

GENERAL SELF-EFFICACY AND THE EFFECT OF HOSPITAL WORKPLACE VIOLENCE ON DOCTORS' STRESS AND JOB SATISFACTION IN CHINA

YONGCHENG YAO¹, WEI WANG¹, FAXUAN WANG², and WU YAO¹

¹ School of Public Health, Zhengzhou University, Zhengzhou, China
Department of Occupational Health

² Ningxia Medical University, Yinchuan, Ningxia, China
Department of Occupational and Environmental Medicine

Abstract

Objectives: This study aims at exploring associations of general self-efficacy (GSE), workplace violence and doctors' work-related attitudes. **Material and Methods:** In this study a cross-sectional survey design was applied. Questionnaires were administrated to 758 doctors working in 9 hospitals of Zhengzhou, Henan province, China, between June and October 2010. General information on age, gender, and years of working was collected, and the doctors' experience and witnessing workplace violence, job satisfaction, job initiative, occupational stress as well as GSE were measured. General linear regression analysis was performed in association analyses. **Results:** Both experiencing and witnessing workplace violence were significantly positively correlated with the level of occupational stress but significantly negatively correlated with job satisfaction, job initiative, and GSE. General self-efficacy significantly modified relationships between both experiencing and witnessing workplace violence with occupational stress ($\beta = 0.49$ for experiencing violence; $\beta = 0.43$ for witnessing violence; $p < 0.001$) and with job satisfaction ($\beta = -0.35$ and -0.34 , respectively; $p < 0.05$). However, it did not modify the relationships between both experiencing and witnessing workplace violence with job initiative ($p > 0.05$). The levels of occupational stress declined significantly with the increase of GSE, while job satisfaction increased significantly along with its increase. The effects of GSE on occupational stress and job satisfaction weakened as the frequency of violence increased. **Conclusions:** The findings suggest that GSE can modify effects of workplace violence on health care workers' stress and job satisfaction. Enhancing GSE in combination with stress reduction may lead to facilitating health care workers' recovery from workplace violence, and thereby improving their work-related attitudes.

Key words:

Job satisfaction, Stress, Workplace violence, General self-efficacy, Job initiative

INTRODUCTION

Workplace violence has become a worldwide concern – a health hazard problem of both employers as well as employees [1]. The concept refers to any physical assault, threatening or intimidating behavior, or verbal abuse occurring at the work site. Victims of workplace violence can be either employees, clients, customers or visitors, and

they are different depending on the industry. In hospitals, for example, these are frequently the doctors and nurses who are victims. There are 2 types of workplace violence: physical and psychological violence. Physical violence is the intentional use of physical force, such as hitting, kicking, beating, pushing and biting, in a way that injures someone. Psychological violence refers to any behavior,

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Corresponding author: W. Yao, Department of Occupational Health, School of Public Health, Zhengzhou University, Kexue Road 100 of Zhengzhou, China (e-mail: yaowu@zzu.edu.cn).

including verbal abuses, threats or verbal sexual harassment, aiming to cause or likely to cause mental or emotional suffering within the abused person [2]. Verbal violence-caused hurt can be as severe as that induced by physical violence [3,4]. Several studies show that of all industries health care workers constitute one of the groups of the most susceptible to workplace violence individuals [5–9].

In the past decade, the number of hospital workplace violence in China has extremely increased due to the tense relationships between patients and doctors. Based on a survey conducted by the Institute of Hospital Management of China, 73.3% of the 270 investigated Chinese hospitals experienced various kinds of workplace violence [10]. Not only does the workplace violence in hospitals affect the health of medical workers [11–13], but also the quality of health services – through negatively influencing the morale and self-confidence of health care staff [14,15]. Moreover, workplace violence can lead to a decline in work efficiency and job satisfaction [11], higher turnover intention, and eventually brain drain [16,17], which in turn bring about a negative effect on work-related attitudes.

According to the interactional theory, stress derives from adaption of individuals to surrounding environments, particularly for those who have difficulties in self-evaluating or who lack coping resources [18]. The intensity and/or pattern of response to stress is individual-dependent, and is affected by many factors, which include: age, gender, medical history, ethnicity, genetic and psycho-physiological factors, as well as socio-economic status. Different people may have distinct personal perception and evaluation even of the same levels of stress, and thereby react in a different way. General self-efficacy (GSE) is defined as the level of individuals' confidence in finishing tasks in different situations [19].

Several studies show that GSE can effectively neutralize adverse effects caused by stress [20–22]. People with high GSE tend to perceive less stress and make more

effective use of coping resources to challenge greater stress [23,24]. Given that workplace violence can result in significant psychological consequences such as depression in communities [25–27], enhancing GSE may be helpful in victims' psychological recovery, adjusting them to workplace violence. Thus, we put forward a hypothesis that GSE can alter relationship between workplace violence and work-related attitudes, such as occupational stress, job satisfaction and job initiative. To test this hypothesis, we conducted a cross-sectional study to investigate the frequency of workplace violence, its influence on work-related attitudes and the effect of GSE among health care workers in Henan, province of China.

MATERIAL AND METHODS

Study population

The study included doctors from 9 municipal hospitals of Zhengzhou, Henan province, China. Each hospital provided trained interviewers from the Medical Affairs Department. Of the 818 distributed questionnaires, 758 (92.7%) were recollected and considered valid. Among the 758 participants, 301 were male doctors and 457 female doctors. The age of the participants was on average 34.4 years with the standard deviation of 8.75 years; the average period of their working experience was 11.16 years with the variation of 9.50 years (Table 1).

Frequency of experiencing or witnessing workplace violence

Frequency of experiencing and witnessing workplace violence within the past 12 months was measured for each participant by the use of the Workplace Violence Scale developed by Wang Peixi [28]. The scale consists of 2 dimensions, experience and witnessing workplace violence, and 10 items. Each item is on a 4-point (0–3) rating scale: 0 for no experience or witnessing, 1 for experiencing or witnessing once, 2 for 2–3 times, and 3 for 4 times

Table 1. Participants' characteristics, workplace violence, general self-efficacy (GSE) and job-related attitude

Variable	Characteristic			
	n	%	M±SD	range
Sex				
male	301	39.7		
female	457	60.3		
EWV				
zero	279	36.8	0	
low	466	61.5	2.87±2.34	
high	13	1.7	13.15±1.52	
WWV				
zero	321	42.3	0	
low	398	52.5	4.35±2.82	
high	39	5.2	13.15±1.66	
Age (years)			34.46±8.75	20–81
Seniority (years)			11.16±9.50	1–60
Occupational stress			49.80±13.79	20–96
Job satisfaction			24.15±6.29	8–40
Job initiative			15.19±3.01	5–20
GSE			26.05±6.22	10–40

EWV – experiencing workplace violence; WWV – witnessing workplace violence.
M – mean; SD – standard deviation.

or above. The score range for each dimension is between 0 and 15. The frequency of workplace violence was classified into 3 categories based on the overall scores, as follows: zero (0 point), low (1–10 points) and high (11–15 points). The test-retest reliability, split-half reliability and internal consistency reliability of this scale were 0.834, 0.896, and 0.92, respectively. In this study, the consistency reliability reached 0.907.

Job satisfaction and job initiative

We used the Quality of Working Life 7–32 Scale (QWL7–32 Scale), which was developed by the West China School of Public Health of Sichuan University, to measure job satisfaction and job initiative [29]. The Job Satisfaction Scale consists of 8 items and Job Initiative Scale of 4 items; with each item on a 5-point rating scale. Higher scores

indicate higher satisfaction and initiative. In our study, the consistency reliability of the scale amounted to 0.885.

Measurement of occupational stress

In order to assess the level of stress we adopted the Occupational Stress Inventory-Revised (OSI-R) [30]. It consists of 20 items, 10 for each psychological and physical stress. It is on a 5-point rating scale. Higher scores of stress mean higher level of stress. Its consistency reliability in this study was 0.919.

Measurement of GSE

The Schwarzer's General Self-efficacy Scale (Chinese version) [19] was applied to measure GSE. It consists of 10 items on a 4-point rating scale. Higher scores suggest higher level of GSE. Homogeneity reliability scored 0.911.

Data analysis

Data were recorded and analyzed using Epidata 3.1 and SPSS (version 15 for Windows). In order to eliminate the negative effect of multi-collinearity between the dependent variables, a decentralized data strategy was adopted. Linear regression analysis was applied in constructing different models. As experiencing and witnessing workplace violence were significantly correlated, they were both added to the regression equation to estimate the contribution of each, which was a general approach in stress studies [31]. ModGraph [32] was used to construct graphs for the interactions between GSE and workplace violence in occupational stress and job satisfaction.

RESULTS

Frequency of experiencing or witnessing workplace violence, and work-related attitude levels

Out of all the study participants, over a half of them experienced or witnessed workplace violence within the past 12 months before the interview (Table 1). Of all the participants, only 36.8% did not experience workplace violence (EWV), and 42.3% did not witness workplace violence (WWV). There were only 1.7% and 5.2% of the participants experiencing or witnessing high intensity of workplace violence, respectively. Occupational stress of the health care workers was relatively high, averaging 49.8 with the range between 20 and 96.

Job satisfaction of the participants was not high, averaging 24.15 with the range between 8 and 40, and their job initiative was still relatively fine, averaging 15.19 with the range between 5 and 20. General self-efficacy averaged 26.05 with the range between 10 and 40.

Correlations among main variables

The 6 main variables had significant correlations (Table 2). There was a significantly positive and strong correlation between experiencing and witnessing workplace

violence ($r = 0.76$, $p < 0.01$). Both experiencing and witnessing workplace violence were significantly positively correlated with the level of occupational stress ($r = 0.33$ and 0.34 , respectively, $p < 0.01$), but significantly negatively correlated with job satisfaction, job initiative, and general self-efficacy ($r = -0.32$, -0.30 , -0.20 , -0.36 , -0.30 , -0.24 , respectively, $p < 0.01$ for all comparisons). We also found significantly negative but weak correlations between working period and both experiencing and witnessing workplace violence ($r = -0.09$ and -0.08 , respectively).

Relationship between experiencing and witnessing workplace violence and work-related attitudes and behaviors

To investigate the effect of workplace violence on occupational stress, job satisfaction and job initiative, multivariate regression analyses were performed, in which the potential confounding factors were also included. The regression analysis (model 2) showed that both experiencing and witnessing workplace violence were significantly positively associated with the level of occupational stress ($\beta = 0.15$ and 0.15 , respectively, $p < 0.01$) and significantly negatively correlated with job satisfaction ($\beta = -0.10$ and -0.21 , respectively, $p < 0.05$ for both comparisons) (Table 3). Experiencing workplace violence was significantly negatively correlated with job initiative ($\beta = -0.15$, $p < 0.01$) while witnessing workplace violence was negatively but not significantly correlated with it (Table 3).

Interactions between GSE and workplace violence

Multivariate regression analyses (models 3 and 4) also showed that GSE had significant interactions with effect of both experiencing and witnessing workplace violence on occupational stress ($\beta = 0.49$ and $\beta = 0.43$, respectively, $p < 0.001$; $\Delta R^2 = 0.015$ and $\Delta R^2 = 0.011$, respectively, $p < 0.001$) (Table 3) and job satisfaction ($\beta = -0.35$ and -0.34 , $p < 0.05$ for both comparisons; $\Delta R^2 = 0.008$ and

Table 2. Pearson correlations of the variables (N = 758)

Variable	Pearson correlations							
	1	2	3	4	5	6	7	8
1. EWV	1.00							
2. WWV	0.76**	1.00						
3. Occupational stress	0.33**	0.34**	1.00					
4. Job satisfaction	-0.32**	-0.36**	-0.56**	1.00				
5. Job initiative	-0.30**	-0.30**	-0.56**	0.51**	1.00			
6. GSE	-0.20**	-0.24**	-0.38**	0.34**	0.39**	1.00		
7. Sex	-0.15**	-0.13**	-0.02	0.04	0.05	-0.13**	1.00	
8. Age (years)	-0.05	-0.05	-0.07	0.08*	0.12**	0.09*	-0.06	1.00
9. Working period (years)	-0.09*	-0.08*	-0.08*	0.09*	0.14**	0.10**	-0.03	0.97**

* p < 0.05.

** p < 0.01. Sex is coded as follows: male – 1, female – 2.

Other abbreviations as in Table 1.

Table 3. Effect of general self-efficacy (GSE) and workplace violence on occupational stress, job satisfaction and initiatives in multivariate regression analyses

Dependent variable	Model 1		Model 2		Model 3		Model 4	
	β	p	β	p	β	p	β	p
Occupational stress								
age	0.140	> 0.050	-0.020	> 0.050	-0.020	> 0.050	-0.020	> 0.050
sex	-0.020	> 0.050	-0.020	> 0.050	-0.010	> 0.050	-0.010	> 0.050
seniority (years)	-0.210	> 0.050	-0.010	> 0.050	-0.010	> 0.050	-0.010	> 0.050
EWV			0.150	0.003	-0.340	0.014	0.170	0.001
WWV			0.150	0.004	0.160	0.002	-0.300	0.038
GSE			-0.320	< 0.001	-0.410	< 0.001	-0.400	< 0.001
EWV×GSE					0.490	< 0.001		
WWV×GSE							0.430	0.001
adjusted R ²	0.004		0.215		0.229		0.225	
ΔR^2	0.008	0.104	0.214	< 0.001	0.015	< 0.001	0.011	0.001
Job satisfaction								
age	-0.120	> 0.050	0.040	> 0.050	0.040	> 0.05	0.040	> 0.050
sex	0.040	> 0.050	0.040	> 0.050	0.030	> 0.05	0.030	> 0.050
seniority (years)	0.210	> 0.050	0.010	> 0.050	0.000	> 0.05	0.000	> 0.050
EWV			-0.100	0.042	0.250	> 0.05	-0.120	0.017
WWV			-0.210	< 0.001	-0.220	< 0.001	0.140	> 0.050
GSE			0.270	< 0.001	0.330	< 0.001	0.330	< 0.001

Table 3. Effect of general self-efficacy (GSE) and workplace violence on occupational stress, job satisfaction and initiatives in multivariate regression analyses – cont.

Dependent variable	Model 1		Model 2		Model 3		Model 4	
	β	p	β	p	β	p	β	p
EWV×GSE					-0.350	0.007		
WWV×GSE							-0.340	0.012
adjusted R ²	0.007		0.196		0.203		0.202	
ΔR^2	0.011	0.037	0.191	< 0.001	0.008	0.007	0.007	0.012
Job initiative								
age	-0.290	0.042	-0.160	> 0.050	-0.150	> 0.05	-0.160	> 0.050
sex	0.050	> 0.050	0.060	> 0.050	0.060	> 0.05	0.060	> 0.050
seniority (years)	0.420	0.003	0.240	> 0.050	0.240	> 0.05	0.240	> 0.050
EWV			-0.150	0.003	0.080	> 0.05	-0.160	0.002
WWV			-0.090	> 0.050	-0.090	> 0.05	0.130	> 0.050
GSE			0.340	< 0.001	0.380	< 0.001	0.380	< 0.001
EWV×GSE					-0.230	> 0.05		
WWV×GSE							-0.210	> 0.050
adjusted R ²	0.025		0.218		0.220		0.219	
ΔR^2	0.029	< 0.001	0.195	< 0.001	0.003	> 0.05	0.002	> 0.050

Model 1 – regression analysis for the variables (age, sex, working period).
 Model 2 – regression analysis for the variables (age, sex, working period, EWV, WWV, GSE).
 Model 3 – regression analysis for the variables (age, sex, working period, EWV, WWV, GSE, EWV×GSE).
 Model 4 – regression analysis for the variables (age, sex, working period, EWV, WWV, GSE, WWV×GSE).
 R²– R squared; ΔR^2 – R squared change; β – standardized coefficient.
 Other abbreviations as in Table 1.

$\Delta R^2 = 0.007$, $p < 0.05$ for both comparisons), but not on job initiative ($\beta = -0.23$ and -0.21 , $p > 0.05$).

The tendencies of GSE interplaying with the effect of workplace violence on both occupational stress and job satisfaction are shown in Figures 1–4, which were constructed using ModGraph [32] and following recommendation by Dawson and Richter [33]. To create the graphs, we defined the individuals with GSE less than 19.83 (mean (M) ± standard deviation (SD)) as low GSE, and those with GSE greater than 32.22 (M±SD) as high GSE. Individuals with low GSE seemed to have similar occupational stress when they experienced workplace violence regardless of the violence intensity, while those with high GSE had

relatively lower occupational stress than those with low GSE. The levels of occupational stress significantly increased along with the intensity of violence for those

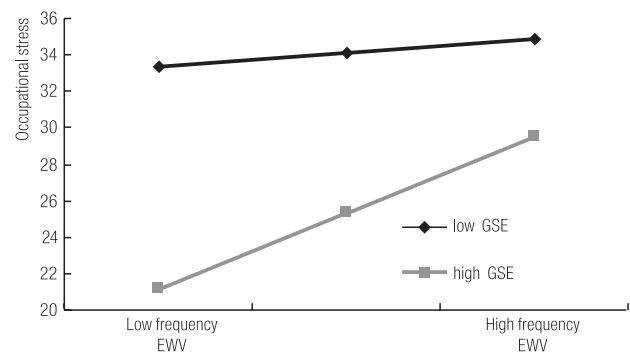


Fig. 1. Interaction between general self-efficacy (GSE) and experiencing workplace violence (EWV) and stress

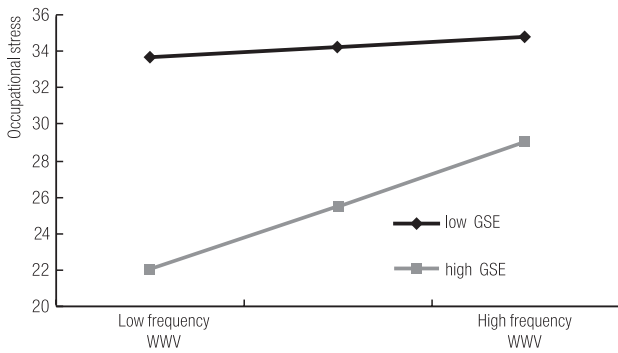


Fig. 2. Interaction between general self-efficacy (GSE) and witnessing workplace violence (WWV) and stress

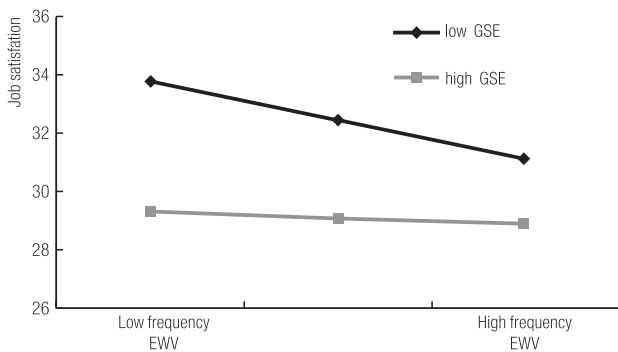


Fig. 3. Interaction between general self-efficacy (GSE) and experiencing workplace violence (EWV) and job satisfaction

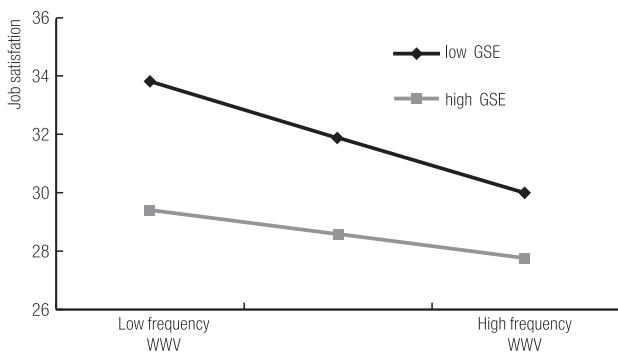


Fig. 4. Interaction between general self-efficacy (GSE) and witnessing workplace violence (WWV) and job satisfaction

with high GSE (Figure 1 and 2). The individuals with high GSE had an overall higher job satisfaction than those with low GSE (Figure 3 and 4). However, when the individuals with high GSE experienced high frequency of violence the decline was much faster.

DISCUSSION

In this study, we demonstrated the relationships between workplace violence and work-related attitudes and behaviors, and the effects of GSE modifying these associations. We found that experiencing and witnessing workplace violence can significantly increase occupational stress of health care workers, and simultaneously decrease their job satisfaction. In contrast, we found that job initiatives were negatively associated only with experiencing workplace violence but not with witnessing it.

These findings are consistent with the previous study of Wang’s [34], who reports that experiencing and witnessing workplace violence negatively affect work-related attitudes and behaviors. Not only can experiencing workplace violence cause physical injuries, such as bruises or fracture [35], but it can also lead to psychological trauma, such as anger, fright, depression, anxiety and insomnia [25–27,36]. Both physical and psychological adversity, in turn, lead to a decline in job satisfaction and initiative. Interestingly, we did not find a significant correlation between witnessing workplace violence and job initiative, suggesting that witnessing workplace violence does not cause direct physical injuries to the witness as it does to the individuals who experience violence. Another possibility is, that it happens so due to the traditional belief in China “it is none of my business”.

In our study, GSE significantly moderated the relationships between workplace violence and the levels of both, occupational stress and job satisfaction. We found that when the frequency of workplace violence switched from low to high, the involved health care workers with high GSE were affected more obviously than those with low GSE. Job satisfaction of the individuals with high GSE declined distinctly and the level of occupational stress increased obviously. However, the individuals with high GSE suffered less occupational stress and had higher job satisfaction than those with low GSE regardless of the frequency of exposure. Our findings suggest that GSE could neutralize workplace violence-induced occupational stress and

job dissatisfaction. General self-efficacy can affect human behavior through different ways, such as coping strategies, motivation and response pattern [37]. Stumpf [38] found that individuals with high GSE can help themselves to release and neutralize stress and to keep healthy by adopting positive problem-oriented coping strategies, while those with low GSE prefer negative, emotion-oriented coping strategies. Several other studies [21,22,39] also report that GSE can reduce the negative effects of occupational stress. Psychological response to violence is individual-specific, differing from one person to another. Some individuals tend to react with fewer negative emotions, while others may experience emotional imbalance, such as anxiety, irritability, insomnia and depression [26,40,41].

We also found that moderating effect of GSE weakened along with the increasing frequency of violence. The possible explanation is that severe or repeated workplace violence can lead to accumulation of physical and psychological problems, which results in over-stress and job frustration, thus leading to an increase in occupational stress and a decline in job satisfaction in those with high GSE. In contrast, among those with low GSE, the response is much stronger even at a low intensity of violence, suffering more than those with high GSE. The difference in the levels of occupational stress and job satisfaction between high and low GSE suggests that GSE can effectively reduce the negative influence of workplace violence on the doctors' job satisfaction. Generally, health care workers with high GSE can adapt themselves to workplace violence by working harder and bearing heavier psychological burden in order to maintain a high level of initiative. However, with the increasing frequency of workplace violence, accumulated physical and psychological harm may eventually overwhelm their capacity to bear, thereby leading to large alterations of stress and job satisfaction, and showing a faster increase in stress and a faster decrease in job satisfaction in those with high GSE [42].

We did not report any evidence on GSE having modifying effect on the relationship between violence and job initiative.

It is still unclear why workplace violence can affect job satisfaction but not job initiative in Chinese hospitals. A possible explanation may be culture and/or cognitive process. It has been reported that culture can significantly affect correlations among GSE, job autonomy and occupational stress; e.g., in American employees, high GSE can buffer against low job autonomy in the presence of occupational stress, while in Chinese employees with low GSE, job initiative is positively associated with occupational stress [43]. The other possible explanation may be the special nature of the professional occupation of doctors, who have to take care of their clients seriously and try to release the patients' pain once they face their patients, no matter whether they have just experienced workplace violence or not.

In this study, we also found significantly negative correlations between both, gender and working period and workplace violence frequency, suggesting male and junior doctors are more susceptible to workplace violence. One of the possible explanations is that the service quality and experience of junior doctors, particularly those freshly graduated from medical school, is relatively lower than those of senior doctors, and that female doctors are relatively more easy-going. Another possibility is that male doctors are frequently employed in the psychiatric or emergency departments, where the workplace violence occurs more frequently than during work in other departments.

Our study has some limitations. We adopted a self-report method, which may cause a cognitive bias. However, it has been reported that this bias does not weaken interaction effects [44,45]. Thus, our results of the interactions between GSE and workplace violence in work-related attitudes still have consolidated bases to stand on, shedding some light on the workplace violence management. Although workplace violence should be prohibited and faced with zero-tolerance, measures should also be taken to prevent and reduce its frequency. In China, there is still a gap as far as law prohibiting workplace violence is concerned. Within the past year before the interview,

more than a half of doctors in China either experienced or witnessed workplace violence, which is much higher than the rate of 43% workplace violence in Italian nurses during their lifetime activity in a clinical setting [46]. Therefore, it is urgent to introduce a law to improve medical environment and prevent workplace violence. In addition, medical staff should be trained when and how to seek legal protection if workplace violence occurs. Psychological aid should be also administrated to the involved health care workers once workplace violence occurs.

CONCLUSION

In summary, we found that experiencing and witnessing workplace violence is negatively associated with work-related attitudes and behaviors. GSE can effectively modify the negative effects of workplace violence on the doctors' stress and job satisfaction. To reduce the harm, particularly psychological hurt caused by workplace violence, a potential approach assuming that hospital managers take every means to increase GSE and enhance self-adaptation to workplace violence seems necessary. Since it may not be enough to raise GSE only, combined strategies (e.g., GSE enhancement and stress reduction) should be applied. Importantly, the policy makers in China should develop a series of regulations. Also education should be implemented for the workers to prevent the occurrence of workplace violence. Further intervention studies are warranted to investigate what exact measures can efficiently prevent workplace violence, thereby improving health and well-being in Chinese hospitals.

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