

TITLE PAGE

Title: Workplace violence against nurses: Rates and its determinants

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ABSTRACT

Background: There has been increasing global concern about violence against women. Nursing career, comprising female as a majority, always confronts people in times of illness or discomforts which can induce severe stress and violence. However, little is known on workplace violence (WPV) against nurses.

Objective: To investigate the level of WPV among major categories of nurses in Thailand and to determine factors that affect the WPV.

Methods: This study is part of the first wave survey of the Thai Nurse Cohort Study conducted in 2010 involving 18,765 nationally representative sample of RNs. Data collection was done via self-administered, mailed questionnaires. This paper included 17,752 RNs who worked in nursing career in the previous 12 months. RNs who reported experiencing either physical or non-physical violence at the workplace during the previous 12 months was classified as experiencing WPV. Multiple logistic regression was used for data analysis.

Results: Of 17,752 nurses, 96.7% were female, 77.3 % worked in hospitals, with a mean age of 43.6 ± 9.5 years old (range: 21-65). The rate per 100 nurses per year for WPV was 20.0 (95%CI: 19.2 -20.8) and for serious WPV, determined by WPV with job absence (JA), was 1.6 (95%CI: 1.4-1.9). Factors significantly, $p < 0.001$, associated with WPV included experiencing musculoskeletal disorders (OR = 1.95; 95%CI: 1.74-2.18), working more than 12 hours per day (OR = 1.44; 95%CI: 1.28-1.62), earning sufficient income (OR = 1.31; 95%CI: 1.16-1.48), working at night (OR = 1.24; 95%CI: 1.10-1.39), and younger age (OR for every 10 years younger = 1.27; 95%CI: 1.18-1.37).

Conclusions: Thai RNs were at substantial risk for WPV. To alleviate the problem, high attention should be paid to nurses with musculoskeletal disorders, long-working hours or working at night, insufficient income, and young age.

Key words: cohort study, nurse, violence against women, workplace violence.

INTRODUCTION

Workplace violence (WPV) is one of the main concerns of health care providers. Over the past several years, WPV has been increasingly considered as a key problem in occupational health worldwide¹⁻⁴. Rate of WPV varies across studies, from 6% to 71% for physical violence and 32% to 92% for non-physical violence¹⁻⁷. Amongst health personnel, nurses are in one of the highest risk group^{2, 6-10}. A survey from the United Kingdom showed that staff and enrolled nurses were the most vulnerable group for WPV, at a rate of 43.4% compared to the other health professions⁹. In Thailand, there has been a health care reform during the last 10 years, thereby, rights of the patients have been promoted and the patients' health care providers' relationship style has been changed¹¹⁻¹². This situation may induce more WPV among health care workers, nurses in particular. Negative effects of the violence toward nurses include anger, fear, depression, anxiety, absence from work, sick leave, reduction in productivity, error increment, increased willingness to quit nursing or shift to an alternative careers^{2-3, 7, 13-16}, augmented consumption of alcohol and cigarette¹³, and financial cost¹⁷. For instance, a study, illustrated severe effect on WPV, conducted in Turkey in 2005, found that out of 505 nurses, 10% considered committing suicide as a solution, 41.6% were seriously thinking about quitting job and changing¹⁵. There were studies on WPV among health personnel and nurses in Thailand, all were small scale and not nationally representative sample^{4, 18-19}. A number of studies regarding violence globally but few were from developing countries, in particular from Asia²⁰.

MATERIALS AND METHODS

Study design

This paper is part of the Thai Nurse Cohort Study (TNCs). The TNCs was planned as a 20-year longitudinal cohort study. In 2009 the base-line survey was performed. A random sample of registered nurses (RNs) who held nursing licenses granted by Thailand Nursing and Midwifery Council (TNMC) as of 2008 were surveyed by mailed-questionnaires and the respondents were enrolled as cohort members. The first wave of the study was carried out as a cross-sectional survey. The sampling method was stratified random sampling with probability proportional to size of nurses in each 10-year age intervals. This paper involved a total of 18,756 members of the cohort then excluded those nurses who did not work in the previous 12 months.

Study outcome

Workplace violence was defined, according to the joint program of International Labor Organization, International Council of Nurses, World Health Organization and Public Services International (ILO/ICN/WHO/PSI), as physical violence relating to terms such as assaulting, attacking, or abusing by means of physical force against another person or group which includes beating, kicking, slapping, etc.^{6, 21}. Non-physical violence refers to intentional behavior against another person or group that effects mental, spiritual, moral and social development, proverbially, verbal abuse bullying/ mobbing harassment and threats^{6, 21}. The primary outcome of this study was experiencing either physical or non-physical violence at the workplace during the previous 12 months reported by the study participants. We called this as a WPV of all types. Sub-categories of WPV, i.e., physical or non-physical WPV and WPV with or without job absence (JA), were the secondary outcomes for exploratory purposes. The latter, in particular, is an indication of serious WPV.

Statistical analysis

Demographic characteristics of the participants were described using frequency and percentage for categorical data and mean and standard deviation for continuous data. The rate was calculated using the number of nurses who reported WPV with or without JA, at least one occasion during the past 12 months as the numerator and the total number of nurses who responded to the questionnaire as the denominator. The 95% confidence interval (CI) of the rate was computed based on normal approximation to binomial distribution. Probability sampling weight was used to account for the sampling design of the study. This method was also used to calculate the rate of WPV with JA. To investigate factors that affect WPV, odds ratios (ORs) and their 95% confidence intervals (95% CIs) were estimated using multiple logistic regression for survey sampling. This analysis was adjusted for baseline variables that were considered biologically and sociologically relevant or which showing a univariate relationship with outcomes such as age, gender, job characteristics (e.g. non-service nurses, worked at nighttime, workload), previous and current illnesses such as musculoskeletal disorder (MSD), neurological illnesses, cardiovascular diseases, etc. All analyses were performed using Stata version 11.0 (StataCorp, College Station, TX). All test statistics were two-sided and a p-value of less than 0.05 was considered statistical significant. This project was approved by the Human Research and Ethics Committees of the Ministry of Public Health of Thailand.

RESULTS

A total of 142,699 RNs who held nursing licenses and were listed in TNMC database in 2008 were the population of this study. From the 18,756 RNs who randomly selected, responded to the survey, and agreed to participate as members of the TNCS, 1,004 were excluded for this paper due to being unemployed in the previous 12 months, hence 17,752 RNs were included in the analysis (Fig. 1).

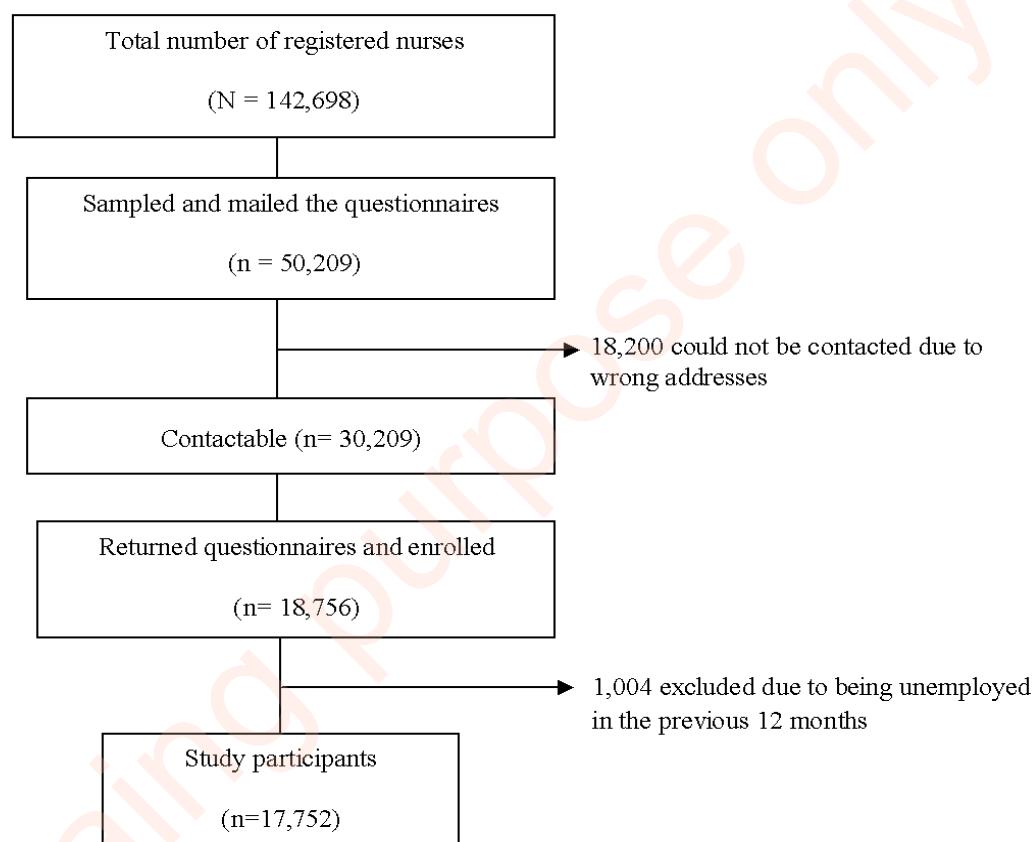


Fig. 1. The inclusion flow chart

Demographic Characteristics

Of the 17,752 RNs, almost all of them, 96.7%, were female, with a mean age of 43.6 ± 9.5 years old (ranged: 21-65) (Table 1). They were mainly married (60.8%), currently employed in nursing care services (62.8%), and worked as government officers, also known as civil servants, (82.0%).

Table 1. Demographic characteristics presented as percentage unless specified otherwise

Characteristics	Total (n=17,752)	Types of workplace		
		Hospitals (n=13,713)	Health Centers (n=1,505)	Others (n=2,534)
Age (years)				
20 - 29	11.3	12.7	8.1	5.8
30 - 39	24.0	24.8	33.1	13.9
40 - 49	36.1	36.7	42.3	29.0
50 - 54	26.7	24.9	16.2	42.6
60 or greater	2.0	0.9	0.4	8.8
Mean \pm standard deviation	43.5 \pm 9.6	42.8 \pm 9.5	41.8 \pm 8.0	48.4 \pm 9.6
Range (Min:Max)	20.5 - 65.4	20.5 - 65.0	22.8 - 61.9	22.4 - 65.4
Gender				
Male	3.3	2.9	3.5	5.6
Female	96.7	97.1	96.5	94.4
Highest education attainment				
Bachelor's degree	81.3	84.3	91.9	58.9
Master's degree	16.8	14.6	7.3	34.2
Doctoral degree	0.8	0.1	-	5.3
Others	1.1	1.0	0.8	1.6
Marital status				
Single	30.8	33.1	16.2	27.3
Married	60.8	59.3	74.3	61.1
Divorced/ Widowed	8.4	7.6	9.4	11.6
Working area according to region of Thailand				
Bangkok	15.9	15.2	11.8	22.5
North	20.6	21.5	19.5	16.1
Northeast	23.1	22.0	33.1	22.8
Central	23.6	28.7	20.6	25.9
South	12.8	12.6	15.3	12.6
Currently major work position				
Service nurses	62.8	67.7	75.2	28.0
Nurse lecturers/ Technical officers/ Researcher	5.4	0.5	4.8	33.0
Administrators	24.7	27.6	6.8	19.3
Others	6.7	4.1	13.5	17.6
Unemployed	0.32	0.02	0.07	2.1
Working status				
Government officers (civil servants)	82.0	82.9	93.6	69.7
Government employees	3.9	4.3	2.6	2.7
State enterprises employees	0.5	0.4	0.1	1.4
Private employees	7.6	7.7	1.3	11.3
Business owners	0.7	0.04	0.8	4.1
Others	5.3	4.8	1.5	10.7

Rate of workplace violence

Rate per 100 per person per year was 20.0 (95%CI: 19.2 - 20.8) for WPV of all types (Table 2). In other words, it was expected that one fifth of RN experienced any types of WPV in a year. However, few violence lead to job absence. The rate of WPV with JA was only 1.6 (95%CI: 1.4 - 1.9).

By type of WPV, the highest rate was the non-physical WPV (19.3; 95%CI: 18.6 - 20.1) followed by the physical WPV (2.3; 95%CI: 2.0 - 2.7).

The rate of WPV was similar across types of health care facilities- hospitals, health centers, and other workplaces such as universities, nursing colleges, and self-employed. Severity of WPV, indicated by being absence from work as a consequence, was higher in non-physical than that of physical WPV victims (1.4 vs 0.2 per 100 per years, respectively). In addition, the rate of WPV of all types, with JA, was higher in nurses who worked in non-service sectors than those who worked in service sectors such as hospitals and health centers (3.2 vs 1.5 vs 1.9 per 100 per years, respectively).

Table 2. Rates per 100 per person per years of workplace violence and their 95% confidence intervals

Type of workplace violence	Total (n=17,752)	Types of workplace		
		Hospitals (n=13,713)	Health Centers (n=1,505)	Others (n=2,534)
Workplace violence of all types	20.0 (19.2-20.8)	20.1 (19.2-21.0)	18.3 (16.0-20.8)	20.7 (18.5-23.1)
Without job absent	15.8 (15.1-16.6)	16.1 (15.3-16.9)	13.7 (11.7-16.1)	15.6 (13.6-17.9)
With job absent	1.6 (1.4-1.9)	1.5 (1.2-1.7)	1.9 (1.2-3.0)	2.6 (1.8-3.8)
Non-physical workplace violence	19.3 (18.6-20.1)	19.3 (18.5-20.2)	18.1 (15.9-20.7)	20.3 (18.2-22.7)
Without job absent	15.0 (14.3-15.7)	15.2 (14.4-16.0)	13.3 (11.3-15.7)	15.1 (13.1-17.4)
With job absent	1.4 (1.2-1.7)	1.2 (1.0-1.5)	1.9 (1.2-3.0)	2.5 (1.8-3.8)
Physical workplace violence	2.3 (2.0-2.7)	2.7 (2.3-3.1)	0.3 (0.1-0.8)	1.4 (0.8-2.4)
Without job absent	1.7 (1.4-2.0)	2.0 (1.7-2.4)	0.06 (0.01-0.3)	0.4 (0.01-1.3)
With job absent	0.2 (0.09-0.2)	0.2 (0.01-0.3)	0.08 (0.01-0.5)	0.2 (0.02-0.9)

Factors associated with workplace violence of all types with or without job absent

The strongest factor that associated to WPV of all types was having MSD. That is, nurses who experiencing work-related musculoskeletal disorders were 1.9 times the risk of the WPV compared to who did not (OR = 1.95; 95%CI: 1.74 - 2.18; $p < 0.001$) (Fig. 2). The second strongest factor was working more than 12 hours /day during the previous 30 days (OR = 1.44; 95%CI: 1.28 - 1.62; $p < 0.001$). Others factors that were highly significant factors, $p < 0.001$, associated with the WPV included working at night, insufficient income, and young age.

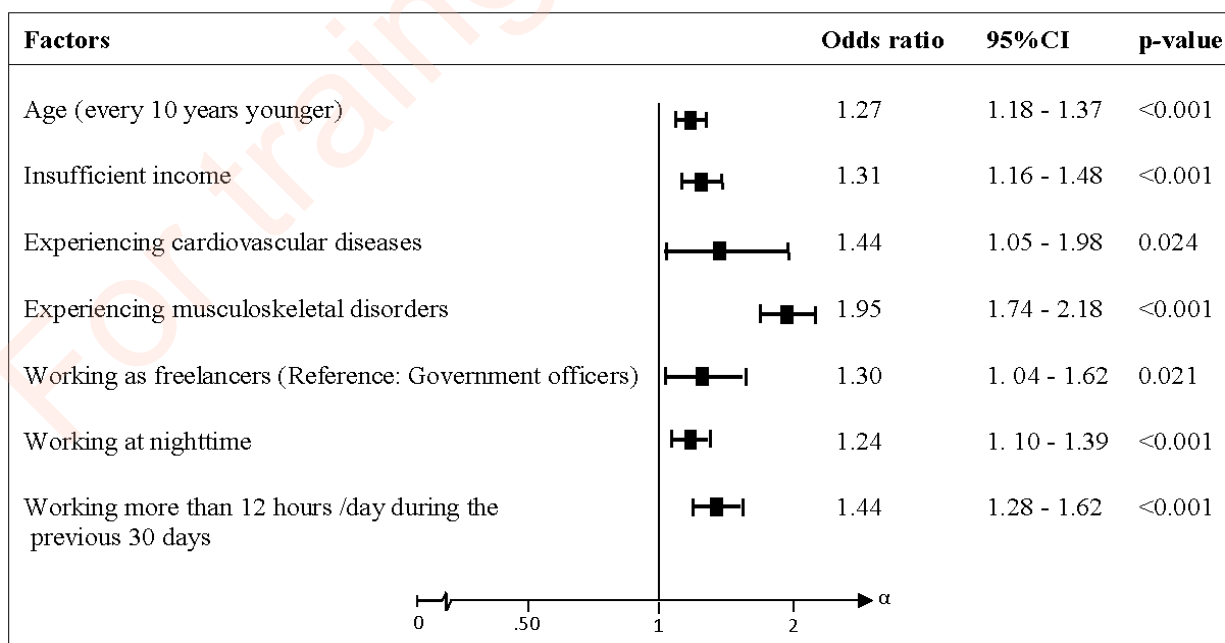


Fig. 2. Factors affecting workplace violence of all types, with or without job absence, presented as odds ratio adjusted for gender, marital status, job type, current working status, having second job, experiencing neurological illnesses, types of working institution, and working area, using multiple logistic regression

Factors associated with workplace violence of all types and with job absence

For serious WPV, determined by WPV with job absence, nurses who experienced neurological illnesses were 2.8 times the risk of WPV of all types compared to who did not (OR = 2.76; 95%CI: 1.51 - 5.05; $p = 0.001$) (Fig. 3). MSD remained a strong predictor, i.e., nurse who had job caused MSD were 2 times the risk of WPV of all types compared to who did not (OR = 1.97; 95%CI: 1.31 - 2.94; $p = 0.001$).

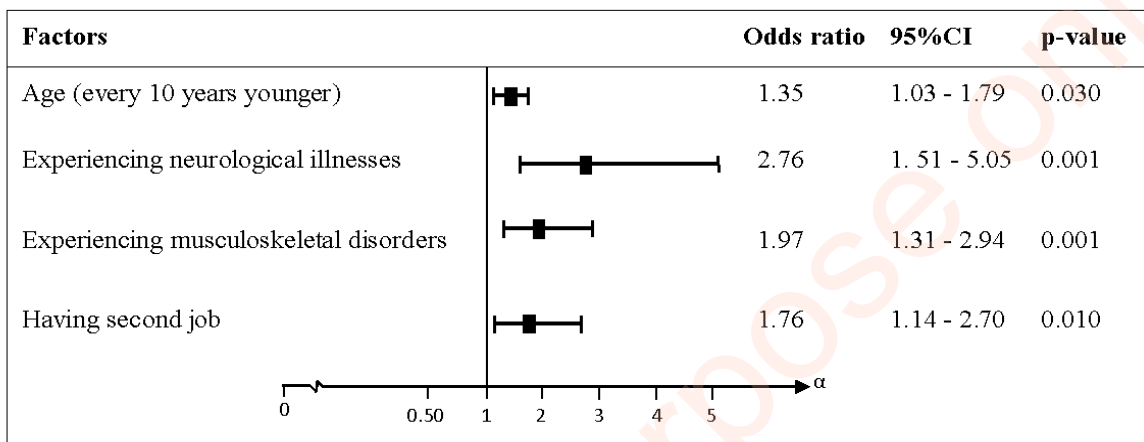


Fig. 3. Factors affecting workplace violence of all types with job absence, presented as odds ratio adjusted for gender, marital status, job type, current working status, experiencing cardiovascular diseases, types of working institution, and working area, using multiple logistic regression

Factors associated with non-physical workplace violence

MSD was predominantly the strongest factor associated with non-physical WPV, i.e., it was two folds the risk of WPV of all types compared to who did not (OR = 1.93; 95%CI: 1.72 to 2.17; $p < 0.001$) (Fig. 4).

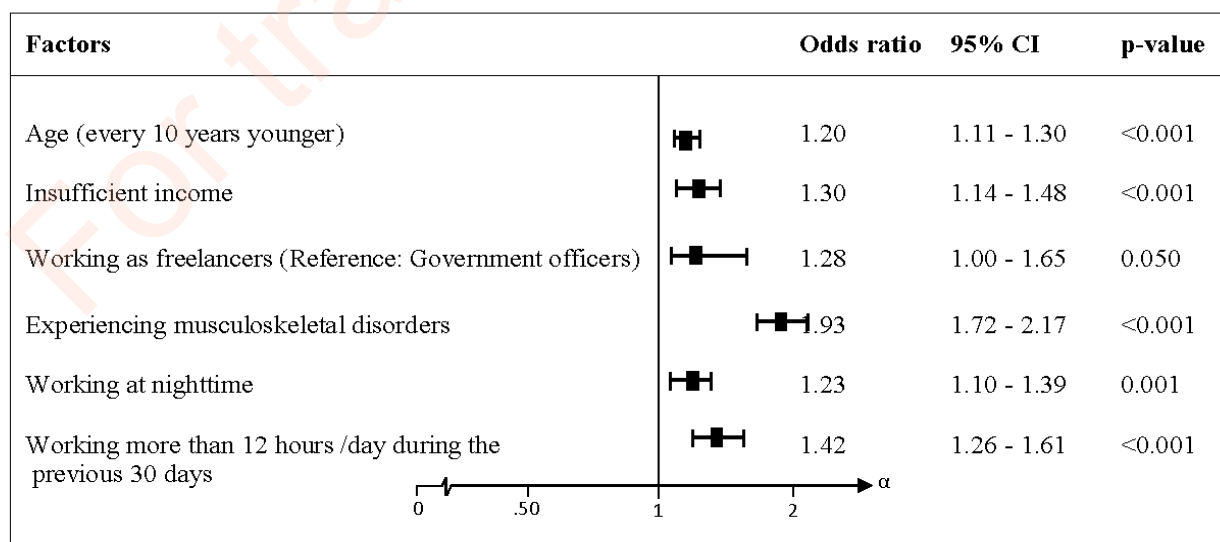


Fig. 4. Factors effecting non-physical workplace violence with or without job absence, presented as odds ratio adjusted for gender, marital status, job type, current working status, having second job, experiencing neurological illnesses, types of working institution, and working area, using multiple logistic regression

DISCUSSIONS

This study investigated the magnitude of workplace violence (WPV) among registered nurses (RNs) in Thailand and determined factors that affects it. The findings illustrated that Thai RNs were at a substantial risk for WPV. Factors that are highly significantly associated with the WPV included having musculoskeletal disorders, long-working hours or working at night, insufficient income, and young age.

The rate of 20 per 100 per year for nurses in experiencing WPV of all types was substantial. Nurse is an occupation that had long been facing shortages globally and comprising mainly female. Unfortunately, about one fifth of them would be expected to face the WPV problem in a year. While there are several categories of nurses, this study documented the rate of WPV exclusively among one of the highest recognition category- the registered nurses. This is the first report ever, regarding this occupational threat, obtaining from a nationally representative sample of registered nurses of Thailand. It documented the WPV among an occupation that female comprising the majority derived from the largest cohort study of a developing country and being the first nurse cohort in Asia.

With regard to types of WPV, this study reported the higher rate in non-physical than the physical WPV which consistent with other studies^{4-5, 7, 18-19, 22-23}. The overall rate was similar across type of the workplace. However, serious WPV, indicated by JA as a consequence, was found at a higher rate among nurses who worked in non-service sectors than those who worked in service sectors such as hospitals and health centers. This might be due to that nurses who worked in non-health sectors were able to stop their jobs with the less effect to colleagues or patients while nurses who worked in health care facilities were difficult to do so.

Compared to previous studies in Thailand^{4, 18-19}, the rate of WPV among RNs in our study is lower. Possible reasons could be due to the difference in the data collection methods. In the TNCS, the data was based on self-reporting, via mailed questionnaire, without any probing which can be done in face-to-face interview being conducted in those studies. Thus, the rate reported in this study could be considered as being conservative or under estimated. In addition, none of the studies conducted in Thailand were done prospectively. With the cross-sectional design, nurses who had leaved their careers were not included. The rate would then be much under-estimated if the reasons of the leaving were due to WPV. The TNCS tackled this issue in subsequent papers as it followed several thousands of RNs prospectively.

Relationship between reported of having MSD and WPV was found to be the most obvious one even after accounted for effects of various factors. Reasons behind this could be explained by a study which found that MSD was a major health problem of nurses and caused anxiety and stress which easily induce violence²⁸.

Working characteristics were one of important factors found to be associated to the WPV in this study, in particular, work more than 12 hours /day in previous 30 days and worked at night time. This is consistent with most recent studies^{1, 4, 27}. Nurses reported of having insufficient income or having extra jobs, which was found to be another important factor, might be also explained by that the WPV was the consequence of stress and fatigue caused by these working conditions.

This study demonstrated that the more aged nurses are at a lower risk of WPV which was consistent with several studies^{1, 4, 18, 24-27}. It was particularly true in Thai culture that the older were more respectful than the younger.

With concerning to socio-cultural factors, we accounted this effect by inclusion of a covariate in the model which is the working area of four regions of Thailand and Bangkok metropolitan. Nonetheless, we could not find association between this factor and any types of WPV.

We acknowledged the limitation of this study for being derived from cross-sectional data collection. Reported of WPV was based solely on the respondents' recalls and perception of the meaning of "workplace violence". Some important data was not available at baseline, for example, the information from perpetrators and job stress. Further studies investigating WPV in a prospective and longitudinal manner are needed.

In conclusion, registered nurses in Thailand were at considerable risk for WPV in the course of their careers, mainly non-physical WPV. Preventive actions, policy and practical guidelines to help RNs from this occupational threat should focus on nurses with musculoskeletal disorders, long-working hours or working at night, insufficient income, and young age. It was eventually hope that the findings inform RNs and healthcare

workforce planners as well as pave the way to find effective solutions to minimize the WPV against nurses. Consequences of the WPV and its roles on nursing turnover should also be further investigated.

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