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Organizational safety climate and workplace violence among primary healthcare workers in Malaysia

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ABSTRACT

Workplace violence (WPV) has become a global safety and health concern in recent times particularly in the healthcare sector. In addition, low levels of organisational safety climate (OSC) have been associated with higher occurrence of occupational related health outcomes. Hence, the objective of this study was to determine the association between organisational safety climate and workplace violence among government primary healthcare workers. A cross-sectional study among a stratified random sample of 838 primary healthcare workers (HCW) from the nine district health offices under the Selangor state health department. Two standardized self-administered questionnaires were used to obtain data on WPV and OSC. Logistic regression models used to estimate the association between OSC and WPV. Prevalence of WPV was 68.5% whereby verbal abuse was the most common type (65%) followed by bullying (27%), physical violence (6%) and sexual harassment (2%). Nurses (29.7%) were the most affected by WPV. The main perpetrators were relatives of patients (38%). Low level of OSC was also associated with WPV (OR=3.04, 95% CI=1.45-6.41). The results of this study confirmed that safety climate is associated with WPV. Hence, interventions and efforts to prevent WPV among HCW should also include improving organizational safety factors.

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1. INTRODUCTION

Workplace violence (WPV) is defined as incidents where persons are abused, threatened or assaulted in circumstances related to their work, including commuting to and from work, involving explicit or implicit challenges to their safety, well-being or health [1], [2]. WPV is broadly categorized into two, i.e., physical (Slapping, pinching and Punching and psychological violence. Psychological violence can further be classified into verbal abuse, bullying and harassments (racial and sexual) [3]. WPV can also be classified based on the preparators. Type 1 is violence with criminal intent such as robbery, homicide. Type 2 is violence caused by clients, in these instance patients and their relatives. Type 3 is being violenced among colleagues and superiors. Type 4 is being personal relationship violenced spilling over to workplace [4]. WPV has become a global safety and health concern in recent times particularly in the healthcare sector globally as well as regionally [5]–[7]. Healthcare workers (HCW) include physicians, nurses, medical assistants, allied medical workers, public health workers, laboratory technicians, pharmacists, and administrative staff [8]. A study on workplace violence among Hospital Universiti Kebangsaan Malaysia (HUKM) nurses in 2011 reported that one nurse is exposed to workplace violence every other day [9] and a more recent study in 2018 reports a WPV prevalence of 71.3% among HCW in Hospital Kuala Lumpur

(HKL) HCW's [10]. The most common type of violence faced by HCW is verbal abuse [11], [12]. On the other hand, in terms of location, the highest numbers of workplace violence incidences are seen in accident and emergency departments, psychiatric wards and intensive care unit [13]. The most vulnerable group of HCW are nurses, as the reported percentage of nurses being abused in psychiatric wards and accident and emergency departments is an astonishing 98% and 100% [11], [12] respectively and most of this violence are perpetrated by patients and their relatives.

Research suggests that WPV in general is significantly underreported, especially when there is no physical injury [14]. Reasons for underreporting of WPV among HCW include lack of a reporting policy, lack of faith in the reporting system, and fear of retaliation by superiors [15]. However, a growing body of research has identified that WPV from both patients and colleagues are significantly associated with psychological ill-health that is associated with high levels of anxiety, fear, post-traumatic stress disorder (PTSD), depression, and decreased work satisfaction [4]. Besides affecting an individual, WPV also affects an organization via increased absenteeism, lower productivity, and frequent litigation [16].

An extensive review of existing literature showed that studies concerning WPV have primarily focused on individual factors, under the hypothesis that occurrence of violence is generally determined by personal characteristics [17]. Hence, there is an increased need for a multidimensional approach to WPV related research [4], [18]. The International Labour Organization (ILO) guidelines for developing comprehensive WPV prevention measures propose this strategy, which includes individual training and counselling as well as improvements in safety and health-related organisational culture as well as policy [19]. Despite the fact that organisational issues such as understaffing, inadequate supervisor support, poor workgroup relationships, and job overload have been linked to increased workplace violence, more research on organisational safety factors is still highly required [4]. One of the main organizational factor affecting health and safety related outcomes in the healthcare environment is safety climate – the shared assessments of safety policies, procedures, and practices, and the perceptions and expectations workers have of workplace safety [20]. The concept of OSC encompasses the following: management and organizational practices (adequacy of training, provision of safety equipment, quality of safety management system) management values (management concern for employee well-being), employee involvement in workplace health and safety as well as employer employee communication on of safety and health [21]. The presence of high safety climate levels as been linked to a reduction in occupationally related health hazards [22].

Hence, the objective of this study to estimate the prevalence of WPV in relation to socio-demographic characteristic, job characteristics and OSC risk factors among primary healthcare workers.

2. METHOD

2.1. Study design, study location and sampling

This was a cross-sectional study conducted among HCW at government primary healthcare facilities in the state of Selangor, Malaysia. Selangor has a population of 6.53 million and is the most populated state in Malaysia. The government primary healthcare facilities located in the nine districts in Selangor receives the highest patient visit in Malaysia. Study participants were selected from the nine districts in Selangor via proportionate stratified random sampling method. The inclusion criteria were Malaysian citizen, aged between 21 and 60 years old. Besides that, participants must have had at least one year of working experience in one of the government district health facilities in Selangor. Contract workers, part-time workers and attachment students were excluded. In addition, participants were also randomly selected from the employee list provided by the district health departments using SPSS Statistics software Edition 24.

To ensure an adequate sample size and power of the study, the confidence interval (CI) was set at 95%, an alpha (α) of 5% and 80% power of study. Hence, sample size was determined by two means, one by using population surveys in similar previous studies and using the measure of association [1], [2]. Based on the sample size calculation above, the largest sample size required for this study is 530. Given an estimated 53-91% response rate [1]–[3], a minimum of 1,000 [(100÷53)x530=1,000] questionnaires were distributed. This study adhered to the Helsinki Declarations [23] which requires a protocol explaining the study's goals, data collection techniques, data uses, and participant privacy guarantees to be sent to the MOH's Medical Research and Ethical Committee.

2.2. Instrumentation and data collection

Two standardized self-administered questionnaires were used to obtain data on WPV (WHO-ILO) [24] and OSC (NOSACQ-50) [25]. The first questionnaire (WHO-ILO) had two parts to it eliciting information on: i) socio-demographic and work characteristic, and ii) workplace violence (WPV). The second questionnaire was the Nordic occupational safety climate questionnaire (NOSACQ-50) elicited information on Organisational Safety climate (OSC). The first part of WHO-ILO questionnaire on WPV among HCW elicited socio-demographic details of study participants which includes their gender, age, race

and marital status. In terms of work characteristics, experience in years, profession, district health office, participation in shift work, interaction with patients, number of staffs present during a normal working day were determined. The second part of the questionnaire elicited data to determine the one-year prevalence of WPV. There were 32 questions in total covering two sections which covered data on physical violence and psychosocial violence (verbal abuse, mobbing/bullying, sexual harassment). Each section consisted eight questions on the types of violence experienced by the participants over the past 12-months, was it considered a typical incident by the respondents, the source of the violent act (the perpetrator), the location of the incident, was in preventable in, and respondents 'immediate respond to the incident, was there a formal report made to the organization and if not, why wasn't a report made. The questionnaire's reliability has been measured using a Cronbach Alpha Coefficient with the value of 0.83 [26].

The NOSACQ-50 was used to elicit information on workers' perceptions of management and workgroup safety related policies, procedures and practices at their individual workplace. The questionnaire contains seven safety climate dimensions, and has a total of 50 items: i) Management safety commitment and ability (nine items), ii) Management safety empowerment (seven items), iii) Management safety justice (six items), iv) Employees' commitment to safety (six items), v) Employees' safety priority and absence of risk acceptance (seven items), vi) Learning, communication and trust (eight items), vii) Trust in efficacy of safety systems (seven items). Respondents were asked to rate how strongly they agreed with each statement through a scale from 1 (strongly disagree) to 4 (strongly agree). Each dimension contained alternating positive and negative themed items to reduce acquiescent bias and extreme response bias. The score of each of these items was dichotomized by mean score points to determine scores obtained from respondents were high or low as recommended by the NOSACQ-50 developers. A mean score of <3.0 is categorized as low meanwhile a score of ≥3.0 is categorized as high safety climate [26]. The questionnaire's reliability has been measured using a Cronbach Alpha Coefficient with the value of 0.87 [26].

A pilot study was conducted among 42 HCW prior to distribution of the questionnaire. The data collected from the pilot study were first reviewed to determine the reliability of the questionnaire, upon which the questionnaire was then modified accordingly. An expert panel was asked to validate the content of the questionnaire. The questionnaires were distributed personally by the researcher together written informed consent. Each respondent was given a dedicated 45 minutes slot to complete the questionnaire during their annual healthcare safety course. Data for this study was collected within four weeks. In addition, all collected data is also kept private and confidential.

2.3. Statistical analyses

IBM SPSS Statistic Version 24 was used to manage and analyse the data. The raw data was checked for completeness, and all continuous data was subjected to a normality test. Normality testing revealed that all variables, including age and years of experience, were not distributed normally. Descriptive statistics were used to summarise respondents' socio-demographic and job characteristics, as well as OSC variables. For each form of WPV, the frequency and percentage were computed. The relationships of socio-demographic, occupational, and OSC variables with WPV were investigated using Chi-square statistics. Variables which had a p-value of less than 0.25 in a univariate analysis were included into the multivariate analyses as per Hosmer and Lemenshow's recommendation. Logistic regression was used to measure adjusted association between the independent variable and WPV. Significance level was set to be at $p<0.05$.

2.4. Ethical approval

Ethical approval was granted by the University Malaya Medical Centre Research Ethics Committee (UMREC) and medical research and ethics committee (MREC) of the MOH. Each respondent was informed about the purpose of the study and also that all data obtained from them were kept confidential by using codes instead of any personal identifiers. This was a self-funded study.

3. RESULTS AND DISCUSSION

The total numbers of study participants were 838 giving a response rate of 83.8%. The socio-demographic characteristics of the respondents are depicted in Table 1. Majority of the respondents were females (64%), aged less than 30 (50.6%), and married (56.9%). Malays were the major ethnic group (71.5%) followed by Indians at 14%. In the context of work characteristics, 34.2% were nurses, 21.8% doctors, and 6.4% midwives.

The HCW's involved in this study were predominantly from health facilities in larger District health offices (DHO) (65.8%) in comparison to facilities from small DHO (34.2%). In terms of working experience, 64.8% of them had worked for less than 10 years. None of the respondents indicated were working shifts. Around 88% of the respondents indicated that their work involves interacting with patients. Most of the respondents indicated that they work with less than five workers (55.6%) during most (>50%) of their

working hours. In terms of weather the respondents are worried of violence at their workplace, nearly half of (48.7) indicated they were very worried, 20.7% were extremely worried and only 18.7% were not worried at all. In this section, it is explained the results of research and at the same time is given the comprehensive discussion. Results can be presented in figures, graphs, tables and others that make the reader understand easily [14], [15]. The discussion can be made in several sub-sections.

Table 1. The distribution of socio-demographic characteristics (n=838)

Variable	Sample data (n=838) Total (%)
Gender	
Male	302 (36.0)
Female	536 (64.0)
Age (Range: 21-56 years old)	
<29	424 (50.6)
30-39	285 (34.0)
40-49	105 (12.5)
>50	24 (2.9)
Marital status	
Single	331 (39.5)
Married	477 (56.9)
Divorced	22 (2.6)
Widow(er)	8 (1.0)
Profession	
Doctor	183 (21.8)
Nurse	287 (34.2)
Midwife	54 (6.4)
Pharmacist	36 (4.3)
Administrative	36 (4.3)
Professional allied*	23 (2.7)
Technical*	42 (5.0)
Enforcement	58 (6.9)
Fogging unit	38 (4.5)
Support staff*	53 (6.3)
Paramedics	28 (3.3)
Ethnicity	
Malay	599 (71.5)
Chinese	95 (11.3)
Indian	117 (14.0)
Others	27 (3.2)
District health office (DHO)	
Small districts*	287 (34.2)
Large districts*	551 (65.8)
Working experience (Range: 1-32 years)	
1-10	543 (64.8)
11-20	203 (24.2)
21-30	78 (9.3)
31-40	14 (1.7)
Shift work	
Yes	0 (0.0)
No	838 (100)
Interaction with patients	
Yes	744 (88.8)
No	94 (11.2)
Staff present during (>50%) of work	
1-5	466 (55.6)
6-10	253 (30.2)
11-15	70 (8.4)
Worried of violence at workplace	
Not worried at all	151 (18.0)
A little worried	47 (5.6)
Worried	58 (6.9)
Very worried	408 (48.7)
Extremely worried	174 (20.8)

*Large district: district health office with >500 HCW and serves a population of more than or equals 500,000 people
*Small district: district health office with <500 HCW and serves a population of less than 500,000 people
*Support staffs: medical attendant (PPK), general worker (PRA), driver
*Technical: medical laboratory technologist (MLT)
*Professional allied: occupational therapist, physiotherapist, radiographer

3.1. Prevalence of workplace violence (WPV)

Overall, 574 (68.5%) of the 838 participants said they had been exposed to at least one of the four categories of violence; verbal abuse was the most common (65 %), followed by bullying/mobbing (27%), physical violence (6.0 %), and the least common type was sexual harassment (2%). Nurses (44.8%) were the highest category to report WPV, followed by doctors (15.1%), enforcement officers (7.3%), and technical (5.9%) and support (5.2%) staffs. The remaining professions recorded prevalence of <5.0%. Lastly, highest prevalence of WPV in the past 12-months were among HCW working in larger districts (77.7%) compared to smaller districts (22.3%).

3.2. Perpetrators of workplace violence

Patients, relatives of patients/visitors, colleagues, superior/management, public and others were the six groups of perpetrators assessed in this study. Physical violence mostly executed by patients themselves (50%) followed by public (47%) and relatives of patients/visitors (12%). In the case of verbal abuse, relatives of patients/visitors (46%) were the most common preparators, followed by patients (41%), colleagues (9%), superiors (2%) and public (2%). In cases of bullying/mobbing, superiors (65%) were the most common perpetrators, followed by relatives of patients/visitors (24%) and patients themselves (10%). Sexual harassment was mostly perpetrated by colleagues (33%), patients (28%) and superiors (22%).

3.3. Organizational safety climate (OSC) factors

Total mean score for OSC was 2.96. The OSC was categorized based on the mean score low OSC (<3.0) and high OSC (≥3.0), 54.9% reported low OSC and 45.1% reported high OSC. Managements' safety empowerment received the lowest mean score of 2.81 with 81% of the respondents scoring <3.0. On the other hand, Worker's safety priority and non-risk acceptance had the highest mean score of 3.10 with 66.9% of HCW having high OCS as shown in Table 2.

Table 2. The distribution of organizational safety climate (OSC) factors among respondents (n=838)

Organisational safety climate (OSC) dimensions	n (%)	Mean (SD)	Min-Max
Management's safety priority and ability			
Low	592 (70.6)	2.83 (0.38)	2.00-3.32
High	246 (29.4)		
Management's safety empowerment			
Low	679 (81.0)	2.81 (0.23)	2.29-3.34
High	159 (19.0)		
Management's safety justice			
High	573 (68.4)	2.85 (0.22)	2.17-3.30
Low	265 (31.6)		
Workers safety commitment			
Low	153 (18.3)	3.05 (0.24)	2.17-3.33
High	685 (81.7)		
Workers safety priority and non-risk acceptance			
Low	277 (33.1)	3.10 (0.36)	2.43-3.86
High	561 (66.9)		
Peer safety communication, learning and trust			
Low	358 (42.7)	3.00 (0.18)	2.63-3.71
High	480 (57.3)		
Workers' trust in efficacy of safety systems			
Low	372 (44.4)	3.07 (0.38)	2.00-3.71
High	466 (55.6)		
Organizational safety climate (Total score)			
Low	460 (54.9)	2.96 (0.20)	2.49-3.86
High	378 (45.1)		

3.4. Association between socio-demographic characteristics, work characteristics and OSC dimensions with WPV

Chi-square statistics were applied to measure the association between the three independent study variables; socio-demographic characteristics, work characteristics, and OSC dimensions with WPV. The observed p-value indicated the strength of association between the independent variables and the dependents variable. In terms of socio-demographic characteristics, gender, age, ethnicity, and marital status were all significantly ($p<0.001$) associated with WPV. The odds of females reporting exposure to WPV was higher than males. Similarly, the odds Chinese HCW reporting exposure to WPV was 5.7 times of a Malay HCW. Those HCW in the 30-39 age group and divorcees also had higher odds of reporting exposure to WPV compared to younger age group and single workers. As of work characteristics size of DHO, number of staff present during working hours and respondents feeling worried of violence were significantly ($p<0.001$) associated with WPV.

There were no significant association found between different groups of workers, working experience and weather the respondents interact with patients or not (p>0.05) with reporting exposure to WPV.

The results demonstrated that larger districts have higher prevalence of WPV compared to smaller districts. In terms number of staffs present during working hours, those who worked with ≤10 staffs had higher odds of reporting exposure to WPV. In addition, those HCW who are more worried of violence at work have lesser odds reporting exposure to WPV. In terms of OSC dimensions, results showed that respondents reporting exposure to WPV has a low score in all seven categories including total safety climate of OSC.

After simultaneous multivariate adjustment, when compared to males' females had higher prevalence of WPV Those in the age group of 30-39 and 40-49 reported a higher prevalence of WPV compared to those from age group of <30. Post adjustment, being married became a non-significant factor of WPV, however those HCW whom are divorced (or are widows(er)) reported higher prevalence compared to single HCW's. In terms of ethnicity, being Chinese reported a higher prevalence of WPV compared to Malay HCW's. In terms of work characteristics, those HCW's working in larger and those working with less than 10 co-workers for more than 50% of their working hours reported higher prevalence of WPV. In addition, those HCW the odds of exposure to WPV among those HCW whom reported of being extremely worried of WPV were 0.32 compared to those whom were not worried at all. Finally, a low level of safety climate was significantly associated with WPV among HCW in primary healthcare as presented in Table 3.

Table 3. The crude and adjusted association between socio-demographic characteristics, work characteristics, and organizational safety climate (OSC) dimensions with workplace violence (WPV) (n=838)

Risk factors	Crude OR (95% CI)	Adjusted OR (95% CI)
Gender		
Male*	1.00	1.0
Female	2.95 (2.19- 3.98)	5.44 (3.53-8.39)
Age (Range: 21-56 years old)		
<30*	1.00	1.0
30-39	2.69 (1.95-3.71)	3.86 (2.21-6.77)
40-49	2.16 (1.38-3.38)	3.58 (1.67-7.66)
≥50	0.62 (0.21-1.87)	0.34 (0.79-1.45)
Marital status		
Single*	1.0	1.0
Married	1.67 (1.23-2.27)	1.20 (0.70-2.05)
Divorced	4.05 (1.67-9.81)	4.13 (1.22-7.90)
Widow(er)	2.85 (0.68-11.46)	7.54 (2.13-13.83)
Ethnicity		
Malay*	1.0	1.0
Chinese	5.70 (3.56-9.13)	7.31 (3.58-14.89)
Indian	1.35 (0.89-2.05)	0.41 (0.23-0.72)
Others	0.44 (0.15-1.28)	0.74 (0.18-3.08)
***Pejabat Kesihatan Daerah* (PKD)**		
Small PKD*	1.0	1.0
Large PKD	4.77 (3.50-6.50)	4.31 (2.66-7.00)
Staff present during (>50%) of work		
>11*	1.0	1.0
<10	3.53	3.04 (1.45-6.41)
Worried of Violence		
Not worried at all*	1.00	1.0
A little worried	0.61 (0.31-1.20)	1.03 (0.43-2.63)
Worried	0.52 (0.27-0.97)	0.73 (0.29-1.85)
Very worried	0.51 (0.35-0.75)	1.82 (1.00-3.16)
Extremely worried	0.20 (0.12-0.33)	0.32 (0.16-0.61)
Organisational safety climate (OSC) dimensions		
Safety climate total score		
High*	1.0	1.0
Low	5.45 (3.98-7.47)	3.02 (1.81-5.01)

*Comparison group. Significant when p-value<0.05

3.5. Discussion

Over one third of the HCW's surveyed in the scope of this study reported of being exposed to at least one of four types WPV in the past one year. The one-year prevalence of WPV among primary HCW in Selangor was 68.5% indicating that 574 out of 838 were victims of WPV. However these findings were significantly lower than the prevalence reported in a recent study of WPV among HCW in Hospital Kuala Lumpur in 2017 which reported a prevalence of 71.3% [10] as well as 90% in Saudi Arabia [27]. In contrary, the observed prevalence in this study was higher than those in found in the study among HCW in HUKM (3.7%) [9], in Jordan (65.5%) [28], China (56.4%) [29], and in Saudi Arabia (28%) [30]. The lower

prevalence between this study compared to the study in HKL [31] is because the later was among accident and emergency HCW's in the principle tertiary hospital in Malaysia located at the heart of the densely populated Kuala Lumpur and these factors were identified previously to be significant in predicting workplace violence [32]. In comparison to the HUKM study which observed a significantly lower prevalence, it is because that study only measured three months prevalence of WPV using a different study instrument in contrary to the present study which measured one-year prevalence.

The most common type WPV observed in this study was verbal abuse (65%), followed by bullying (27%), next was physical violence (6%) and the least common being sexual harassment (2%). These results are similar with multiple other studies [33], [34]. Verbal abuse is usually reported far more common than others because it is known to precede subsequent physical violence and bullying. The most common perpetrators of WPV were relatives followed by patients, colleagues, superiors and public. This is consistent with the study done in HKL as well [10].

The prevalence of workplace violence was higher in health care facilities in larger districts (65.8%) compared to smaller districts (34.2%). Majority of violent incidents occur inside the health facility compared to outside (home visiting, commuting to and from work). This is due to the bigger workforce in bigger districts as well as the density of patients and patient load at the facilities [10]. Multiple logistic regressions controlling for confounders found that odds females have a higher 5.5 times odds of reporting exposure to WPV compared to males. This finding is similar to other studies [34]–[36] although multiple other studies do report no difference in the prevalence between males and females [9], [10]. Most studies report that the lower the age the higher the odds of experiencing WPV [10], however, this study it was noted the middle-aged group of 31-50 had higher odds compared to the younger HCW. This proves that all age group are equally at risk of WPV in-terms of primary healthcare setting. The other significant factors were race and marital status, odds were higher among Chinese compared to Malays and being Indian was a protective factor. Besides divorcees and widows also had higher odds compared to single HCW.

In terms of work-related factors, the significant factors which increase the odds of experiencing WPV after adjustment were working in larger district facilities as well as working with ≤10 HCW during a normal working hour. Profession was not significant although the prevalence was high among nurses. In the United States, long waiting hours, not satisfied with treatment, understaffing and poor waiting areas and treatment rooms were identified as risk factors of WPV among HCW [37]. Similarly, in Malaysia WPV is explained by long waiting period of more than 20 minutes, refusal of referral to tertiary centres, persistent and untreated pain, patients' anxiety and misunderstandings due to language barrier or in view of difference in tradition, or unconducive work environment [10].

Finally, in terms of OSC, a low level of safety climate was strongly associated with higher prevalence of all sources of verbal abuse. While differences in the assessment of safety climate may exist, the findings in this study are consistent with previous evidences showing a strong link between safety climate factors and work-related injuries [38] and physical and psychological job abuse [39]. In a study of organizational determinants of safety climate in nursing homes, a more positive safety climate reduced number of workplace errors which lead to a violent event [40]. This provides some support for the fact that OSC were significant inverse determinants of WPV in the current study. Besides findings of this study is also in line with previous research in a psychiatric setting by Isak *et al.* where employee positive perceptions of management's commitment to safety were significantly associated with fewer patient perpetrated aggressive incidents [41]. In addition, their study was done in a very high-risk environment where likelihood of a violent incident occurring is high. Positive climate ratings for violence prevention indicated a lower risk of being exposed to violence over the course of six months in longitudinal research. However, the tool utilised to measure OSC in this study differed from the current study. Furthermore, that study (n=176) only included nurses [42]. Although individual factors of OSC were not significant after controlling for confounders, this study does show that HCW working in a low OSC environment have five times more odds of being exposed to WPV.

This study contains some limitation, recall bias is one of the main limitations as WPV was measured utilising a retrospectively self-administered questionnaire. There was no official data registry on WPV among primary HCW in Selangor at the time this study was conducted. As a result, self-reporting was the only viable option for obtaining information on WPV. The study's questions asked whether or not workers had been exposed to WPV. This simple question was chosen because there is no agreed-upon definition of what constitutes WPV, and it's possible that different people will interpret it differently. Although all participants were given standard operational definitions of WPV, the concept of WPV and its definitions may vary depending on the individual as well as situational factors [43]. Given these limitations, our approach was based on the assumption that if the worker reported having experienced WPV, it must have been so. Besides, the cross-sectional nature of the survey limits the capability of this study to establish causality. In addition, the questionnaire on WPV was not originally developed to specifically determine the associations of OSC and WPV. It represents an exploratory analysis and must be interpreted as such. On the whole, since OSC represents

a global assessment on the general state of workplace safety, the findings in this study are also conceptually sound. Besides, the participants of this study were randomly selected using a proportional random sampling method hence improving the generalizability of findings to primary healthcare workers in Selangor, and perhaps Malaysia. In addition, to the knowledge of the researchers, it represents the first formal evaluation of WPV in the primary health sector in Malaysia, and the first evaluating the association between OSC and WPV.

4. CONCLUSION

This study shows that the prevalence of WPV among primary HCW is high and comparable to the prevalence among hospital based HCW. Verbal abuse being the commonest type reported. Majority of the perpetrators are patients' relatives and visitors. The significant risk factors of WPV were gender, age, ethnicity, marital status, district of work, perception of being worried of violence, number of co-workers at time of work and OSC after controlling for other sociodemographic factors, safety climate factors and other work characteristics. Since low safety climate is significantly associated with higher odds of WPV, primary interventions should focus on improving safety climate factors in addition to the existing prevention strategies which focuses more on coping with violence. An integrative approach encompassing individual and organizational level strategies should be adopted in developing in preventing WPV among HCW. The approach should include training and counselling at the individual level. Improvement of physical safety features at the organization as well as increasing emphasis on improving awareness and policies regarding organizational safety climate and its positive role in preventing violence and negative work-health related outcome. Future studies must be conducted using a prospective design, simultaneously evaluating individual types of violence and its potential risk factors. Special attention should be given to organizational characteristics of the workplace that may increase the risk of violence.

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