kept confidential as a precondition to participation in the study. A simplified definition of WPV was given to all

participants before they began to complete the questionnaire.

RESULTS

Of the 422 physicians who participated in this study, 44.5% were male, and 53.6% were aged below 30 years. The participants worked at a university (37.9%), in government (37.0%), or at one of the private (25.1%) hospitals of Tanta City. The specialties of more than half of the physicians (57.8%) were surgical. Nearly half of the participants (53.8%) reported less than 5 years of experience in their current position. More than three-quarters of the physicians in this study (79.4%) stated that they did not feel safe during work. The majority of the participants (85.8%) reported that protective measures against violence were not available. Additionally, many

physicians (78.4%) reported that they had not received any training courses to prevent WPV. Among the study participants, 238 (56.4%) physicians reported that they were exposed to WPV. WPV was not significantly associated with gender ($p= 0.06$). For instance, younger physicians, aged below 30 years, were significantly associated with more exposure to WPV ($p= 0.012$). Additionally, having less than 5 years of experience was significantly associated with more exposure to WPV ($p= 0.010$). Working in public hospitals was significantly more associated with violence than working in private hospitals ($p= 0.0001$). Likewise, medical specialties faced significantly lower exposure to WPV than surgical ones ($p= 0.012$). The absence of training courses for violence prevention made the physicians more prone to WPV ($p= 0.000$) (Table 1).

Table 1: Socio-demographic characteristics, occupational factors and perception of safety in relation to exposure to workplace violence among studied physicians in health care facilities, Tanta, Egypt

Variables	Study participants (n = 422)		
	Exposed to violence (n = 238) No. (%)	Unexposed to violence (n = 184) No. (%)	Total (n = 422) No. (%)
Gender			
Male	98 (52.1)	90 (47.9)	188 (100.0)
Female	140 (59.8)	94 (40.2)	234 (100.0)
	$\chi^2=2.514$	$p= 0.113$	
Age group (years)			
<30	138 (59.7)	88 (40.3)	226 (100.0)
30-40	55 (56.1)	43 (43.9)	98 (100.0)
>40	45 (45.9)	53 (54.1)	98 (100.0)
	$\chi^2= 6.378$	$p= 0.012^*$	
Type of hospital			
University	104 (65.0)	56 (35.0)	160 (100.0)
Governmental	95 (60.9)	61 (39.1)	156 (100.0)
Private	39 (36.8)	67 (63.2)	106 (100.0)
	$\chi^2=22.667$	$p= 0.0001^*$	
Specialty			
Medical	125 (51.2)	119 (48.8)	244 (100.0)
Surgical	113 (63.5)	65 (36.5)	178 (100.0)
	$\chi^2= 6.284$	$p= 0.012^*$	
Experience (years)			
<5	139 (61.2)	88 (38.8)	227 (100.0)
5-10	31 (41.3)	44 (58.7)	75 (100.0)
>10	68 (56.7)	52 (43.3)	120 (100.0)
	$\chi^2= 9.083$	$p= 0.010^*$	
Safety feeling during work			
Yes	27 (31.0)	60 (69.0)	87 (100.0)
No	211 (63.0)	124 (37.0)	335 (100.0)
	$\chi^2= 28.670$	$p= 0.000^*$	
Availability of protective measures against violence			
Yes	19 (31.7)	41 (68.3)	60 (100.0)
No	219 (60.5)	143 (39.5)	362 (100.0)
	$\chi^2= 17.397$	$p= 0.0003^*$	
Received violence-prevention training			
Yes	42 (44.0)	49 (56.0)	91 (100.0)
No	196 (59.2)	135 (40.8)	331 (100.0)
	$\chi^2= 4.951$	$p= 0.026^*$	

Physicians' average score on the JPS for those exposed to WPV was significantly lower compared to the average among those not exposed (22 ± 3.62 and 24.01 ± 3.88 , respectively) ($p= 0.0026$). There were other significant differences regarding job performance scale items between

participants exposed to WPV and those who were not exposed ($p < 0.001$) (Table 2). Additionally, there was a significant association between bad work performance of the participants (7-22) and not only actual exposure to violence, but simply feeling unsafe at work (fear of

violence) ($\chi^2 = 26.39$, $p = 0.000$; $\chi^2 = 4.31$, $p = 0.038$, respectively) (Table 3). The study participants were asked about the strategies they had adopted to cope with WPV. At the individual level, nearly two-thirds of them told their colleagues about the violence (60.1%), followed by obtaining family support and preparing self-defense in (40.3% and 32.4%), respectively. Less than one-quarter of

the participants (22.3%), reported that they obtained psychological support. At the level of the organization, only one-third of the participants reported violence exposure at work (36.1%), and only 21.0% asked to change their position. At the social level, reporting to the police was not a commonly chosen coping choices (11.3%) by the physicians who exposed to WPV (Table 4).

Table 2: Job performance scores in relation to exposure to workplace violence among studied physicians in health care facilities, Tanta, Egypt

Job performance parameters	Study participants (n = 422)		
	Exposed to violence scores (n = 238)	Unexposed to violence scores (n = 184)	t-test, p value
	Mean \pm SD	Mean \pm SD	
How often was your performance lower than most workers on your job?	3.84 \pm 0.58	3.96 \pm 0.60	2.076, 0.0385*
How often did you do no work at times when you were supposed to be working?	2.91 \pm 0.51	3.02 \pm 0.59	4.848, 0.0409*
How often did you find yourself not working as carefully as you should?	3.76 \pm 0.65	3.93 \pm 0.61	2.736, 0.0065*
How often was the quality of your work lower than it should have been?	2.84 \pm 0.48	2.96 \pm 0.56	2.367, 0.0184*
How often did you not concentrate enough on your work?	2.51 \pm 0.44	2.82 \pm 0.58	6.244, 0.0001*
How often did health problems limit the kind or amount of work you could do?	3.27 \pm 0.53	3.48 \pm 0.57	3.905, 0.0001*
How often was your performance higher than most workers on your job? (Reversed)	3.67 \pm 0.57	3.84 \pm 0.56	3.062, 0.0023*
Total score (Range = 7–35)	22.90 \pm 3.62	24.01 \pm 3.88	3.027, 0.0026*

(*) Significant statistical difference

Table 3: The relationship between work performance, exposure, and perceived fear of exposure to violence among physicians in health care facilities, Tanta, Egypt

Exposure and fear of exposure to violence	Bad work performance No. (%) 245 (58.1)	Good work performance No. (%) 177 (41.9)	Total No. (%) 422 (100)	χ^2 , p value
Safety feelings during work (fear of violence)	42 (48.3)	45 (51.7)	87 (100.0)	4.31
Yes	203 (60.6)	132 (39.4)	335 (100.0)	0.038*
No				
Exposure to violence	164 (68.9)	74 (31.1)	238 (100.0)	26.39
Yes	81 (44.0)	103 (56.0)	184 (100.0)	0.000*
No				

(*) Statistically significant difference

Table 4: Coping strategies adopted by physicians exposed to workplace violence in health care facilities, Tanta, Egypt

Coping strategies	Exposed to violence (n = 238) No. %	Rank
Individual		
Self-defense	77 (32.4%)	4
Tell a colleague	143 (60.1%)	1
Get family support	96 (40.3%)	2
Get psychological support	53 (22.3%)	6
Organizational		
Violence reporting	86 (36.1%)	3
Ask for job change	50 (21.0%)	7
Ask for compensation	5 (2.1%)	9
Social		
Police reporting	27 (11.3%)	8
Reports by social media	63 (26.5%)	5

DISCUSSION

WPV is a worldwide problem and is an important hazard to the physical and mental wellbeing of healthcare workers. It also has detrimental consequences for their work performance.⁽¹⁸⁾ In this study, 56.4% of physicians reported that they had been exposed to WPV. This rate is below that found by a previous study of physicians by Duan et al. 2019, at 66.19%, and nearly the same as that in another study done in China by Sun et al. 2017.⁽¹⁹⁾ This variety can be attributed to cultural variation across dissimilar nations and the different measurement scales used in different studies.

In this study, WPV was not significantly associated with gender. This was in agreement with the work of Berlanda et al. 2019, who stated that "There were no

significant gender differences in terms of exposure to patient and visitor violence.”⁽²⁰⁾ However, a report from an Italian hospital indicated that episodes of violence occurred more frequently for male medical doctors than for females. This difference, however, could be explained by the fact that males tend to report exposure to violence more easily than females.⁽²¹⁾

It was found that younger physicians aged below 30 years were at a significantly higher risk for WPV compared to older ages. Also, those with less than 5 years of experience were at significantly higher risk of exposure to violence than those with more experience. This matches the results given by Berlanda et al. 2019 that show that older and more experienced health care workers were exposed to less violence. This gives the impression that older, more skilled healthcare workers become better able to deal with patients and visitors and thus to reduce conflict.⁽²⁰⁾

Working in governmental hospitals was significantly associated with exposure to violence relative to private hospitals. This was in agreement with a study performed by Lin, which showed that more than 70% of health workers in general hospitals in Shenzhen, China, experienced WPV. One possible explanation for this observation is the smaller number of outpatient consultations at private hospitals compared to governmental ones. Physician overload and long waiting times found at governmental hospitals may cause increased WPV in these hospitals.⁽²²⁾

One factor behind the exposure to WPV is the absence of training courses for violence prevention. Physicians who lack training are more likely to be exposed to WPV. This is supported by the Occupational Safety and Health Administrative (OSHA) guidelines for preventing WPV, published in 2015, which state that “Lack of organizational policies and training for security and staff to recognize and deescalate hostile and assaultive behaviors from patients, clients, visitors, or staff, is one of the factors associated with violence.”⁽²³⁾

This study showed that the average score of the JPS among physicians exposed to workplace-related violence was significantly lower than that of those who were not exposed. Additionally, significant differences were seen in JPS items between participants exposed to WPV and those who were not. This is in line with a study from China, performed by Lin et al. in 2015,⁽²⁴⁾ and another from the US, performed by Schat and Frone in 2011,⁽²⁵⁾ who showed that health workers who experienced WPV had lower scores for all parameters of job performance relative to those who did not experience violence, which indicates that job performance is impaired by WPV exposure.

It was shown that community health workers who experienced WPV reported a lower score on each dimension of job performance than those who did not, which suggests that job performance is negatively affected by WPV. This finding is consistent with a study from the US, performed by Schat and Frone in 2011.⁽²⁵⁾ This study

showed that there was a significant association between bad work performance among the participants not only as a result of actual exposure to violence but also unsafe feelings during work, with both those who were exposed to violence and those who were not. A study performed among psychiatric nurses and another among drivers and conductors showed that work-related violence was positively associated with emotional injury.^(26,27) Further, Gates et al. in 2011 reported that WPV is a significant stressor for community healthcare workers. This stress might produce the emotions of anger, anxiety, fear, and depression, any or all of which could lead to a negative impact on job performance.⁽²⁸⁾

In this study, the largest group of participants received support from their colleagues, followed by their family, and pursuing self-defense. Only a small proportion of the participants reported that they sought psychological help. A minority reported WPV to the organization and asked to move jobs. Reporting to the police was the last choice of physicians who participated in this study and had coped with WPV. Similar findings were found by another study conducted by Zhao et al. in 2015,⁽²⁹⁾ where it was found that health care workers who were exposed to physical violence reported pursuing self-defense (66.7%) and talking with co-workers (31.5%) as forms of individual support. The organizational support system included assistance or programs that the organization made available to healthcare workers. The highest percentage of respondents (29.4%), received organizational support by reporting WPV promptly (i.e., reporting it to their manager), followed by financial compensation (3.6%). Regarding exposure to psychological violence, the highest percentage of participants (43.6%) received individual support by talking with their co-workers, followed by receiving their family’s support (27.5%).⁽²⁹⁾ A previous study found that healthcare workers require administrative and community provisions.⁽³⁰⁾ Consequently, it is not hard to recognize healthcare workers’ need for further support from the organization and society. If physicians do not receive adequate support after exposure to violence, deterioration in their work performance and other hostile consequences could follow.⁽²⁹⁾

To prevent and reduce WPV, the OSHA updated guidelines (OSHA 2015) recommend education, training, and organizational support to increase safety and security.^(30,31)

CONCLUSION AND RECOMMENDATIONS

Many physicians are exposed to workplace-related violence. Such exposure to is related to certain occupational factors such as years of experience, specialty, and having received violence-prevention training. Workplace-related violence negatively affects all job performance parameters. Reporting violence is not a priority among exposed physicians. The health care system should establish comprehensive WPV prevention and control programs to develop regulations and legislation to encounter this problem.

CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

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REFERENCES

1. International Labour Office, International Council of Nurses, World Health Organization, & Public Services International. Framework guidelines for addressing workplace violence in the health sector. Geneva: International Labour Office. 2002.
2. Bernaldo-De-Quiros M, Piccini AT, Gomez MM, Cerdeira JC. Psychological consequences of aggression in prehospital emergency care: Cross sectional survey. *Int J Nurs Stud.* 2015;52:260–70.
3. Goldblatt H, Freund A, Drach-Zahavy A, Enosh G, Peterfreund I, Edlis N. Providing health care in the shadow of violence: Does emotion regulation vary among hospital workers from different professions? *J Interpers Violence.* 2020;35(9-10):1908-33.
4. Al Ubaidi B. Workplace violence in healthcare: An emerging occupational hazard. *Bahrain Med Bull.* 2018;40:43–5
5. Wu J-C, Tung T-H, Chen PY, Chen Y-L, Lin Y-W, Chen F-L. Determinants of workplace violence against clinical physicians in hospitals. *J Occupat Health.* 2015;57:540–47.
6. Alkorashy HA, Al-Moalad FB. Workplace violence against nursing staff in a Saudi university hospital. *Int Nurs Rev.* 2016;63:226–32.
7. Shi L, Zhang DY, Zhou CY, Yang LB, Sun T, Hao TJ, et al. A cross-sectional study on the prevalence and associated risk factors for workplace violence against Chinese nurses. *BMJ Open.* 2017;7:e013105
8. Khoshknab MF, Oskouie F, Ghazanfari N, Najafi F, Tmmizi Z, Afshani S, et al. The frequency, contributing and preventive factors of harassment towards health professionals in Iran. *Int J Community Based Nurs Midwifery.* 2015;3:156–64.
9. Krug EG, Mercy JA, Dahlberg LL, Zwi AB. The world report on violence and health. *Lancet.* 2002;360(9339):1083–8.
10. Kindly D, Petersen S, Pankhurst D. Perilous work: Nurses' experiences in psychiatric units with high risks of assault. *Arch Psychiat Nurs.* 2005;19:169–75.
11. Luo H, Wu XS. American hospital prevent workplace violence. *Chin J Pract Nurs.* 2003;19:65–6.
12. Margin PJ, Adams J, Sibbritt DW, Joy E, Ireland MC. Experiences of occupational violence in Australian urban general practice: A cross-sectional study of GPs. *J Eval Clin Pract.* 2008;14:336–42.
13. Al-Shiyab AA, Ababneh RI. Consequences of workplace violence behaviors in Jordanian public hospitals. *Employee Relations.* 2018;40:515–28.
14. Wu J-C, Tung T-H, Chen PY, Chen Y-L, Lin Y-W, Chen F-L. Determinants of workplace violence against clinical physicians in hospitals. *J Occup Health.* 2015;57:540–7.
15. Nachreiner NM, Gerberich SG, McGovern PM, Church TR, Hansen HE, Geisser M, et al. Relation between policies and work related assault: Minnesota nurses' study. *Occup Environ Med.* 2005;62:675–81.
16. ILO, ICN, WHO, PSI. Joint programme on workplace violence in the health sector. Geneva, Switzerland: ILO, ICN, WHO, PSI. 2003.
17. Kessler RC, Barber C, Beck A, Berglund P, Cleary PD, McKenas D, et al. The World Health Organization Health and Work Performance Questionnaire (HPQ). *J Occup Environ Med.* 2003;45:156-74.
18. Duan X, Ni X, Shi L, Zhang L, Ye Y, Mu H, et al. The impact of workplace violence on job satisfaction, job burnout, and turnover intention: the mediating role of social support. *Health Qual Life Outcomes.* 2019;17(1):93.
19. Sun T, Gao L, Li F, Shi Y, Xie F, Wang J, et al. Workplace violence, psychological stress, sleep quality and subjective health in Chinese doctors: A large cross-sectional study. *BMJ Open.* 2017;7:e 017182
20. Berlanda S, Pedrazza M, Fraizzoli M, Cordova F. Addressing risks of violence against healthcare staff in emergency departments: The effects of job Satisfaction and attachment style. *Hindawi BioMed Res Int.* 2019 <https://doi.org/10.1155/2019/5430870>.
21. Acquadro MD, Cortese C, Pavanelli P, Fomero G, Gianino M. Gender differences in reporting workplace violence: A qualitative analysis of administrative records of violent episodes experienced by healthcare workers in a large public Italian hospital. *BMJ Open.* 2019;9(11):e031546.
22. Kumar M, Verma M, Das T, Pardeshi G, Kishore J, Padmanandan A. A study of workplace violence experienced by doctors and associated risk factors in a tertiary care hospital of South Delhi, India. *J Clin Diagn Res.* 2016;10:LC06-LC10.
23. Guidelines for preventing of workplace violence for healthcare and social service workers. [Internet]. 2020 [cited 23 September 2020]. Available from: <https://www.osha.gov/Publications/osa3148.pdf>
24. Lin WQ, Wu J, Yuan LX, Zhang SC, Jing MJ, Zhang HS et al. Workplace violence and job performance among community healthcare workers in China: The mediator role of quality of life. *Int J Environ Res Public Health.* 2015;20;12(11):14872-86.
25. Schat A, Frone M. Exposure to psychological aggression at work and job performance: The mediating role of job attitudes and personal health. *Work & Stress.* 2011;25(1):23-40.
26. Zeng JY, An FR, Xiang YT, Qi YK, Ungvari GS, Newhouse R et al. Frequency and risk factors of workplace violence on psychiatric nurses and its impact on their quality of life in China. *Psychiatr Res.* 2013;210:510–14
27. Couto MT, Lawoko S, Svanstrom L. Exposure to workplace violence and quality of life among drivers and conductors in Maputo city, Mozambique. *Int J Occup Environ Health.* 2009;15:299–304.
28. Gates DM, Gillespie GL, Succop P. Violence against nurses and its impact on stress and productivity. *Nurs Econ.* 2011;29: 59–66.
29. Zhao S, Liu H, Ma H, Jiao M, Li Y, Hao Y et al. Coping with workplace violence in healthcare settings: Social support and strategies. *Int J Environ Res Public Health.* 2015;13;12(11):14429-44.
30. Schat A, Kelloway E. Reducing the adverse consequences of workplace aggression and violence: The buffering effects of organizational support. *J Occup Health Psychol.* 2003;8(2):110-122.
31. Morken T, Johansen IH, Alsaker K. Dealing with workplace violence in emergency primary health care: A focus group study. *BMC Fam Pract.* 2015;16:51.