Original Article

Workplace Violence as a Predictor of Work-Related Stress among Doctors

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Abstract

Introduction: Workplace violence (WPV) toward health-care workers is increasing. The present study aims to estimate the proportion of resident doctors and interns of a tertiary care hospital who experienced WPV, to find out the perpetrators of WPV, and to ascertain any association between WPV and work-related stress. **Materials and Methods:** This observational, institution-based, cross-sectional study included resident doctors and interns working in six different departments of a tertiary care hospital. Data collection was done using a predesigned, pretested semi-structured self-administered questionnaire adapted and validated from the "WPV in the health sector survey questionnaire" from WHO along with "Perceived occupational stress scale." **Results:** Out of 323 participants, 247 (76.47%) experienced some form of WPV, 138 (42.72%) experienced physical violence and 203 (62.85%) experienced psychological violence. Patient relatives were reported as the only perpetrators of physical violence, while seniors of the study subjects were reported as main perpetrators of psychological violence. One hundred and thirty-four (42%) individuals reported work-related stress. On multivariate analysis, psychological violence was significantly associated with work-related stress. **Conclusion:** WPV was experienced by a high proportion of study subjects. Psychological violence was more frequently experienced, and senior colleagues were deemed responsible in most cases. WPV may be associated with work-related stress.

Keywords: Healthcare workers, resident doctors, workplace violence, work-related stress

Introduction

Workplace violence (WPV) may be defined as any incident where personnel are abused, threatened, or intimidated at the work site. WPV toward health sector personnel is gradually attaining alarming proportions worldwide.[1] According to the WHO, 8%–38% of health-care workers suffer from WPV at some point of time in their careers.[2] Others have found the prevalence of WPV even higher in the range of 56%–75%.[3] Studies in the past have shown that health-care personnel are more likely to experience WPV.[4,5] India is no exception to this phenomenon. Various studies from India in recent times have shown a high prevalence of WPV among resident doctors.[6,7] The chronically over-burdened hospitals, prolonged waiting periods, inadequate infrastructure, miscommunication, lack of manpower, lack of adequate security personnel, and commercialization of health care along with the critical role of media including social media may contribute to WPV against doctors. WPV toward doctors negatively affect both the doctor–patient relationship and effectiveness of health-care delivery system.[8] Relatives and visitors of patients are the most common agents responsible for physical WPV but co-workers and other hospital staff may also be responsible for psychological or sexual harassment.[9,10] Incidents of vandalism by relatives of patients are usually instigated by sudden unexpected demise of the patient, or based on real or perceived medical negligence. The victim may sustain serious injuries resulting in grievous hurt or even death, which may give rise to strikes and agitations by the doctors. This results in the impairment of smooth functioning of the hospital and disruption of health-care delivery system. It is well established that WPV results in increased levels of stress among health-care workers.[11] Psychological stress can result in poor performance at workplace, absenteeism, and reduced

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job satisfaction, all of which may have adverse consequences on patient care.[12]

Although WPV is becoming increasingly common, studies on WPV are sparse, and those relating WPV with stress are even less in number. The present study was undertaken among resident doctors and interns working in various departments of a tertiary care hospital with the objectives to assess the proportion of doctors exposed to WPV find out the main perpetrators of WPV and ascertain if there is any relationship between WPV and stress.

Materials and Methods

Study design

The present study was an observational, institution-based cross-sectional study.

Study setting

All resident doctors, i.e., undergraduate and postgraduate trainee doctors working at a tertiary level institute with multi-specialty teaching, training, and treating facilities, with at least 6 months of work experience were recruited for the study after retrieving informed written consent. The study period was 2 months, starting from September 1, 2019, to October 31, 2019.

Sample size

The sample size calculation was done using STAT CALC version 4.0 [Epi Info™, Division of Health Informatics & Surveillance (DHIS), Center for Surveillance, Epidemiology & Laboratory Services (CSELS), USA]. The total resident population was 1200 and the prior prevalence of WPV was considered 47.0% from a study by Kumar *et al*.[13] The estimated minimum error was taken as 5%, and the confidence interval was set at 95%. The estimated minimum sample size was 278. The sample size was inflated a further 10% to account for nonresponse and incomplete response each.

From internal reporting and monitoring data, it was observed that majority of the incidents of WPV occurred in the high-patient flow departments of internal medicine, general surgery, gynecology and obstetrics, pediatrics, orthopedics, and general emergency. Hence, these departments were focused on data collection and all the resident doctors working in this department during the study were approached. Sixty residents were randomly selected from each of the departments, using a random number table and the duty rosters during the study period. For the first five departments selected for data collection, undergraduate and postgraduate residents were recruited in equal proportions, excepting the emergency department where a positive pay system was done to account for the comparatively higher proportion of undergraduate residents. Separate list for undergraduate and postgraduate residents were maintained to allow due consideration regarding rotational duty, repeat postings, postduty day off and nature and frequency of shifts of duty. Hence, after rounding up, it was decided that 360 sealed envelopes containing the data collection pro forma, informed consent form and study information cum crisis resource materials will be distributed. Any residents refusing to participate or provide informed written consent were replaced by another resident of identical academic and work experience, posted in the same department. Data collection was done using a predesigned, pretested semi-structured self-administered questionnaire adapted and validated from the "WPV in the health sector survey questionnaire" (English) from WHO along with "Perceived occupational stress scale," adopted and validated to facilitate data retrieval from present study participants.

Validation of the study tools

The WHO "WPV in the health sector survey questionnaire" was an internationally validated questionnaire with items for the assessment of presence of WPV and the in-depth analysis of various types of violence encountered by the health care personnel along with the nature, the source and the reaction to physical, mental, psychological, and sexual violence at workplace.[14] It was pretested on a subset of 30 randomly selected residents from the same departments as the main study and were excluded from the main study results. A test–retest reliability of 80%–90% was observed across the departments, and the Cronbach's alpha for internal consistency was 0.73. Semantic equivalence was assessed by a team consisting of an epidemiologist, a communication and linguistic expert and a psychologist.

The perceived occupational stress scale which deals with feelings and thoughts experienced during the previous month and the frequency of such feelings.[15] For each of the 10 items, there was a five-point Likert from "0" to "4," with "0" indicating "never" and "4" indicating "very often." For the items 4, 5, 7, and 8, the scoring was in reverse order. Scores ranging from "0" to "13" were considered low stress, and that ranging from "14" to "26" considered "moderate stress." Any score above "27" was considered "high perceived stress." Cronbach alpha of PSS scale was 0.62. The semantic equivalence was assessed using the same team of experts, and an equivalence of more than 85% was concurred. The variables for WPV in HSS questionnaire were magnitude and type of occurrence of violence, the preceding 6 months, the venue and timing of the incident, whether the incidents were reported and finally if any institutional actions were taken as a consequence. The demographic variables that were accounted included gender, academic rank of the residents, vernacular, the occupational variables were average hours of work per week, number of co-workers per shift, and respondents' perception regarding WPV. Operational definitions of the core variables were adopted from WHO's working definitions annexed with the WPV in HSS questionnaire. Physical violence was defined as "any degree of intentional physical harm by another person, including those of a sexual nature." This included pushing, beating, slapping, pinching, biting, inappropriate touching, and incidents of a similar nature occurring at one's workplace. Psychological violence was defined as "the intentional use of power to humiliate another person. This included verbal abuse, bullying, harassment,

threats, and incidents of a similar nature occurring at or related to one's workplace." Stress was defined as "the response people may have when presented with work demands and pressures that are not matched to their knowledge and abilities, and which challenge their ability to cope."

Statistical analyses

The collected data were cleaned, checked for completeness and consistency, and entered into SPSS© version 17 (SPSS. Inc, IBM, Chicago, Illinois, United States). Continuous variables were described as mean and standard deviation (SD) and categorical variables were described as frequencies and percentages. For scores, median and interquartiles were also considered. Logistic regression analysis was done to assess the effect of different factors on the presence of Job-related perceived stress, by link function LOGISTIC by ENTER method. The final model was assessed for Goodness of fit and interactions were eliminated.

Ethical considerations

Informed written consent was sought from each participant. In the study information sheet, assurance for confidentiality, anonymity, and nondiscriminatory support and counseling resources for those who felt it necessary would be provided. It was also assured that nonparticipation or participation entailed no punitive measures or monetary benefits respectively.

The procedures and methods employed in this study follow the guidelines laid down in the Declaration of Helsinki. The study got ethical clearance from the Institutional Ethics Committee of Medical College Kolkata (approval number MC/KOL/IEC/NON-SPON/447/08/19/2).

Results

Out of 360 envelopes distributed, 323 completely filled pro forma were retrieved. Hence, the final study population was 323. The baseline characteristics are shown in Table 1. The mean age of the respondents was 25.31 (SD 2.69), with 65% male. Most of the study subjects were interns (225, 69.7%). Most of the participants (313, 96.9%) were concerned regarding WPV, but only 149 (46.13%) knew about the existence of WPV reporting system, and out of them, 119 (79.87% of 149) knew how to report WPV [Table 2]. Out of 323 subjects, 247 (76.47%) experienced some form of WPV. Physical violence was experienced by 138 (42.72%), and psychological violence was experienced by 203 (62.85%) individuals. 94 (29.1%) individuals experienced both types of violence [Table 3]. Patient relatives were the only perpetrators of physical violence, while seniors were the most frequent perpetrators of psychological violence. Despite high proportion of subjects experiencing WPV, the number of incidents reported to authorities was much less (34, 13.77%). When the participants were classified based on level of stress, it was seen that most of the subjects had moderate stress (64, 19.81%), as shown in Figure 1. While assessing the association of several factors with work-related stress, it was observed that on univariate analysis, age ≥25 years, female gender, mother tongue other than Bengali, presence of physical violence, psychological violence, or any violence were significantly associated with work-related stress. However, on multivariate model, it was seen that psychological violence and any violence were both associated with work-related stress (Nagelkerke $R^2 = 0.58$, indicated good model fitness) [Table 4].

Table 1: Baseline characteristics of the study subjects (*n*=323)

Variable	*n* (%)
Age (mean)	25.31 (2.69)
<25 years	153 (47.4)
25 or more	170 (52.6)
Gender	
Male	208 (64.4)
Female	115 (35.6)
Religion	
Hindu	210 (65.02)
Others	113 (34.98)
Designation	
Intern	225 (69.7)
JR	91 (28.2)
SR	7 (2.1)
Mother tongue	
Bengali	269 (83.3)
Others	54 (16.7)
Hours of work per week	
<24	10 (3.1)
24-48	70 (21.7)
49-72	128 (39.6)
73 or more	115 (35.6)
Number of co-workers during day shift	
0-3	250 (77.4)
4 or more	73 (22.6)
Number of co-workers during night shift	
0–	300 (92.9)
4 or more	23 (7.1)

SR: Senior resident, JR: Junior resident

Table 2: Concern about workplace violence and knowledge regarding workplace violence reporting system (*n*=323)

Parameter	Frequency (%)
Whether worried about WPV	
Very worried	146 (45.2)
Worried	167 (51.7)
Not worried	10 (3.1)
Whether a violence reporting system exists	
Yes	149 (46.13)
No	100 (30.96)
Do not know	74 (22.91)
Whether knows how to report (*n*=149)	
Yes	119 (79.87)
No	30 (20.13)

WPV: Workplace violence

Table 3: Details of violence experienced by the study subjects (*n*=323)

Details of violence	Categories	Physical violence, *n* (%)	Psychological violence, *n* (%)
Experience of violence in last 3 months		138 (42.72)	203 (62.85)
Number of episodes of violence experienced	Single	59 (18.27)	51 (15.79)
	Multiple	79 (24.46)	152 (47.06)
	None	185 (57.28)	120 (37.15)
Perpetrator of violence	Senior	0	179 (55.42)
	Peer	0	14 (4.33)
	Patient relatives	138 (42.72)	10 (3.10)
	Not applicable	185 (57.28)	120 (37.15)
Shift during which occurred	Morning	10 (3.10)	131 (40.56)
	Evening	45 (13.93)	48 (14.86)
	Night	68 (21.05)	20 (6.19)
	During change of shifts	15 (4.64)	4 (1.24)
	Not applicable	185 (57.28)	120 (37.15)
Place of occurrence (last episode)	Emergency	67 (20.74)	9 (2.79)
	Labor room	32 (9.91)	65 (20.12)
	General ward	22 (6.81)	7 (2.17)
	OT complex	9 (2.79)	88 (27.24)
	ICU	8 (2.48)	34 (10.53)
	Not applicable	185 (57.28)	120 (37.15)

ICU: Intensive care unit, OT: Operation theater

Table 4: Logistic regression analysis showing the effect of different factors on the presence of work-related stress (*n*=323)

Variable	Stress present (134)	Stress absent	COR (95% CI)	AOR (95% CI)
Age				
<25 years (153)	54	99	1	1
≥25 years (170)	80	90	1.63 (1.04-2.55)	1.05 (0.82-4.87)
Gender				
Male (208)	62	146	1	1
Female (115)	72	43	3.94 (2.44-6.38)	2.72 (0.98-5.82)
Mother tongue				
Bengali (269)	105	164	1	1
Others (54)	29	25	1.81 (1.01-3.26)	1.26 (0.74-5.45)
Physical violence				
Absent (185)	60	125	1	1
Present (138)	74	64	2.41 (1.53-3.80)	1.86 (0.93-4.86)
Psychological violence				
Absent (120)	27	93	1	1
Present (203)	107	96	3.84 (2.31-6.39)	2.97 (1.78-8.42)
Any violence				
Absent (76)	16	60	1	1
Present (247)	118	129	3.43 (1.87-6.28)	2.04 (1.31-7.56)

COR: Crude odd ratio, AOR: Adjusted odd ratio, CI: Confidence interval

Discussion

Our study showed that a significant number (247, 76.47%) of doctors reported experiencing some form of violence at workplace. Psychological violence was more frequently reported than physical violence. While patients' relatives were the only perpetrators of physical violence, senior colleagues were mostly reported to be responsible for psychological violence. Verbal abuse comprised the predominant form of psychological violence. Most of the respondents reported experiencing physical violence during their duty in the emergency department. While physical violence was more frequently reported during night shifts, psychological violence was reported more frequently during morning shifts. Regarding job-related stress, it was observed that among those having stress (134), majority had moderate stress (64, 19.81% of those having stress). Psychological violence was more closely associated with job-related stress both in the univariate and multivariate models.

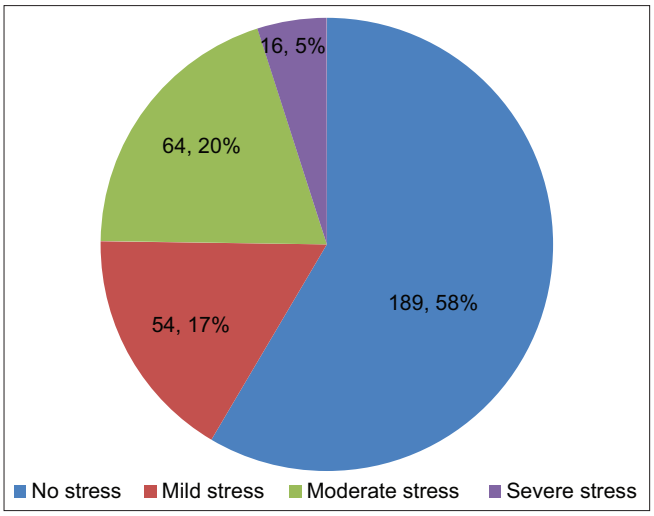

Figure 1: Pie diagram showing the distribution of study population according to the category of work-related stress ($n = 323$). N.B.: Stress was present in 134 individuals

Different studies from various parts of the world have been undertaken on the phenomenon of WPV among health-care workers. The overall percentage of respondents reporting some form of WPV was 76.47%. Singh *et al*. found that 69.5% of resident doctors reported some form of WPV, while Kumar *et al*. found that 47% reported WPV.[8,13] Psychological violence was more commonly reported than physical violence in this study, which is in keeping with findings from other studies.[16] WPV appeared to be more commonly experienced by female doctors in the study by Kumar *et al*.[13] In our study also, female doctors described experiencing WPV more frequently, and it was statistically significant in univariate analysis. It is a well-known fact that WPV can hamper well-being and predispose to stress or compromised sleep quality.[16] Anand *et al*. reported that all residents who experienced WPV were angry, frustrated, and irritable.[6] In another study among critical care physicians experiencing WPV, 23% described that WPV had a profound psychological impact.[17] A study from Rome also showed that work-related violence was a predictor for stress and other related disorders among emergency physicians.[18] It is sometimes difficult to tell whether stress is a consequence of WPV or the cause, as rightly pointed out by Magnavita.[19] Rasool *et al*. in their study on health-care professionals in Pakistan showed that WPV was associated with stress, anxiety, depression, and irritability.[20] Rayan *et al*. found a relation between burnout and WPV among nurses attending pilgrims at Mecca during Hajj.[21] WPV might be detrimental to heath-care worker's mental well-being and job satisfaction, as shown by Cheung *et al*.[22] In addition, WPV is also known to be associated with posttraumatic stress disorder, extreme mental fatigue, and burn out resulting in the requirement of specialist psychological help and counseling.[23] Further, studies have found a significant association between turnover intention and quitting of jobs with the incidence of WPV among health-care personnel.[24,25] In some other studies, severe psychological effects of WPV have been associated with suicide among HCPs.[26,27]

Conclusion

Although our study had a limited sample size and was conducted in only one center, it indicated that WPV was a commonly reported incident among resident doctors and job-related stress was more prevalent in doctors reporting psychological violence. This might indicate that psychological violence needs to be given as much importance as physical violence. The long-term consequences of WPV as well as its association with work-related stress in doctors and other health-care workers need to be further explored.

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Conflicts of interest

There are no conflicts of interest.

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