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Prevalence of verbal and physical workplace violence against nurses in psychiatric hospitals in China

Li Lu[a,1], Ka-In Lok[a,b,1], Ling Zhang[c,1], Ailing Hu[d,1], Gabor S. Ungvari[e,f], Daniel T. Bressington[g], Teris Cheung[g], Feng-Rong An[c,**], Yu-Tao Xiang[a,*]

[a] Unit of Psychiatry, Institute of Translational Medicine, Faculty of Health Sciences, & Center for Cognition and Brain Sciences, University of Macau, Macao SAR, China
[b] Kiang Wu Nursing College of Macau, Macau SAR, China
[c] The National Clinical Research Center for Mental Disorders & Beijing Key Laboratory of Mental Disorders, Beijing Anding Hospital & the Advanced Innovation Center for Human Brain Protection, Capital Medical University, Beijing, China
[d] Department of Nursing, the Third Affiliated Hospital, Sun Yat-sen University, Guangzhou, China
[e] University of Notre Dame Australia & Graylands Hospital, Perth, Australia
[f] Division of Psychiatry, School of Medicine, University of Western Australia, Perth, Australia
[g] School of Nursing, Hong Kong Polytechnic University, Hong Kong SAR, China

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ABSTRACT

Objective: Workplace violence (WPV) is common in mental health services in China, but its multi-center prevalence measured using standardized rating scales has rarely been reported. This study aimed to explore the prevalence of verbal and physical violence against nurses working in psychiatric hospitals and examine its independent socio-demographic correlates in China.

Methods: This was a cross-sectional study conducted in 11 major psychiatric hospitals in China using a 9-item self-reported workplace violence scale.

Results: A total of 1906 psychiatric nurses were recruited to participate in this study. The one-year prevalence of verbal and/or physical workplace violence (WPV) was 84.2% (95% CI: 82.4–85.8). The prevalence rates of verbal abuse, threats and physical violence were 79.3% (95% CI: 77.4–81.1), 70.9% (95% CI: 68.8–73.0) and 57.9% (95% CI: 55.7–60.2), respectively. Multiple logistic regression analysis revealed that working in department of psychiatry (OR = 3.42, $P < 0.001$), having moderate (OR = 2.05, $P = 0.009$), severe (OR = 2.04, $P = 0.015$) or extremely severe (OR = 3.21, $P < 0.001$) anxiety level of WPV and working in hospitals with a WPV reporting system (OR = 1.88, $P < 0.001$) were significantly associated with WPV.

Conclusion: WPV against nurses is a serious occupational and public health concern in Chinese psychiatric hospitals. Appropriate preventive measures should be undertaken to reduce the risk of WPV in healthcare settings.

Introduction

Workplace violence (WPV) can be defined as violent events such as threats, abuse, or physical assaults that challenge the well-being of staff in their workplace (Lu et al., 2018). WPV has been shown to have direct negative impacts on workers' safety, health and productivity (Magnavita, 2014; WHO, 2003). Although the “zero tolerance” policy against WPV has been adopted in medical settings in many countries (Clements, DeRanieri, Clark, Manno, & Kuhn, 2005; Hassankhani & Soheili, 2017; Mitra et al., 2018; Paniagua, Bond, & Thompson, 2009), the prevalence of WPV remains high (Hoyle, Smith, Mahoney, & Kyle, 2018). China is of no exception (Huang & Ding, 2011; Wu et al., 2012; Yang, Zhang, Shen, Li, & Wu, 2013). WPV consists of physical and psychological violence, which often co-exist (WHO, 2003). Violent behaviours can be perpetrated by patients, family members, visitors, colleagues and other professional groups (Abed, Morris, & Sobers-Grannum, 2016; Jackson, Clare, & Mannix, 2002; May & Grubbs, 2002; Park, Cho, & Hong, 2015; Speroni, Fitch, Dawson, Dugan, & Atherton, 2014).

WPV can lead to physical injuries, psychological disorders and

* Corresponding author at: 3/F, Building E12, Faculty of Health Sciences, University of Macau, Avenida da Universidade, Taipa, Macau, SAR, China.
** Correspondence to: F.-R. An, Beijing Anding Hospital, Beijing, China.
E-mail addresses: afrylm@sina.com (F.-R. An), xyutly@gmail.com, xyutly@gmail.com (Y.-T. Xiang).
[1] These authors contributed equally to this work.

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emotional problems. These can adversely affect work functioning, relationships with patients, quality of care, personal daily life and increase health-related costs (Lanctôt & Guay, 2014). For instance, a longitudinal study found that WPV was associated with healthcare workers' perceived low support at work and job strain during the subsequent year (Magnavita, 2014). Other studies found that post-traumatic stress disorder was common in nurses who experienced WPV (Bambi et al., 2018; Pai & Lee, 2011).

The prevalence of WPV varies greatly across different clinical specialties. Healthcare workers in emergency units tend to report the most frequent WPV in many countries (Fernandes et al., 1999; Gates, Ross, & McQueen, 2006; Jiao et al., 2015; May & Grubbs, 2002). Indeed, a recent meta-analysis of 47 studies involving over 80,000 participants also confirmed that healthcare workers in emergency units faced the highest risk of WPV in China (Lu et al., 2018).

Due to increased demands for mental health services in China (Zhang & Zhao, 2015), front-line nurses in psychiatric hospitals are facing a huge influx of mentally ill patients and increased workloads (Hercelinskyj, Cruickshank, Brown, & Phillips, 2014; Zeng et al., 2013), both of which could increase the risk of WPV. It is therefore of paramount importance to estimate the current extent of WPV encountered by the estimated 57,000 psychiatric nurses in China (Xiang, Ng, Yu, & Wang, 2018). Having a good understanding of the phenomena of WPV in Chinese psychiatric settings would help to inform health policies/approaches for its prevention and management, in addition to highlighting the support needs of staff. However, to date, there is only a paucity of published studies on the prevalence and correlates of WPV in nurses working in Chinese psychiatric hospitals (Zeng et al., 2013).

Therefore, this study set out to explore the prevalence of verbal and physical WPV and examine its socio-demographic correlates among nurses working in Chinese psychiatric hospitals.

Methods

Settings, subjects and data collection

This is a multi-center, cross-sectional survey conducted between October and December 2017 in 11 major psychiatric hospitals in north, east, south, west and central parts of China. These hospitals were chosen to obtain the perspectives of nurses working across a large geographical area in order to increase the representativeness of the sample. All frontline qualified nurses working in the collaborating hospitals in any clinical setting for 1 year or above were invited to participate in this study.

Nursing department managers of the collaborating hospitals distributed the questionnaires to the nurses and written informed consent forms were signed by all participants. Potential participants were made aware that participation was entirely voluntary and that they could refuse to take part without any penalty. Nurse participants were reassured anonymity and confidentiality. Completed questionnaires were collected one week after distribution. The study protocol was approved by the Human Research and Ethics Committees of the collaborating hospitals. We report this study in strict accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines (Von Elm et al., 2007).

Assessment tools

A pre-determined data collection form designed for this study was used to collect basic socio-demographic characteristics, including: gender, age, marital status, children (yes/no), years of clinical experience, monthly income (RMB), educational attainment, clinical specialty (psychiatry/others, such as those working in administrative or rehabilitation units or clinical laboratories), shift work rotation (yes/no), perceived anxiety level of WPV (refers to self-reported anxiety level of WPV; not at all/slight/moderate/severe/extremely severe), and WPV reporting system (yes/no).

The widely used 9-item Chinese version of workplace violence scale utilised in this study was developed by Chen ZH's group (Chen, Wang, Lu, & Jing, 2004; Chen, 2011) based on the WHO definition of “workplace violence” to assess nurses' experiences with WPV in the past year. This scale covers three aspects of WPV (verbal (e.g., including verbal abuse and threats)), physical violence and sexual violence (e.g., sexual harassment, sexual assault and rape) and has demonstrated good psychometric properties (Chen et al., 2004). Each item is evaluated with four frequency categories: 0 = none, 1 = once, 2 = two to three times, 3 = > 3 times (Chen, 2011; Chen et al., 2004). In this study, nurses were considered to be “experiencing WPV” if they reported any type of verbal or physical violence in the past year.

Statistical analysis

Data were analyzed using STATA version 12.0 (Stata Corporation, College Station, Texas, USA). Independent *t*-test, Mann-Whitney *U* test and Chi-square test were used to compare socio-demographic characteristics between nurses reporting WPV and those without. The Shapiro-Wilk test was used to examine the normal distribution of continuous variables. Additionally, multiple logistic regression analysis was used to identify significant variables associated with WPV. The regression model was conducted using WPV (yes/no) as the dependent variable and explanatory variables were included if they were identified within the univariate analyses to have significant differences in the prevalence of WPV across groups. Significance level was set at $P < 0.05$ (two-tailed).

Results

A total of 2124 questionnaires were distributed, and 1906 were completed and returned for analyses, yielding a response rate of 89.7%. The participating provinces were shown in Fig. 1.

The Shapiro-Wilk tests showed that age, clinical experience, monthly income and educational attainment were not normally distributed ($P < 0.05$). Of the participating nurses, 1605 (84.2%) (95% CI: 82.4–85.8) experienced verbal or/and physical violence in the past year; 1512 (79.3%) (95% CI: 77.4–81.1) and 1352 (70.9%) (95% CI: 68.8–73.0) nurses were verbally abused and threatened, respectively, while 1104 (57.9%) (95% CI: 55.7–60.2) experienced physical violence.

The results of univariate analyses are shown in Table 1. Significant group differences were found in terms of gender, education, clinical specialty, perceived anxiety level of WPV, and WPV report system ($P < 0.05$). Multiple logistic regression analysis revealed that nurses working in department of psychiatry (OR = 3.42, $P < 0.001$), having moderate (OR = 2.05, $P = 0.009$), severe (OR = 2.04, $P = 0.015$) or extremely severe (OR = 3.21, $P < 0.001$) anxiety level of WPV and those hospitals with a WPV reporting system in place (OR = 1.88, $P < 0.001$) were more likely to experience WPV (Table 2).

Discussion

This study found that a vast majority (84.2%) of the 1906 nurses working in Chinese psychiatric hospitals experienced at least one type of verbal or physical violence in the past 12 months. This finding (84.2%) is lower than the one year prevalence of WPV reported in a recent study (94.6%) conducted in one hospital in Wuhan, China (Yang, Stone, Petrini, & Morris, 2018), but is much higher than most international studies, such as Japan (41%) (Fujimoto, Hirota, Kodama, Greiner, & Hashimoto, 2017), Botswana (53.9%) (Olashore, Akanni, & Ogundipe, 2018), Jordan (67.2%) (Al-Azzam, Tawalbeh, Sulaiman, Al-Sagarat, & Harb, 2017) and Finland (65%) (Pekurinen et al., 2017), and comparable with the United States (85.2%) (Ridenour et al., 2015). In addition, the prevalence of any types of WPV in the current study is also higher than the 62.7% reported by nurses working in mixed hospital

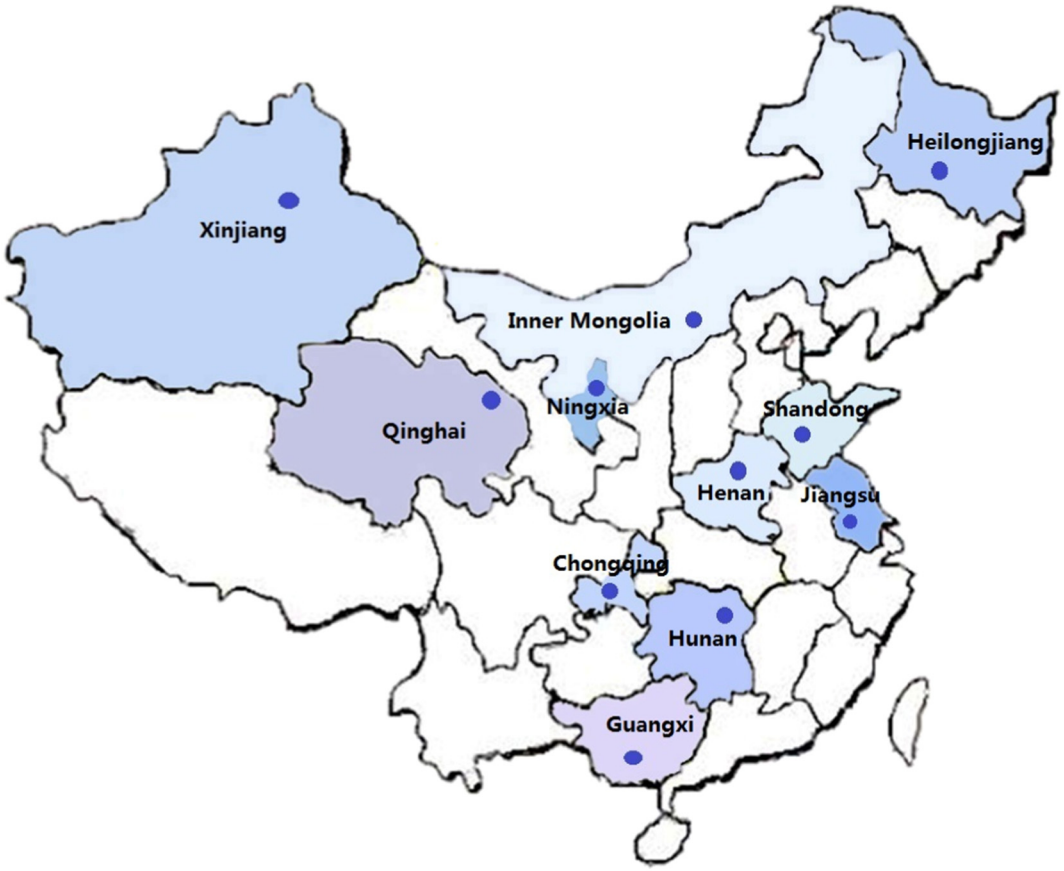

Fig. 1. The source and distribution of the sample.

units of China in a meta-analysis (Lu et al., 2018).

Our study findings suggest that verbal abuse (79.33%) was the most common type of WPV in nurses, followed by verbal threats (70.93%) and physical violence (57.92%). These findings are consistent with other international studies (Kamchuchat, Chongsuvivatwong, Oncheunjit, Yip, & Sangthong, 2008; May & Grubbs, 2002; Park et al., 2015; Sofield & Salmond, 2003). Our prevalence rate on physical violence (57.92%) was similar to the findings reported by Canadian psychiatric nurses (54.2%) (Hesketh et al., 2003). Whereas, a study found that 9.5% of nurses working in Chinese children's hospitals reported physical violence (Li et al., 2017), which is lower than the finding in this study.

Compared with health professionals working in other units (e.g., rehabilitation, occupational therapy, physiotherapy) in psychiatric

Table 1
Socio-demographic characteristics of the nurses' and their perceived anxiety on verbal or/and physical violence.

	Total (n = 1906)		Non-violence cases (n = 301)		Violence cases (n = 1605)		Statistics		
	Mean	SD	Mean	SD	Mean	SD	Z	df	P
Age (year)	32.4	8.6	31.8	8.7	32.5	8.6	−1.86	–[a]	0.063
Clinical experience (years)	11.1	9.3	10.5	9.4	11.2	9.3	−1.89	–[a]	0.058
Month income (RMB)	5210	4986	5246	4982	5022	5017	−1.17	–[a]	0.242
Education years	14.2	2.5	14.4	2.6	14.2	2.4	1.98	–[a]	0.048
	N	%	N	%	N	%	X^2	df	*P*
Male	308	16.2	34	11.3	274	17.1	6.73	1	0.009
Department of psychiatry	1449	76.0	152	50.5	1297	80.8	127.80	1	< 0.001
Married (yes)	1187	62.3	181	60.1	1006	62.7	0.70	1	0.403
Having children (yes)	1526	80.1	248	82.4	1278	79.6	1.25	1	0.264
Shift work rotation	1605	84.2	215	71.4	1207	75.2	0.87	1	0.172
Perceived anxiety level of WPV							94.2	4	< 0.001
Not at all	95	5.0	28	9.3	67	4.2			
Slight	152	8.0	63	20.9	89	5.5			
Moderate	422	22.1	72	23.9	350	21.8			
Severe	309	16.2	44	14.6	265	16.5			
Extremely severe	928	48.7	94	31.2	834	52.0			
Having WPV reporting system	1537	80.6	208	69.1	1329	82.8	27.67	1	< 0.001

WPV = Workplace violence.
No-violence/violence cases: participants who did not/did experience workplace violence.
[a] Mann-Whitney test; Bold values: $P < 0.05$; Bold values: $P < 0.05$;

Table 2
Socio-demographic variables independently associated with verbal or/and physical violence.

Variables	*P* value	Odds ratio	95% CI	
			Lower	Upper
Education years	0.91	1.0	0.94	1.05
Male	0.38	1.20	0.80	1.80
Department of psychiatry	< **0.001**	3.42	2.59	4.51
Perceived anxiety level of WPV				
Not at all	–	1.0	–	–
Slightly	0.10	0.61	0.34	1.09
Moderate	**0.009**	2.05	1.19	3.51
Severe	**0.015**	2.04	1.15	3.62
Extremely severe	< **0.001**	3.21	1.91	5.39
Having WPV reporting system	< **0.001**	1.88	1.39	2.54

Adjusted $R^2 = 0.121$, $P < 0.001$; bolded values: $P < 0.05$. WPV = Workplace violence.

hospitals, nurses who were working in the Units of Psychiatry reported more workplace violence in this study. We speculate that this may be due to three potential reasons. First, patients being treated within the Units of Psychiatry in major psychiatric hospitals usually have severe psychiatric symptoms that may be related to higher levels of violence. Second, inadequate mental health service resources (e.g., understaffing, poor staff-patient ratio, shortage of hospital beds) are commonly reported in Chinese psychiatric services (Zeng et al., 2013) and these overcrowded treatment settings can result in poor communication between nurses and patients. This lack of resources is illustrated by the fact that approximately 173 million Chinese people suffer from a diagnosable psychiatric disorder (Phillips et al., 2009), but there were only 57,000 psychiatric nurses in 2936 mental health services, with approximately 433,000 psychiatric beds in 2015 (Xiang et al., 2018). Finally, a lack of continuing education and training on the prevention and management of WPV is available for frontline nurses (Zeng et al., 2013). The ever growing Chinese population proportionally placed heavy demands on the mental health services in China. This demand may also exacerbate the risk of WPV for nurses.

A significant positive association between WPV and perceived anxiety level of WPV was found in our study, which seems to support previous studies that have suggested a bi-directional relationship exists between WPV and work-related distress (Magnavita, 2014). However, it is also plausible that anxious nurses may be more vigilant and sensitive to WPV, indeed a recent study reported that nurses experiencing anxiety symptoms were more likely to report WPV (Cheung & Yip, 2017).

In recent years, some hospitals in China established a WPV reporting system and health workers are encouraged to report WPV in order to lower the risk of perpetration or victimization, and adopt preventive measures. Interestingly, we found that nurses working in those hospitals with a WPV reporting system reported more WPV than those without. There are numerous potential reasons for this observation, including the possibility that higher levels of WPV are actually prevalent in hospitals with a reporting system (hence the decision was made to introduce the system in the first place) or that nurses working in a hospital with the WPV reporting system are more likely to recognize different aspects of WPV than those working in hospitals without a formal reporting procedure. The levels of WPV reported via the formal reporting system may also underestimate the true prevalence of the problem. Despite the establishment of the WPV reporting system, these victims have little incentive to report incidents because they do not receive additional psychological support and usually receive very little or no compensation resulting from being subjected to verbal and mild forms of physical WPV in Chinese hospitals (Cheung & Yip, 2017). Therefore, many WPV victims are not eager to report WPV incidents to the hospitals for fear of retaliation (Cheung & Yip, 2017) and choose to tolerate the WPV incidents in silence.

Striving towards an anti-WPV solution, the Chinese government released an action plan for health system reform from 2009 that promised to enhance the working conditions of healthcare workers and improve doctor-patient relationships (Chen, 2009). Other measures included increasing security by establishing police stations in major hospitals and a joint statement released by Ministry of Health and Ministry of Public Security declaring a crackdown on violent behaviours, harassment and assaults on health workers. However, results of two surveys cast doubt on the effects of these anti-WPV measures on the attitudes of the public and in reducing the incidence of WPV (Minter, 2012). The first, an online survey examining the public's attitudes towards a tragedy where four clinicians were seriously injured by a patient in Shenzhen, China showed that 65.2% of 6161 respondents selected the option of 'feeling happy' about the incident. More significantly, < 15% of the participants showed empathy towards these clinicians, with only 14% reacting with anger and 6.8% expressing sadness. The second survey conducted in 2010 showed that the number of reported WPV incidents were still very high; approximately 17,000 violent incidents took place in > 70% of public hospitals in China.

Despite the large sample size, good response rate and inclusion of 11 hospitals across China, this study has several limitations that are worthy of consideration. First, this was a cross-sectional survey, therefore causality between WPV and socio-demographic variables cannot be established. Second, only major psychiatric hospitals in 11 provinces were included, thus the findings cannot be generalized to community mental health services. In addition, some factors associated with WPV, such as job titles, job strain and quality of life, were not collected. Finally, consecutive, rather than random sampling, was used in the collaborating hospitals.

Conclusion

In conclusion, verbal and physical WPV against nurses seemed to be a common and severe phenomenon in psychiatric hospitals in China. The negative impact of WPV will have a detrimental effect on nurses' wellbeing, and will also affect the quality of patient care and health-related costs. Policy-makers and stakeholders should develop more proactive, strategic and effective measures to mitigate WPV in Chinese healthcare settings in a timely fashion.

Declaration of Competing Interest

The authors have no conflicts of interest to declare.

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Contributors

Study design: Li Lu, Feng-Rong An, Yu-Tao Xiang. Data collection, analysis and interpretation: Feng-Rong An, Ka-In Lok, Ling Zhang, Yu-Tao Xiang. Drafting of the manuscript: Li Lu, Daniel T. Bressington, Teris Cheung, Yu-Tao Xiang. Critical revision of the manuscript: Gabor S. Ungvari. Approval of the final version for publication: all co-authors.

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