



Original article

Incidence and risk factors of workplace violence against nurses in a Chinese top-level teaching hospital: A cross-sectional study



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ABSTRACT

Purpose: To investigate the incidence of workplace violence involving nurses and to identify related risk factors in a high-quality Chinese teaching hospital.

Methods: A cross-sectional study design was used. The final sample comprised responses from 1831 registered nurses collected with a whole-hospital survey from June 1 to June 15, 2016. The demographic characteristics of the nurses who had experienced any form of violence were collected, and logistic regression analysis was applied to evaluate the risk factors for nurses related to workplace violence.

Results: Out of the total number of nurses surveyed, 904 (49.4%) nurses reported having experienced any type of violence in the past year. The frequencies of exposure to physical and non-physical violence were 6.3% (116) and 49.0% (897), respectively. All the incidence rates of violence were lower than those of other studies based on regional hospitals in China and were at the same level found in developed countries and districts. Binary logistic regression analysis revealed that nurses at levels 2 to 4 and female nurses in clinical departments were the most vulnerable to non-physical violence. For physical violence, the two independent risk factors were working in an emergency department and having 6–10 years of work experience.

Conclusions: Workplace violence directly threatens nurses from high-quality Chinese teaching hospitals. However, the incidence of WPV against nurses in this teaching hospital was better than that in regional hospitals. This study also provides reference material to identify areas where nurses encounter relatively high levels of workplace violence in high-quality Chinese teaching hospitals.

1. Background

Workplace violence (WPV) is a serious worldwide concern, especially for health care professionals when compared with workers in other industries (Harrell, 2011; Shi et al., 2017). Violence in the health care sector harms both patients and health care professionals and causes enormous economic losses (Hsieh, Chen, Wang, Chang, & Ma, 2016; Shi et al., 2015; Speroni, Fitch, Dawson, Dugan, & Atherton, 2014). Victims of WPV show signs of anxiety, depression, and low efficiency in their work performance, which may decrease the quality of the service that they provide (Farrell, Bobrowski, & Bobrowski, 2006; Merez, Rymaszewska, Moscicka, Kiejna, & Jarosz-Nowak, 2006). Among health care professionals, nurses who have direct contact with patients face numerous risks related to WPV. Therefore, it is important to recognize risk factors that can be used to reduce the incidence of WPV against nurses.

China spends only 2% of the total worldwide health expenditures, yet it has 22% of the world's population; this causes serious shortages of medical resources (Yueju, 2014). Currently, Chinese health care professionals are known to work in very dangerous medical workplace circumstances. Incidents involving major injuries to doctors and nurses appear in headlines each year (Wu, Hesketh, & Zhou, 2015; Xu, 2014).

Studies of WPV have commonly divided it into two forms, namely physical violence and non-physical violence (Jiao et al., 2015; Wei, Chiou, Chien, & Huang, 2016). Physical violence refers to any type of violence involving physical contact. Non-physical violence includes threats, intimidation and verbal violence or verbal sexual harassment as described in a previous study (Spector, Zhou, & Che, 2014).

Previous reports have revealed that the incidence of physical violence among Chinese nurses ranges from 7.8% to 12.6% of all nurses (Jiao et al., 2015; Xing et al., 2015; Zhao et al., 2016). For incidents involving non-physical violence, the incidence numbers ranged from

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69.2% to 71.9% of all nurses (Jiao et al., 2015; Zhao et al., 2016). The incidence in developed countries and districts ranged from 42.2% in the UK to 49.6% in Taiwan, and all incidence rates in developed countries and districts were lower than the rate in China in recent years (Luciani et al., 2016; Potera, 2016; Tee, Uzar Ozcetin, & Russell-Westhead, 2016; Wei et al., 2016). China is a developing country, with large differences among different levels of hospitals in terms of the medical facilities available, the technical expertise of the hospital, the quality of service, and the compliance of patients to the requests and orders of medical personnel. Because the currently available data related to Chinese nurses were all collected at regional level hospitals (Wei et al., 2016; Xing et al., 2015), they cannot provide a comprehensive overview of the entire Chinese medical environment.

In addition, identifying the population of nurses in a teaching hospital that is at greatest risk of experiencing WPV can provide reference information for decision makers, allowing them to direct the appropriate measures to the correct people. Previous studies related to the incidence of WPV involving Chinese nurses varied from one district to another and according to the different levels of the hospitals. Tiruneh et al. found that independent factors associated with WPV included “age, with older workers being more prone to experiencing WPV”, “single marital status” and “working in a male patient ward”. Additional factors included “relatively understaffed work shifts” and “having a history of experiencing WPV” (Tiruneh et al., 2016). Moreover, another study identifying factors associated with WPV for nurses included the factors “age, with younger workers being more prone to experiencing WPV”, “working with elderly patients (over 65 years old)” and “working in emergency rooms”, “outpatient units” and “intensive care units (ICUs)” (Hahn et al., 2013). No data or research was found that explored the relationship of risk factors among nurses at top-level teaching hospitals in China; the status of WPV may vary based on the different levels of hospitals.

This study selected one of the best hospitals in China and investigated and analyzed the incidence and risk factors of WPV among nurses. The findings provide information about the status of WPV against nurses in top-level hospitals in China and suggestions for the direct implementation of measures designed to protect the high-risk nurse population.

2. Methods

2.1. Data sources and participants

This cross-sectional study was conducted by the general survey method in all units of the Qilu Hospital using confidential, written surveys submitted anonymously between June 1 and 15, 2016. Qilu Hospital is a Class A tertiary teaching hospital affiliated with Shandong University. Qilu Hospital was 24th in the rankings listed by the Hospital Management Institute, Fudan University. The hospital employs > 4000 health care professionals of which 50% are nurses. All frontline, certified registered nurses in Qilu Hospital who had worked for least one year were identified as the respondents. The exclusion criteria including nurses “on holiday”, “who had worked for a period of less than one year” and “who did not want to cooperate with this investigation”. Survey responses were received from June 1, 2016 to June 10, 2016. All the certified nurses were requested to return the completed questionnaires in a sealed envelope to collecting sites at the hospitals. There were no financial or non-financial incentives for survey participation, but in each department, the charge nurse was asked to supervise and urge each participating nurse to complete and return the survey.

2.2. Measurements

In the present study, an anonymous, self-reported questionnaire in Chinese was developed and modified by eight healthcare-related experts based on a survey used in a previous study (Wei et al., 2016). Prior

to using the questionnaire, feedback was collected after 50 fully qualified nurses completed the survey, and the questionnaire was modified as needed. Finally, Cronbach's alpha coefficient was 0.870 for all questions, and the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.825. The questionnaire had four sections: (1) demographic and workplace data, (2) questions about experiences related to WPV within the preceding year, (3) questions about physical and non-physical violence (including verbal abuse, threats, and verbal sexual harassment) within the preceding year, (4) questions about sources of WPV classified as “patients,” “relatives and visitors of patients,” and “colleagues within the same department,” and “colleagues from other departments”. In addition, a multiple-choice question, “what do you think causes WPV?” was used to clarify respondents' opinions on the causes of WPV. The reasons on the multiple choice list included “negative media information,” “mistakes by nurses,” “nurse–patient miscommunication,” “treatment is not satisfactory,” “did not meet all of the patients' requirements for treatment,” “transference of conflict between physician and patient,” “not satisfied with the high cost of medical expenses,” “treatment took too long/tedious treatment process,” “patient death,” “time spent waiting for treatment was too long,” and “disagreement with colleagues.”

The scope of the survey covered demographic characteristics of the nurses, work experience, and experiences of WPV in the past year. In this questionnaire, WPV was categorized into the two aforementioned types, physical and non-physical violence. Binary logistic regression analysis was applied to identify the independent risk factors for WPV experienced by nurses.

2.3. Statistical analysis

The demographic characteristics of the participants were collected by EpiData Software 19.0 (Odense, Denmark). After moving the data into SPSS 17.0 (IBM, USA), a chi-square test was used to estimate the distribution of WPV based on different characteristics. In addition, binary logistic regression analysis was used to identify the characteristics that were individually associated with WPV (any violence, physical and non-physical violence) among nurses. Significant factors were subsequently modeled using multivariate logistic regression analyses to estimate the odds ratios (ORs) of nurses' WPV experience, and 95% confidence intervals (CI) for the ORs were calculated. Factors with $p < 0.05$ in the logistic regression analysis were considered as independent risk factors for WPV.

3. Results

In total, 1983 questionnaires were collected from 2116 nurses, representing a questionnaire recovery rate of 93.7%. Of those, 1831 of the returned and completed questionnaires were considered valid, with a valid response rate of 92.3%.

3.1. Demographic characteristics of the victims of WPV

The average age of participants was 30.9 years (range 22–55; Table 1) with 68.4% of them between 26 and 35 years old, making up the main nursing workforce in this hospital. Of the 1831 participants, 45% were single, and 87% were female. The nurses had an average of 5.6 years of work experience. In terms of education, 88.2% of the participants possessed a bachelor's degree and above. In addition, a small majority of them (51.8%) had senior professional titles. Of all participants, 15.7% and 21.5% of the nurses worked in the medical and surgical departments, respectively.

3.2. Frequency distributions of WPV among nurses

Among the 1831 participants, 904 nurses (49.4%) had experienced at least one episode of any type of violence in the past year (Table 1). Of

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