International Journal of Nursing Studies 94 (2019) 120–130

Contents lists available at ScienceDirect

International Journal of Nursing Studies

journal homepage: www.elsevier.com/ijns

Patient violence and health professionals' occupational outcomes in China: A time-lagged survey study

Yujie Zhan[a], Su Kyung Kim[a], Le Zhou[b], Bo Xie[c], Yuntao Li[d,*], Bei Wen[e,*], Lisa Nie[c]

[a] Wilfrid Laurier University, Canada
[b] University of Minnesota, United States
[c] The University of Texas at Austin, United States
[d] Department of General Surgery, The Third People's Hospital of Chengdu, The Second Affiliated Hospital of Chengdu, Chongqing Medical University, Qinglong Street 82, Chengdu, Sichuan, People's Republic of China
[e] Department of Otorhinolaryngology, Sichuan Academy of Medical Sciences & Sichuan Provincial People's Hospital, Chengdu, Sichuan, People's Republic of China

ARTICLE INFO

Article history:
Received 7 April 2018
Received in revised form 23 November 2018
Accepted 26 November 2018

Keywords:
Patient violence
Occupational turnover intention
Occupational word-of-mouth communication
Disappointment

ABSTRACT

Objective: To examine the prevalence of patient violence in China and the association between patient violence and Chinese health professionals' felt disappointment with their occupations, occupational turnover intention, and word-of-mouth communication.
Methods: Data were collected from a convenience sample of 199 Chinese doctors and nurses in the summer of 2016 using two surveys. First, participants reported their experience of patient violence (i.e., physical and non-physical violence). Two weeks later, participants rated their disappointment, occupational turnover intention, and negative occupational word-of-mouth communication. Using path analysis, we examined the mediating role of disappointment in explaining the association between patient violence and health professionals' occupational turnover intention and word-of-mouth communication.
Results: On average, health professionals in the present sample experienced non-physical violence once or twice per month. Non-physical violence was positively related to feeling disappointed with one's occupation, which was in turn positively related to occupational turnover intention and negative word-of-mouth communication. Physical violence was experienced at a much lower rate, and was not correlated with either occupational outcome.
Conclusions: Patient violence found in this study was prevalent, especially in terms of non-physical violence. The rates of patient violence were lower than those in previous studies conducted in China, reflecting potential differences between the present study and earlier studies in study sites, sample composition, measurements, and timing of studies. Nonetheless, our findings show that patient violence can be related to health professionals' intention to leave their occupation and negative word-of-mouth communication regarding their occupation. These findings call for interventions to reduce health professionals' turnover, improve their work conditions and quality-of-life, and subsequently improve the patient-provider relationship and the quality of patients' care.

What is already known about the topic?

- Health professionals, particularly nurses, experience high turnover rates and costs worldwide.
- Over the past two decades, workplace violence against doctors and nurses from patients and their relatives/friends has risen rapidly to become prevalent in the healthcare industry in Mainland China.

What this paper adds

- Patient violence, particularly non-physical patient violence, is positively related to health professionals' occupational turnover intention and negative word-of-mouth communication regarding their occupation, mediated by felt disappointment with their occupation.

* Corresponding authors.
E-mail addresses: yuntaodrli@126.com (Y. Li), 1545366586@qq.com (B. Wen).

https://doi.org/10.1016/j.ijnurstu.2018.11.010
0020-7489/

- This detrimental impact of patient violence on occupational turnover intention and word-of-mouth communication extends our understanding of why patient violence harms individual health professionals as well as healthcare organizations.
- Patient violence in China is prevalent and requires serious attention, although the prevalence rates seem lower than what previous studies have reported.

1. Introduction

Health professionals, particularly nurses, experience high turnover rates and costs worldwide (Duffield et al., 2014; Hayes et al., 2012; Jones et al., 2015). Violence from patients and their relatives/friends against health professionals is a major factor contributing to health professionals' stress, lowered job dissatisfaction, and, subsequently, turnover (Al Maqbali, 2015). In a systematic review, Hills and Joyce (2013) found that, in medical practice settings worldwide, 15–75% of health professionals reported having experienced verbal aggression and 2–29% reported having experienced physical aggression in the previous 6–24 months. Worldwide, nurses have typically been the health professionals most likely to be exposed to violence and aggression from patients and their families/friends (Brown and Burns, 2013; Child and Mentes, 2010; Heckemann et al., 2015; Martinez, 2016; Wei et al., 2016), although doctors (particularly family medicine practitioners) in developed countries are not exempt from workplace violence (Hills and Joyce, 2013; Spector et al., 2014).

In Mainland China, workplace violence against doctors and nurses from patients and their relatives/friends has risen rapidly over the past two decades. Cross-sectional studies conducted in various regions across China have documented the prevalence of physical violence in the workplace (He and Qian, 2016; Jiao et al., 2015; Kwok et al., 2006; Li et al., 2017; Shi et al., 2015; Shi et al., 2017; Sun et al., 2017; Wen et al., 2016; Wu et al., 2014a,b; Wu et al., 2014a,b; Xing et al., 2015, 2016; Yao et al., 2014; Zhang et al., 2017a, b). The brutality of this violence has also been documented. In particular, during 2003–2013, 101 violent incidents against Chinese doctors and nurses were reported. Twenty-three of these incidents resulted in the death of 22 doctors and 2 nurses; the remaining 78 incidents involved health professionals' serious physical injuries (Pan et al., 2015). Less severe forms of violence, such as treating health professionals disrespectfully or in a verbally aggressive manner, are even more frequent.

The key reasons for the rise of patient violence in Chinese healthcare settings have been explored quite extensively. These include a lack of oversight and law enforcement, media misrepresentation, imbalanced healthcare resource distribution, heavy workload for health professionals coupled with low compensation, a lack of training doctors and nurses to develop conflict resolution skills, inadequate health insurance coverage for patients, and revenue-driven practices that lead to patient mistrust in doctors and nurses ("Violence," 2014; Yao et al., 2014; Zhang et al., 2017a,b; Zhang et al., 2016). In China, the clinician-patient relationship has evolved from a lack of trust to an upsurge in conflicts leading to physical violence (He and Qian, 2016; Peng et al., 2016; Sun et al., 2016; Tucker et al., 2015). A handful of studies have explored the consequences of such violence on healthcare workers' quality of life (Lin et al., 2015; Wu et al., 2014a; Zeng et al., 2013) as well as rates of burnout and medical mistakes (Wen et al., 2016). To date, however, little research has been conducted to examine the consequences of such violence on Chinese doctors' and nurses' occupational outcomes (i.e., employees' emotions, attitudes, behaviors, and decisions related to their occupation or profession).

Patient violence has also been examined by organizational behavior researchers (Spector et al., 2014). This line of research places patient violence in the larger theoretical and conceptual context of understanding "people work" (e.g., the work done by health professionals or service employees in general), and argues that such work can expose workers to risks of being mistreated by individuals outside of their organizations (e.g., patients, customers) (Diefendorff et al., 2011; Grandey et al., 2012; LeBlanc and Kelloway, 2002; Zhan et al., 2016). Studies have found that health professionals who interact with patients and/or their relatives/friends repeatedly often experience violence from those individuals (Diefendorff et al., 2011; Grandey et al., 2012). Research in customer-service settings (Zhan et al., 2016) or healthcare settings (LeBlanc and Kelloway, 2002; Shi et al., 2017; Wu et al., 2014a) has focused largely on the detrimental impact of workplace violence on employees' job attitudes (e.g., job satisfaction). But in this line of research too, relatively little attention has been paid to the relationship between patient violence and health professionals' occupational outcomes that concern their attitudes and behaviors regarding their profession and career rather than a specific employer or a specific position.

In the present study, we extend theories, concepts, and measurements developed in the organizational behavior literature to the healthcare industry within the Chinese context. We examine patient violence in a sample of Chinese health professionals (doctors and nurses), focusing on its prevalence in the Chinese context and its relationship with Chinese health professionals' occupational outcomes.

1.1. Patient violence and its outcomes

Because patient violence is a specific form of workplace violence, we define patient violence as efforts by patients and/or patients' relatives/friends to harm health professionals (Neuman and Baron, 1998). Consistent with the definitions of *patient violence* in the nursing science literature (Jiao et al., 2015), we use this term to refer to low-quality, uncivil interpersonal treatment that health professionals receive from patients and/or patients' relatives/friends. This includes both more intense physical violence (e.g., hitting, kicking, pushing) and less intense non-physical violence (e.g., yelling, using condescending language, making exorbitant demands) directed toward health professionals. The consequences of workplace violence in the healthcare setting are many. A systematic review of 68 studies worldwide (but not including Mainland China) has identified seven types of consequences: (1) physical consequences, (2) psychological symptoms (e.g., posttraumatic stress, depression), (3) emotional consequences (e.g., anger, fear), (4) reduced work functioning (e.g., sick leave, low job satisfaction), (5) negative changes in behavioral interactions and in relationships with patients, (6) negative effects on victims' social and family lives, and (7) financial losses (Lanctôt and Guay, 2014). Of these, psychological and emotional consequences, as well as the impact on work functioning, were "the most frequent and important effects of workplace violence" (Lanctôt and Guay, 2014, p. 492). Yet another consequence of patient violence, documented uniquely in the Chinese context, is that doctors tend to overprescribe diagnostic tests, procedures, and drugs as a self-protection strategy to avoid potential disputes and even physical violence from patients and their families (He, 2014).

Research on the consequences of patient violence, however, has not yet addressed the relationship between patient violence and health professionals' occupational outcomes. We define occupational outcomes as employees' emotions, attitudes, behaviors, and decisions related to their occupation or profession, rather than any specific organization/employer or job/position. Note that occupations represent a meaningful life domain for many people (Lee et al., 2000). As an individual moves from one organization to another, and switches from one job to another with different tasks

to accomplish, he or she may remain within the same occupation. Work by Morrow (1983) has specified different entities to which members of the workforce can be committed. For instance, although an employee' attitudes toward his or her occupation (e.g., healthcare occupation) may be related to one's satisfaction about a specific job or commitment to a specific organization, occupation represents a unique work-related entity that can be distinguished from jobs or organizations (Blau, 2003)). Therefore, diverging from prior research that has focused on job outcomes such as job satisfaction or performance, the current study examines employees' emotional feeling (i.e., disappointment) toward their occupation, their intention to withdraw from membership in their occupation (i.e., occupational turnover intention), and their informal passing of negative information regarding their occupation within their own social networks (i.e., negative occupational word-of-mouth communication).

Studying why employees leave or stay in their occupation is especially critical, because the healthcare industry has witnessed high employee turnover, especially among nurses (Duffield et al., 2014). While nurse turnover rates vary across countries, a comparative review of findings from Australia, Canada, New Zealand, and the U.S. found that nurse turnover rates ranged from 15% to 44% (Duffield et al., 2014). Non-Western countries showed similar findings (Choi and Kim, 2016; Falatah and Salem, 2018). The costs of turnover can be high: across countries, the economic costs of turnover could range from nearly $49,000 to over $20,000 (Duffield et al., 2014). In the healthcare context, turnover also has negative effects on patient safety and the morale and performance of remaining staff (Duffield et al., 2014; Jones et al., 2015).

Patient violence can also add to the list of work stressors that push health professionals out of their occupations. Thus, the occupational consequences of patient violence warrant special attention from managers of healthcare organizations, because high turnover rate can negatively impact organizations' capacity to provide quality care to patients and can incur the high costs of having to replace employees (Duffield et al., 2014; Hayes et al., 2012). For health professionals themselves, it is costly to leave their healthcare occupations, because their training takes considerable time and financial resources. For the society, negative word-of-mouth communication between health professionals and members of the general public regarding the darker sides of healthcare occupations can make it even more difficult to recruit and train future health professionals and further threaten the clinician-patient relationship.

1.2. Theoretical foundation, key study variables, and hypotheses

In this research, we hypothesize that health professionals' disappointment with their occupations mediates the link between frequency of patient violence and health professionals' occupational outcomes. *Disappointment* is a negative emotion experienced when expectations are not met (i.e., when actual outcomes are worse than expectations) (Zeelenberg et al., 2000). For example, individuals can feel disappointment when the products they purchase do not meet their expectations. Specifically, we hypothesize that *patient violence is positively related to health professionals' felt disappointment with their healthcare occupation, which is in turn positively related to their occupational turnover intention and negative word-of-mouth communication about their occupation.*

These hypotheses are theoretically and empirically based. According to Porter and Steers (1973), employees perceive "unmet expectations" when they recognize a discrepancy between what they encounter on the job and what they expected to encounter. Unmet expectations can lead to decreased job satisfaction and organizational commitment, lower job performance, and increased turnover (Robinson, 1996; Turnley and Feldman, 2000; Wotruba and Tyagi, 1991). Health professionals often enter their occupations with an intense passion to heal and care for others and a commitment to make a difference in patients' well-being (Puchalski and Guenther, 2012). They may also expect to gain patients' respect, owing to social norms as well as the inherent reciprocity in healthcare service. This is particularly the case in China, where doctors' and nurses' occupations are traditionally reputable and prestigious (Bian, 1996). Violence from patients and/or patients' relatives/friends contradicts such expectations and can subsequently affect health professionals' feelings about their work, leading them to question their professional calling and their choice of occupation. The result is disappointment, the emotional experience that arises from disconfirmed expectancies (Zeelenberg et al., 2000). Disappointment can encourage withdrawal, whereby individuals disengage from their disappointing situation (Zeelenberg and Pieters, 2004).

Drawing from the occupational behavior literature, we examine two occupational outcomes in this research. The first, *occupational turnover intention*, refers to employees' willingness to withdraw from membership in their occupations (Blau, 2007). Empirical research suggests that disappointment tends to increase turnover intention (Zeelenberg et al., 2000). Thus, one can expect that health professionals who become disappointed with their healthcare occupation will report a higher level of occupational turnover intention. The second occupational outcome, *negative word-of-mouth communication*, refers to the informal passing of negative information within one's own social network, whether orally or digitally (e.g., via text messaging, e-mail, exchanges through social media) (Anderson, 1998; Zeelenberg and Pieters, 2004). We focus on negative word-of-mouth communication in which one person shares negative experiences about work with others. Such communication can result from disappointment and can serve two functions. On the one hand, negative word-of-mouth can act as a review or warning. Employees disappointed with their occupations may want to warn others in their social networks, and negative reviews from current members in a given occupation can demotivate others to enter such occupation in the future. On the other hand, negative word-of-mouth can be a way to cope with disappointment, allowing employees to vent about their experiences and receive emotional support from others. The link between disappointment and negative word-of-mouth is supported by empirical findings in the consumer behavior literature (de Matos and Rossi, 2008; Wetzer et al., 2007).

2. Methods

The current study aims to examine whether patient violence positively relates to health professionals' felt disappointment with the healthcare occupation, and whether their felt disappointment in turn increases their occupational turnover intention and negative word-of-mouth communication about their occupation in the Chinese healthcare context. To test our hypotheses, we used a time-lagged survey design to collect data at two different occasions.

2.1. Participants and procedure

Data were collected from a convenience sample of health professionals working in two large, tertiary, general hospitals in Chengdu, the capital of Sichuan Province in Southwest China. A bilingual U.S.-based researcher (a School of Nursing doctoral student) visited the two hospitals in the summer of 2016 to work with local contacts to recruit participants. The local contacts were physicians who had been working at the participating hospitals for over 20 years. These contacts accompanied the U.S.-based

researcher to visit departments within each participating hospital to recruit participants, explained the study and handed out questionnaires to participants on site. Based on work schedules of health professionals at the data collection sites, only those who would be able to complete the two questionnaires were invited to participate. As a result, we were able to reach a total of 200 health professionals who indicated interest in participating in this research after learning about the study from the U.S.-based researcher. These participants completed the questionnaires in a quiet, private room when they took a break between shifts. One participant's data were excluded from analysis due to extensive missing values, resulting in a final sample size of 199.

2.2. Data collection

Data were collected at two lagged times to help establish a temporal ordering of variables and reduce any impact of common method bias on the results (Podsakoff et al., 2003). In the first wave of data collection, participants reported their experience of patient violence and provided ratings for demographic characteristics and quantitative workload (control variables). Two weeks later, participants responded to measures of their experienced anger (a control variable), disappointment, occupational turnover intention, and negative occupational word-of-mouth communication.

2.3. Ethical considerations

This study was approved by the Institutional Review Board of the University of XXX (blinded for peer review) and the Ethics Committees of the participating Chinese hospitals. Informed consent (in Chinese) was obtained prior to any data collection. A code (identification key) was physically placed on the cover page of the Time 1 and Time 2 survey forms so that data from same participants in Time 1 and Time 2 could be linked for analysis. Through the use of this code, the researchers were able to link the survey form to the participant's identity. The document that recorded the connection between the identities (names) and identification codes were stored in a secure storage location and only the researchers directly involved in this research project had access to the document that recorded the identification keys. This document was destroyed upon this manuscript's publication; and no further follow-up data needed to be collected from the participants.

2.4. Measures

The surveys were in Chinese. All scales were validated and translated from English to Chinese following a translation-back-translation procedure (Brislin, 1980) except where otherwise noted.

2.4.1. Patient violence

Two types of patient violence were measured. Non-physical violence was measured with the 18-item scale of daily mistreatment by customers (Baranik et al., 2017; Wang et al., 2011). This scale was originally validated in Chinese samples of customer service representatives; the scale had satisfactory criterion validity with job performance, well-being, emotional exhaustion, and customer-directed sabotage of mistreated employees (Baranik et al., 2017; Wang et al., 2011). Physical violence was measured with 12 items originally developed to measure violent events in the workplace by Rogers and Kelloway (1997), who established the scales' reliability and construct validity. For both non-physical and physical patient violence, participants rated each item on a five-point frequency scale (1 = *less than once a month or never happened*, 2 = *once or twice per month*, 3 = *once or twice per week*, 4 = *once or twice per day*, and 5 = *more than twice per day*) based on their interactions with patients and patients' relatives/friends.

2.4.2. Disappointment

Disappointment was measured with two items from Zeelenberg and Pieters (2004), with each item rated on a five-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). This measure has demonstrated good reliability and construct validity—past research has shown that this measure is related to other negative emotions and behavioral outcomes such as complaining (Zeelenberg and Pieters, 2004).

2.4.3. Occupational turnover intention

Occupational turnover intention was measured with three items based on Mobley et al. (1978) well-validated measure of turnover intention. We adapted this measure by specifying the occupation component in the items. For example, the item "I often consider finding a new job" was adapted to "I often consider finding a new job in a different occupation". Participants rated each item on a seven-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*).

2.4.4. Negative occupational word-of-mouth communication

Negative occupational word-of-mouth communication was measured with three items from Zeelenberg and Pieters (2004). These items were originally developed to measure word-of-mouth communication about individuals' purchasing experience, and were shown to be related to negative emotions and attitudes (e.g., dissatisfaction). We adapted them to measure communication about negative experiences in working in healthcare. Participants rated each item on a five-point frequency scale (1 = *never* to 5 = *always*).

2.4.5. Control variables

Participants' gender (0 = male, 1 = female) and position (0 = nurse, 1 = doctor) were included as control variables, because men versus women and nurses versus doctors might have different levels of occupational commitment. Quantitative workload was included as a control variable, because this is an important work stressor that has been shown to cause turnover for employees in healthcare (Hayes et al., 2012). Quantitative workload was measured using the Quantitative Workload Inventory, a well-established scale with satisfactory reliability and validity (Spector and Jex, 1998). Lastly, anger was measured as a control variable, because anger may be an emotional mechanism that links mistreatment to employee outcomes (Wang et al., 2011). Anger was measured with the six items for the dimension of hostility from the Positive and Negative Affect Schedule - Expanded Form (PANAS-X), an established measure of moods and emotions (Watson and Clark, 1994).

2.5. Data analysis strategies

First, to examine the prevalence of patient violence in our sample, we examined frequencies and descriptive statistics for patient violence. Specifically, we considered the frequencies of both non-physical and physical violence that health professionals received from patients and patients' relatives/friends. We also used independent samples *t*-test to compare the frequencies of both forms of patient violence between doctors and nurses.

Next, using path analysis in Mplus 7.4 (Muthén and Muthén, 2013), we analyzed the mediation path model with disappointment regressed on non-physical and physical patient violence, and

with occupational turnover intention and negative occupational word-of-mouth communication regressed on disappointment and patient violence. We controlled for the effects of participants' gender (male vs. female), position (nurse vs. doctor), and self-reported quantitative workload in predicting disappointment and occupational outcomes, and we controlled for the effect of anger in mediating the relationship between patient violence and occupational outcomes. Further, we tested indirect effects by deriving their confidence intervals via bootstrapping. Using 1000 bootstrap samples, 95% bias-corrected bootstrap confidence intervals were obtained for the indirect effects of patient violence on occupational outcomes via felt disappointment.

In addition, to explore whether the impact of patient violence differed between doctors and nurses, we conducted supplemental analysis testing the moderating role of participants' position (doctor vs. nurse). Specifically, we included in the path model the interaction terms between non-physical and physical patient violence and participants' positions. Non-physical and physical patient violence were grand-mean centered.

3. Results

Table 1 summarizes participants' demographic characteristics. Table 2 presents the frequencies and descriptive statistics for the variables of patient non-physical and physical violence, for both the whole sample and the subsamples of doctors and nurses separately. Compared with physical violence (*Mean* = 1.14) that involves safety threats and may cause physical harm, non-physical violence (*Mean* = 1.90), such as verbal aggression, was more commonly encountered by Chinese health professionals.

Table 1
Participant Characteristics (*N* = 199).

Variable	*n* (%)
Gender	
Male	52 (26.1)
Female	147 (73.9)
Education	
Associate Degree	53 (26.7)
Bachelor's	93 (46.7)
Master's	40 (20.1)
Doctoral	13 (6.5)
Department	
Surgery	56 (28.1)
Internal medicine	38 (19.1)
Ear, Nose, and Throat	32 (16.1)
Laboratory	22 (11.1)
Oncology	19 (9.55)
Orthopedics	9 (4.5)
Emergency Room	7 (3.5)
Pediatrics	7 (3.5)
Dental	5 (2.5)
Outpatient	3 (1.5)
Obstetrics and gynaecology	1 (0.5)
Profession	
Doctor	97 (48.7)
Nurse	97 (48.7)
Others (4 technicians and 1 missing value)	5 (2.5)
Marital status	
Divorced	4 (2.0)
Living as married	1 (0.5)
Married	153 (76.5)
Single	41 (20.5)
Widowed	0 (0)
Income-individual, monthly (converted to U.S. dollar)	
<$230	8 (4.0)
$231-$462	12 (6.0)
$463-$769	72 (36.2)
$770-$1231	75 (36.7)
>$1231	26 (13.1)
Missing	6 (3.0)

The scale score (i.e., the average across scale items) of patient non-physical violence was 1.90 with a standard deviation of .68 (rated on a 5-point frequency scale), indicating that on average, healthcare providers in the present sample experienced non-physical violence once or twice per month. The scale score of non-physical violence was lower than 2 (i.e., less than once or twice per month) for the majority of participants (i.e., 130 out of 199, 65.33%). The rest of the participants (34.67%) had a scale score of non-physical violence higher than 2 (i.e., more than once or twice a month), and 10.55% had a scale score higher than 3 (i.e., more than once or twice per week). Compared with doctors (*Mean* = 1.81), nurses (*Mean* = 1.99) reported slightly more frequent non-physical violence from patients and/or their relatives/friends ($t = 1.86$, $df = 192$, $p = .07$).

The scale score of physical violence was 1.14, with a standard deviation of .35 (rated on a 5-point frequency scale), indicating that the frequency of physical violence from patients and/or patients' relatives/friends was low. Specifically, the vast majority of the participants (i.e., 194 out of 199) had a scale score lower than 2 (i.e., less than once or twice per month). Indeed, 142 participants (71.36%) endorsed "1" (i.e., "less than once a month or never happened") on the response scale for every single item of the physical violence scale. Doctors (*Mean* = 1.11) and nurses (*Mean* = 1.14) did not differ significantly on reported physical violence ($t = .67$, $df = 192$, $p = .51$).

Tables 3 and 4 present items measuring the study variables, as well as their means and standard deviations. Table 5 presents the correlations between the study variables and the scale reliability of the measures. Non-physical violence was significantly correlated with health professionals' anger and disappointment. Physical violence was not correlated with any outcome variables.

3.1. Hypothesis testing results

The path model provided a good fit to the current data, χ^2 (4, $N = 199$) = 5.93, $p = .20$, comparative fit index (CFI) = .99, root mean square error of approximation (RMSEA) = .05, standardized root mean square residual (SRMR) = .01[1] . Path analysis results were summarized in Table 6. Predictors in the path model together accounted for 51.8% of the total variance in occupational turnover intention and 31.4% of the total variance in negative occupational word-of-mouth communication. After controlling for health professionals' gender, position, and quantitative workload, non-physical violence was positively related to disappointment. Disappointment was positively related to both occupational turnover intention and negative occupational word-of-mouth communication. Nevertheless, patient physical violence was not significantly related to disappointment or the occupational outcome variables.

Further, bootstrapping results showed that there were significant indirect effects of non-physical violence on occupational turnover intention (*indirect effect* = .142, 95% CI [.037, .264], based on unstandardized coefficients) and negative occupational word-of-mouth communication (*indirect effect* = .159, 95% CI [.039, .301]) via disappointment. These results supported our hypotheses that health professionals who experienced more violence from patients and patients' relatives/friends were more likely to feel disappointed with their healthcare occupation, and that in turn they were

[1] The path model did not estimate the direct effects of the interaction terms between patient violence and employee position in predicting employees' occupational turnover intention and negative occupational word-of-mouth communication. The current path model fit equally well with a full model where these direct effects were estimated. Including these direct effects did not change the hypotheses testing results.

Table 2
Frequencies, Means, and Standard Deviations of Patient Non-physical and Physical Violence.

Scale score	Frequency	Valid Percent	Cumulative Percent	Scale score	Frequency	Valid Percent	Cumulative Percent
Non-physical violence				Physical violence			
Whole sample (N = 199)				Whole sample (N = 199)			
4-5.00	1	0.50	0.50	4-5.00	0	0.00	0.00
3-3.99	20	10.05	10.55	3-3.99	2	1.01	1.01
2-2.99	48	24.12	34.67	2-2.99	3	1.51	2.51
1-1.99	130	65.33	100.00	1-1.99	194	97.49	100.00
Mean = 1.90, SD = 0.68				Mean = 1.14, SD = 0.35			
Doctors (n = 97)				Doctors (n = 97)			
4-5.00	0	0.00	0.00	4-5.00	0	0.00	0.00
3-3.99	6	6.19	6.19	3-3.99	0	0.00	0.00
2-2.99	22	22.68	28.87	2-2.99	2	2.06	2.06
1-1.99	69	71.13	100.00	1-1.99	95	97.94	100.00
Mean = 1.81, SD = 0.58				Mean = 1.11, SD = 0.28			
Nurses (n = 97)				Nurses (n = 97)			
4-5.00	1	1.03	1.03	4-5.00	0	0.00	0.00
3-3.99	13	13.40	14.43	3-3.99	1	1.03	1.03
2-2.99	25	25.77	40.21	2-2.99	1	1.03	2.06
1-1.99	58	59.79	100.00	1-1.99	95	97.94	100.00
Mean = 1.99, SD = 0.76				Mean = 1.14, SD = 0.31			

Note. Response scale: 1 = less than once a month or never happened, 2 = once or twice per month, 3 = once or twice per week, 4 = once or twice per day, 5 = more than twice per day.

Table 3
Item-level Descriptive Statistics for Patient Violence Scale.

Item	Mean (all)	SD (all)	Mean (doctor)	Mean (nurse)
Patient violence: Non-physical: *"Patient and/or their family/friend . . . "*				
1 . . . demanded special treatment	2.39	1.26	2.45	2.33
2 . . . thought they were more important than others	2.51	1.35	2.47	2.55
3 . . . asked me to do things they could do by themselves	2.22	1.19	2.01	2.42
4 . . . vented their bad mood out on me	2.11	1.13	2.04	2.21
5 . . . did not understand that I had to comply with certain rules	2.39	1.14	2.32	2.47
6 . . . complained without reason	2.20	1.14	2.15	2.27
7 . . . made exorbitant demands	1.96	1.00	1.94	1.99
8 . . . were impatient	2.38	1.30	2.33	2.45
9 . . . yelled at me	1.74	0.96	1.66	1.85
10 . . . spoke aggressively to me	1.54	0.82	1.45	1.63
11 . . . got angry at me even over minor matters	1.73	0.86	1.66	1.82
12 . . . argued with me the whole time throughout the visit	1.38	0.68	1.32	1.44
13 . . . refused to listen to me	1.61	0.79	1.45	1.77
14 . . . cut me off mid-sentence	1.99	1.04	1.91	2.08
15 . . . made demands that I could not deliver	1.76	0.93	1.65	1.87
16 . . . insisted on demands that were irrelevant to my service	1.53	0.80	1.45	1.60
17 . . . doubted my ability	1.54	0.74	1.44	1.64
18 . . . used condescending language to me	1.33	0.65	1.24	1.41
Patient violence: Physical: *"Patient and/or their family/friends . . . "*				
19 . . . hit me	1.16	0.44	1.15	1.18
20 . . . kicked me	1.13	0.43	1.12	1.14
21 . . . grabbed me	1.15	0.47	1.15	1.14
22 . . . shoved me	1.13	0.37	1.11	1.14
23 . . . pushed me	1.13	0.42	1.12	1.14
24 . . . spat or bit me	1.15	0.50	1.14	1.15
25 . . . swore at me	1.17	0.45	1.17	1.18
26 . . . damaged my personal property	1.13	0.43	1.16	1.10
27 . . . threatened me with physical violence	1.17	0.46	1.17	1.16
28 . . . threatened me with a weapon	1.13	0.44	1.13	1.13
29 . . . threatened me with property damage	1.13	0.43	1.13	1.14
30 . . . used a weapon (e.g., a knife, stick) to cause me physical harm	1.10	0.34	1.11	1.08

more likely to consider leaving their occupation and verbally communicate their negative experiences and feelings about their occupation to others.

It should be noted that the mediating effect of disappointment was reached after controlling for the mediating effect of anger. Indeed, non-physical violence was positively related to health professionals' anger, and anger was positively related to occupational turnover intention, but not to negative occupational word-of-mouth communication. The indirect effect of non-physical violence mediated by anger on occupational turnover intention was significant (*indirect effect* = .174, 95% CI [.085, .281]) but the indirect effect of non-physical violence mediated by anger on word-of-mouth communication was not (*indirect effect* = .053, 95% CI [-.017, .165]). Furthermore, the sum of indirect effects of non-physical violence on health professionals' turnover intention (*indirect effect* = .317, 95% CI [.152, .480]) and negative word-of-mouth communication (*indirect effect* = .212, 95% CI [.066, .409]) were both significant.

We conducted supplemental analyses to explore whether the impact of patient violence differed between doctors and nurses.

Table 4
Item-level Descriptive Statistics for Other Scales.

Item	Mean	SD
Disappointment		
1. I feel disappointment about this occupation	2.66	1.03
2. This occupation is worse than I expected beforehand	2.92	1.06
Scale score	2.79	0.96
Occupational turnover intention		
3. The thought of leaving my current occupation often crosses my mind	2.59	0.97
4. I often consider finding a new job in a different occupation	2.63	1.01
5. I often actively look for a new job in a different occupation	2.27	0.97
Scale score	2.49	0.86
Negative occupational word-of-mouth		
6. I have talked with my friends and acquaintances about the hardships working in this occupation	2.86	1.10
7. I have talked with my partner and/or relatives about the hardships working in this occupation.	2.89	1.10
8. I have discouraged others to enter this occupation	2.90	1.24
Scale score	2.88	0.99
Quantitative workload (control variable)		
9. My job requires me to work very fast.	3.22	1.51
10. My job requires me to work very hard.	2.91	1.48
11. My job leaves me with little time to get things done.	3.05	1.49
12 There is a great deal to be done.	3.12	1.40
13 I have to do more work than I can do well within the work hours.	2.31	1.22
14 I have to work overtime in order to finish the work.	2.28	1.20
Scale score	2.82	1.20
Anger (control variable)		
15. Hostile	2.00	0.85
16. Angry	2.12	0.90
17. Irritable	2.11	0.93
18. Scornful	1.98	0.94
19. Disgusted	2.02	0.95
20. Loathing	1.87	0.86
Scale score	2.01	0.76

Table 5
Correlations among Study Variables and Scale Reliabilities.

Variable	1	2	3	4	5	6	7	8	9
1. Gender	_								
2. Position	.54**	_							
3. Quantitative workload	.20	.12	(.93)						
4. Patient non-physical violence	−.19**	−.12	.52**	(.93)					
5. Patient physical violence	−.00	−.00	−.15*	.14	(.95)				
6. Anger	.24**	.07	.17*	.28**	.01	(.92)			
7. Disappointment	.00	.00	.34**	.35**	−.11	.37**	(.82)		
8. Occupational turnover intention	−.01	−.06	.24**	.36**	−.00	.54**	.62**	(.85)	
9. Negative occupational word-of-mouth	.11	.05	.32**	.31**	−.06	.33**	.56**	.54**	(.83)

Note. $N = 199$. * $p < .05$; ** $p < .01$. Gender (0 = female, 1 = male). Position (0 = nurse, 1 = doctor). Values presented in parentheses are Cronbach's alpha reliability coefficients.

Specifically, we tested the moderating role of participants' position (doctor vs. nurse) on the effect of patient violence on disappointment and anger. As reported in Table 6, the moderating effect of position was not significant in predicting either disappointment or anger, indicating that experiencing violence from patients and/or their relatives/friends had similar affective effects for doctors and nurses in this sample.

4. Discussion

This study sheds light on: (1) the prevalence of patient violence in the Chinese context, (2) the relationship between patient violence and Chinese health professionals' occupational outcomes, and (3) international nursing research and practice.

4.1. Prevalence of patient violence in China

Patient violence is a prevalent issue faced by worldwide health professionals and healthcare organizations (Hills and Joyce, 2013). Notably, the rates of patient violence found in our study are lower than those reported in earlier Chinese studies. For instance, a 2014 survey conducted by the Chinese Medical Doctor Association (Chinese Medical Doctor Association (CMDA), 2015) in 13 provinces/special administrative districts, which did not include Sichuan Province (where our sample was from), reported that 60% of physicians encountered verbal aggression and 13% suffered physical injuries. Only 27% of physicians reported no patient violence. A survey of nurses in Heilongjiang Province (Jiao et al., 2015) also revealed a high rate of non-physical violence (72%) during the past year. Physical violence was encountered by 8% of the nurses. Another survey conducted in Shanghai, Hubei Province, and Gansu Province (Shi et al., 2015) revealed even higher rates of patient violence: verbal abuse during the past 12 months was reported by 93% of the physicians; threats of assault by 88%; and physical assaults by 81%. Rates of physicians' "high-frequency exposure" (defined as at least "once per week") to patient violence were also high: verbal abuse, 35%; threats of assault, 28%; and physical assault, 19%. Given that there might be regional differences in the prevalence of patient violence, our data from Sichuan Province might represent a prevalence of patient violence different from that in other regions of China (Chinese Medical Doctor Association (CMDA), 2015), that is, health professionals in Sichuan

Table 6
Path Analysis Results.

Predictor	*B* DV = Disappointment	*S.E.*	*β*	*B* DV = Anger	*S.E.*	*β*
Intercept	2.60**	.26		.2.60**	.21	
Gender	−.19	.17	−.09	−.64**	.14	−.37
Position	−.06	.15	−.03	−.16	.12	−.10
Quantitative workload	.13*	.07	.16	−.01	.05	−.02
Patient non-physical violence	.34**	.13	.24	.43**	.10	.39
Patient physical violence	−.33	.26	−.12	.04	.21	.02
Patient non-physical violence x Position	.24	.20	.10	.-.09	.16	−.05
Patient physical violence x Position	−.08	.43	−.02	−.31	.34	.-.09
Residual variance	.76**			.47**		

	DV = Occupational Turnover Intention			DV = Negative Occupational Word-of-mouth		
Intercept	.54*	.25		1.28**	.33	
Gender	.08	.12	.04	−.24	.16	−.11
Position	−.12	.10	−.07	−.05	.14	−.02
Quantitative workload	.00	.04	.00	.09	.06	.11
Patient non-physical violence	.09	.08	.07	.11	.11	.08
Patient physical violence	.08	.13	.03	−.01	.17	−.01
Anger	.40**	.06	.36	.12	.09	.09
Disappointment	.42**	.05	.47	.47**	.07	.46
Residual variance	.35**			.63**		

Note. $N = 199$. * $p < .05$; ** $p < .01$. Gender (0 = female, 1 = male). Position (0 = nurse, 1 = doctor).

Province reported less patient violence compared with their peers in many other regions of China.

Another possible reason for the lower prevalence rates of patient violence found in our study was the composition of our sample's specializations. Worldwide, workplace violence toward health professionals tends to occur more often in critical care settings like emergency departments or long-term care facilities, and among patients with psychiatric disorders (Flannery et al., 2014; Gillespie et al., 2017; Shea et al., 2017; Tishler et al., 2013). This situation is similar in China. A survey of patient violence on psychiatric nurses in China (Zeng et al., 2013) found that the vast majority of nurses (82%) had encountered at least one type of patient violence in the past 6 months. Verbal violence was experienced by 79%; physical violence by 62%. Emergency departments have the highest rate of violent incidents (although nearly all other departments in hospitals also experience such violence) (Pan et al., 2015). In comparison, our study sample had only a few participants from emergency departments ($n = 7$, or 3.5%) and none from long-term care facilities or psychiatric units. Thus, the composition of our sample's specializations might also have contributed in part to the lower prevalence rates found in our study.

The third possible reason for our study's lower prevalence rates was that our study measured patient violence "directly experienced" by the participants themselves. In comparison, previous research that found high rates of patient violence measured it as "directly experienced or indirectly witnessed" (Shi et al., 2015). For instance, a sample item used in J. Shi et al.'s study (2015) was "How often have you or your colleagues suffered from verbal abuse by patients or their relatives/friends in the past 12 months?" Noting that this survey question did not even limit the "indirectly witnessed" experience to the participant's own hospital, we suspect that participants' responses might have been influenced by patient violence that their colleagues in other hospitals had experienced. It is likely that frequently witnessing colleagues suffering from patient violence could also raise one's feelings of disappointment toward one's working occupation. Future research may benefit from examining occupational outcomes of third-party observation of patient violence.

Finally, another possible reason is the timing of the surveys. Shi et al. (2015) conducted their survey from "June through October 2013" and the Jiao et al. (2015) conducted theirs from July to September 2013. In 2013, 130 violent disturbances leading to physical injuries were reported, including 28 violent disturbances leading to brutal injuries/killings of healthcare providers, and similar numbers (150 and 27, respectively) were reported in the media (Chinese Medical Doctor Association (CMDA), 2015); but since 2015, media reporting of such violence has decreased, likely due to new laws/regulations and stricter law reinforcements (Chinese Medical Doctor Association (CMDA), 2015). This might in part explain why our study, conducted in July-August 2016, found lower rates of violence compared with studies conducted in 2013 or 2014.

4.2. Relationship between patient violence and occupational outcomes

Previous literature has documented a wide range of negative consequences of patient violence, focusing on its psychological and emotional consequences and its impact on work functioning (Diefendorff et al., 2011; Grandey et al., 2012). The present study extends that knowledge by providing evidence for the impact of patient violence on health professionals' turnover intention and negative word-of-mouth communication regarding their occupations. This detrimental impact of patient violence on health professionals' occupational outcomes facilitates a broader understanding of why patient violence harms individual health professionals as well as healthcare organizations. Our findings also add patient violence to the list of factors contributing to high turnover rates of health professionals in China. Further, we found that a significant relationship existed only between non-physical patient violence and occupational outcomes; physical violence was not significantly correlated with any outcome variable. This could be due to the extremely low mean and variance of physical violence reported by participants. Still, the significant negative effect of non-physical patient violence on occupational outcomes deserves further attention and effective intervention from lawmakers and law enforcement officials on national, provincial, and local levels, as well as from hospital administrators. Our study also suggests that future studies should consider and examine different forms of violence from patients and their families/friends.

In the healthcare context, the specific position of health professionals may be an important factor that influences the risk

of patient violence. Worldwide, nurses have typically been the health professionals most likely to be exposed to workplace violence (Brown and Burns, 2013; Child and Mentes, 2010; Heckemann et al., 2015; Martinez, 2016; Wei et al., 2016) although doctors (including family medicine practitioners) in developed countries are not exempt (Hills and Joyce, 2013). In China, previous studies have reported that doctors tend to be the primary target in workplace violence (Pan et al., 2015; Wen et al., 2016). One possible reason suggested by previous research is that in China, doctors at all types of hospitals, especially those in tertiary hospitals, experience heavy workloads, high burnout rates, and high rates of medical mistakes (Wen et al., 2016). Nevertheless, our study, drawing from a sample of doctors and nurses from tertiary hospitals, found only a marginally significant difference between doctors and nurses in experiencing non-physical violence, and found no statistically significant difference between doctors and nurses in experiencing physical violence. The hypothesized relationships between patient violence and felt disappointment with their occupations did not differ between doctors and nurses either. It is possible that one needs a larger sample size to detect the differences between Chinese doctors and nurses. Future research should collect data from more representative samples to compare experiences of doctors versus nurses.

4.3. International nursing research and practice

Another major strength of this study is that it shed lights on international nursing research and practice. Patient violence deserves serious attention from health professionals, healthcare educators, administrators of healthcare organizations, and policy-makers. Turnover of health professionals is always an issue in the healthcare industry, with stress and dissatisfaction being the most important causes for turnover (Halter et al., 2017). However, as a recent meta-review of nine systematic reviews shows, violence from patients has not been studied as a major factor contributing to stress and dissatisfaction among nurses (Halter et al., 2017). The present study adds to the literature and calls for attention to this previously understudied factor. In China in particular, the shortage of health professionals has become a serious issue and can become worse given that fewer qualified younger people are willing to enter healthcare occupations nowadays. Patient violence against health professionals in China has reduced somewhat since the institution of new laws and policies with stricter enforcement in 2015 (Chinese Medical Doctor Association (CMDA), 2015). Nevertheless, more work is still needed. In particular, policy-makers and hospital administration should strive to ensure a safe work environment where health professionals will not suffer from violence from patients and their relatives/friends. Non-physical violence, although seemingly "minor" compared with physical violence, may still lead to negative occupational outcomes. Thus, approaches to reduce health professionals' turnover intention should address both physical and non-physical violence.

This research also has methodological implications for nursing research. As one review has revealed (Campbell et al., 2015), research on patient violence worldwide currently lacks standardized measures of patient violence toward health professionals, with existing research comprising primarily cross-sectional surveys conducted at one time point, the use of researchers' self-developed instruments, and a lack of reports of instruments' validity and reliability. Our own review of the literature suggests that research in the Chinese context presents no exception to these limitations (Jiao et al., 2015; Pan et al., 2015; Shi et al., 2015; Shi et al., 2017; Zeng et al., 2013), apart from two studies done with non-survey methods—one used interviews (Tucker et al., 2015) and the other used content analysis (Tian and Du, 2017)). In contrast, in the present study we used validated instruments to examine workplace violence. In addition, we collected data at two times to reduce the impact of common method bias on our findings (Podsakoff et al., 2003). Given the temporal separation of the measures of patient violence and the dependent variables, it is unlikely that the observed associations between patient violence, disappointment, and occupational outcomes were due purely to participants' response biases. This constitutes stronger empirical evidence for the association between patient violence and undesired occupational outcomes.

5. Limitations and future research directions

This study has limitations that can be addressed in future research. First, we used a convenience sample of health professionals recruited from a single province of China (i.e., Sichuan), which limits generalizability. Future studies should attempt to replicate our findings in samples from different countries and regions. Second, in recruiting participants, we did not target any specific departments in the participating hospitals. The sample comprised health professionals from a wide range of departments; in many cases, only a few doctors and nurses from a given department participated. This constrained our ability to test potential differences across departments. Future studies should examine potential differences in both the prevalence of patient violence and the impact of patient violence across healthcare units and departments. Third, all of the variables in this study were measured with self-report scales. Future studies can include outcomes rated by coworkers or patients (e.g., negative word-of-mouth received) or actual turnover from longitudinal follow-up observations. Fourth, although we collected data in two separate waves to establish temporal ordering of the variables, it was still possible that health professionals who often thought about changing occupations tended to feel more dissatisfaction at work and thus reported experiencing patience violence more frequently. Finally, we examined the impact of patient violence on the intention to leave the occupation but not the actual turnover. Although turnover intention is an important antecedent of actual turnover, it is important to keep in mind that the intention to leave may, or may not, convert to actual turnover (Hom et al., 2017). Future research should measure turnover directly and test the relationship between patient violence and actual turnover.

6. Conclusion

This study has examined the prevalence of patient violence in the Chinese context. Our results show that Chinese health professionals experienced both non-physical and physical violence from patients and their families/friends, with the rate of non-physical violence being much higher than that of physical violence. This study also shows that Chinese health professionals who experienced non-physical violence from patients and their relatives/friends more frequently were more likely to feel disappointed with their healthcare occupations. In turn, these people reported higher levels of intention of leaving their healthcare occupation and higher levels of negative word-of-mouth communication regarding their occupation. Physical violence was not significantly correlated with any outcome variable.

Results of this study contribute to the nursing literature regarding the prevalence of patient violence and the significant negative effect of non-physical patient violence on occupational outcomes. Our findings call for further attention and effective intervention from lawmakers and law enforcement officials on national, provincial, and local levels, as well as from hospital administrators, to improve health professionals' work conditions and quality of life, and subsequently to reduce health professionals'

turnover and improve the quality of patients' care. Empirically, our findings emphasize the importance of considering and measuring different forms of violence from patients and their relatives/friends. Our study also has methodological implications as it recommends standardized measures of patient violence towards health professionals across national and regional contexts.

Acknowledgements

Editorial support with manuscript development was provided by the Cain Center for Nursing Research and the Center for Transdisciplinary Collaborative Research in Self-management Science (P30, NR015335) at The University of Texas at Austin School of Nursing. The authors wish to thank our participants for participating in this study and the staff and administrators of our research sites for facilitating the recruitment and logistics.

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