Determinants of Workplace Bullying Types and Their Relationship With Depression Among Female Nurses

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ABSTRACT

Background: Workplace bullying is commonly experienced by nurses worldwide.

Purpose: This study was conducted to examine the determinants of different types of workplace bullying and their relationship to depression in female nurses.

Methods: A cross-sectional correlational study was employed, and 484 female nurses from a large medical center in southern Taiwan completed the questionnaire. Data were analyzed using logistic regression analysis.

Results: Being unmarried and working in medical/surgical units were found to be the major determinants of work-related bullying, whereas being unmarried was found to be the single determinant of person-related and physical-intimidation bullying. Moreover, work-related and person-related bullying were both found to be significant determinants of depression.

Conclusions/Implications for Practice: Nursing administrators should establish workplace-bullying prevention and management strategies by setting reasonable and equal workloads for nurses, assigning tasks equitably, and building depression-related support and consultation groups.

KEY WORDS:
workplace bullying, depression, marital status, nurse.

Introduction

Workplace bullying (WB) refers to repeated and continuous verbal insults or hurtful behaviors by one or more coworkers at least once per week for at least 6 months (Einarsen, Hotel, Zapf, & Cooper, 2011). WB encompasses a wide range of negative acts, including work-related, person-related, and physical intimidation behaviors (Einarsen, Hotel, & Notelaers, 2009). Work-related bullying includes assigning too many, too few, or too simple tasks as well as criticizing an individual’s work persistently. Person-related bullying includes slander, social isolation, and gossiping about an individual. Physical-intimidation bullying includes physical violence or the threat of physical violence. WB is common in nursing, with a prevalence ranging from 27.3% to 86.5% across various countries (Etienne, 2014; Rayan, Sisan, & Baker, 2019; Tsai, Han, Chen, & Chou, 2014; Wilson, 2016).

Nurse administrators are aware of WB, and researchers have conducted studies to examine related issues. However, WB remains chronically prevalent in nursing practice (Rutherford, Gillespie, & Smith, 2018). One reason for this may be the multifac torial nature of the causes of WB. Several factors have been shown to be associated with WB, including economic conditions, workload, lack of interpersonal skills, lack of management skills, the hierarchical nature of the nursing field, and nurses not feeling empowered (Wilson, 2016). However, the causes and consequences of WB vary among the several different types of WB behaviors (Wright & Khatri, 2015). Wright and Khatri have argued that work-related bullying may be a product of staffing shortages, workplace design, policies, and/or organizational structures. Moreover, they suggested that person-related bullying is negatively associated with age and that physical-intimidation bullying is positively associated with age. In terms of the consequences of WB, person-related bullying has been significantly correlated with psychological/behavioral responses and medical errors, whereas work-related bullying has been associated only with psychological/behavioral responses. However, physical-intimidation bullying has not been shown to have a significant relationship with either of these outcomes (Wright & Khatri, 2015).

Previous studies have found that women face a higher risk of experiencing WB than men (Ling, Young, Shepherd, Mak, & Saw, 2016; Workplace Bullying Institute, 2017) and that WB occurs at similar frequencies in male-dominated and female-dominated workplaces (Chatziioannidis, Bascialla, Chatzivalsama, Vouzas, & Mitsiakos, 2018). Nurses are viewed as an oppressed group in the healthcare field. As the large...
majority of nurses are female, WB has generally been reported more often by nurses than by other healthcare professionals (Evans, 2017). However, female nurses may view bullying behaviors as normal and allow these behaviors to continue (Szutenbach, 2013). Although many studies have examined WB among nurses, few have focused on female nurses only.

Depression is characterized by symptoms of low mood such as sadness, loss of interest or pleasure, and feelings of worthlessness (Bianchi, Schonfeld, & Laurent, 2013). Research studies have found that up to 50% of nurses experience depressed moods (Chuang & Yang, 2011; Letvak, Ruhm, & McCoy, 2012). Depression is commonly viewed as a consequence of WB (Fang et al., 2018; Kivimäki et al., 2003; Yildirim, 2009). However, a large-scale study did not find that exposure to bullying behavior at baseline predicted depression 1 year later (Reknes et al., 2014). It is possible that different types of bullying behavior tend to result in different levels of depression severity. Additional research studies are needed to determine the relationship between depression and types of WB.

In Taiwan, most nurses are female as well as tend to be young and unmarried (Lee, Yen, Fetzer, & Chien, 2015), which may be important predictors of WB. However, previous studies have not focused on bullying in relation to depression in female nurses. This study aimed to examine the determinants of WB types and their relationship with depression among female nurses. The hypothesis of this study is that demographics and work-related factors are correlated with WB variables in female nurses. However, different WB-related variables may result in different levels of depression severity.

**Methods**

**Design**

A cross-sectional, correlational research design was employed. Data were collected from November 2012 to May 2013.

**Setting and Sample**

A convenience sample of nurses was recruited from a large medical center and two of its affiliated hospitals in southern Taiwan. The inclusion criteria were female nurses who were 20 years old or older and who had worked as a nurse for at least 6 months. Two questions about having had a diagnosis of major depression/mental illness and the time of the most recent diagnosis were used to exclude nurses who were diagnosed with major depression or other mental illness before entering the nursing profession.

G-Power software (Faul, Erdfelder, Buchner, & Lang, 2009) was used to calculate the sample size needed for a multiple linear regression analysis with an $\alpha$ of .05, a power of .80, a small effect size of .05, and 12 variables. A sample size of 358 participants was recommended. Considering the sensitive nature of the WB issue, we expected to encounter a low response rate and to have an invalid questionnaire rate of up to 60%. Thus, 513 questionnaires were distributed, with 509 questionnaires returned and 23 questionnaires excluded because of missing data, resulting in a return rate of 99.2%. Two participants were excluded because of a diagnosis of major depression before entering the nursing profession. A post hoc power analysis of a logistic regression analysis with an $\alpha$ of .05 yielded an odds ratio of 1.89 of marital status for WB ($H_0=.277$ and $X_{\text{parm}} \mu = .66$) and an odds ratio of 1.91 of WB for depression ($H_0=.298$ and $X_{\text{parm}} \mu = 1.81$, with a $\sigma$ of 0.76). A sample size of 484 yielded a power of .87–.99.

**Instruments**

**Demographic and work-related data**

The demographic data included age, gender, marital status (yes/no), and education (“junior college” or “bachelor’s degree or above”). Work-related data included years worked as a nurse, job title (registered nurse or not), working unit (medical/surgical, critical/emergent care unit, other), and shift assignment (fixed/rotating).

**Negative Acts Questionnaire–Revised**

WB was measured using the Negative Acts Questionnaire–Revised (NAQ-R) developed by Einarsen and Raknes (1997). The NAQ-R includes 22 items covering three types of bullying: work-related (seven items), person-related (12 items), and physical intimidation (three items). Each question is scored from 1 to 5 (never, sometimes, every month, every week, and every day for the past 6 months; Einarsen et al., 2009). The total possible score for the NAQ-R ranges from 22 to 110, with a higher score indicating that the individual has been the target of more severe WB during the most recent 6-month period. To conduct comparisons between WB types, the total score for each type was converted to a 1- to 5-point score by summing the scores of the items for that type and then dividing by the number of type items. In a previous study of 511 nurses, the Cronbach’s $\alpha$ for the English version was .88 (Simons, 2008). The NAQ-R was translated into Mandarin Chinese for this study. The translation was guided by knowledge about cultural equivalences between the original and translated versions (Flaherty et al., 1988). The English version was first forward-translated into Mandarin Chinese by the principal investigator. A nurse who was familiar with both English and Taiwanese cultures was invited to review the translated version. The research team then held a consensus meeting to confirm the translated version. Then, a Taiwanese-American doctoral student who was not familiar with the NAQ-R was asked to back-translate the questionnaire into English. To finalize the Chinese version, the original developer, Dr. Einarsen, was invited to examine the difference between the original and translated versions. Regarding the internal consistency reliability, Cronbach’s $\alpha$ was .95 for the overall scale and .77, .68, and .88 for the three WB types (work-related, person-related, and physical intimidation), respectively.

**Taiwanese Depression Questionnaire**

Depression was measured using the Taiwanese Depression Questionnaire (TDQ; Lee, Yang, Lai, Chiu, & Chau, 2000).
The 18-item self-report questionnaire includes three domains: cognitive, emotional, and physical. Participants were asked to answer questions about their depressive symptoms over the past 6 months using a 4-point Likert scale (0 = never or rarely to 3 = usually). The total possible score ranges from 0 to 54, with a total score of 19 or more indicating the presence of clinically significant depressive symptoms (John Tung Foundation, 2004). The TDQ has been validated using the Chinese version of the Center for Epidemiologic Studies Depression Scale and has shown a high correlation coefficient of .92 (Lee et al., 2000). The Cronbach’s $\alpha$ for this study was .94.

**Data Collection and Ethical Considerations**

Approval to conduct this study was obtained from the institutional review board of the affiliated facilities (KMUH-IRB-20120179). The primary researcher, an intensive care unit nurse, contacted each head nurse of the ward of the three hospitals and made appointments to discuss the study during the staff meetings. Next, nurses were approached and invited to participate. The primary researcher explained the study protocol and gave the informed consent form to the nurses. Those who consented to participate then received a package that included the questionnaire, the consent form, a return stamped envelope, and a small token of appreciation. The participants were asked to return the questionnaire within 1 week.

**Data Analysis**

Data were analyzed using SPSS 18.0 for Windows (SPSS, Inc., Chicago, IL, USA). Descriptive statistics were calculated for each variable. A Kolmogorov–Smirnov test showed that the scores on the NAQ-R ($Z = 3.81$, $p = .000$) and TDQ ($Z = 1.97$, $p = .001$) were not normally distributed, even after data transformation. Therefore, a nonparametric analytical method applied via a logistic regression analysis was used to examine the major factors associated with the three types of bullying and the relationship between these factors and depression. The goodness of fit for the model was assessed using the Hosmer–Lemeshow test.

**Results**

**Demographic and Work-Related Data**

The mean age of the sample of nurses was 31.1 ($SD = 6.5$) years, ranging from 21 to 53 years. The mean number of years having worked as a nurse was 8.9 ($SD = 6.9$). As shown in Table 1, most of the participants were unmarried at the time of the study (66.1%), had a bachelor’s degree or above (90.5%), were registered nurses (89.9%), worked in the medical/surgical ward (59.9%), and worked rotating shifts (72.1%).

**Workplace Bullying**

The mean total score on the NAQ-R was 34.5 ($SD = 13.3$), with 27.7% ($n = 134$) of the participants meeting the definition of experiencing WB at least once per week for a period of 6 months (Table 2). Regarding the 22 NAQ-R items, 79 participants (16.3%) reported that they encountered one or more of these items on a daily basis, whereas 98 (20.2%) experienced one or more of these items on a weekly basis. Twenty-two nurses reported never having experienced bullying behaviors. Across the three types, work-related bullying scored the highest, and physical-intimidation bullying scored the lowest. The three bullying behaviors with the highest scores were “Having your opinions and views ignored” (2.0), “Being exposed to an unmanageable workload” (1.9), and “Being given tasks with unreasonable or impossible targets or deadlines” (1.9).

**TABLE 1.**

**Demographic Variables**

| Variable                  | $M$  | $SD$ |
|---------------------------|------|------|
| Age (years)               | 31.1 | 6.5  |
| Years employed as a nurse | 8.9  | 6.9  |
| Marital status            |      |      |
| Married                   | 164  | 33.9 |
| Single                    | 320  | 66.1 |
| Education                 |      |      |
| Junior college            | 46   | 9.5  |
| Bachelor’s degree or above| 438  | 90.5 |
| Job title                 |      |      |
| Registered nurse          | 435  | 89.9 |
| Other (nurse practitioner, head nurse) | 49 | 10.1 |
| Working unit              |      |      |
| Medical/surgical ward     | 290  | 59.9 |
| Critical and emergent care unit | 150 | 31.0 |
| Other (pediatrics, hemodialysis, etc.) | 44 | 9.1 |
| Shift assignment          |      |      |
| Fixed                     | 135  | 27.9 |
| Rotating                  | 349  | 72.1 |

**TABLE 2.**

**WB (NAQ-R) and Depression (TDS) Scores ($N = 484$)**

| Variable                  | $M$  | $SD$ |
|---------------------------|------|------|
| NAQ-R (total score)       | 34.52| 13.30|
| Work-related WB           | 1.81 | 0.76 |
| Person-related WB         | 1.48 | 0.62 |
| Physical-intimidation WB  | 1.39 | 0.66 |
| TDS                       | 14.09| 10.48|
| Yes (TDS ≥ 19; n and %)   | 144  | 29.8 |
| No (TDS < 19; n and %)    | 340  | 70.2 |

Note. WB = workplace bullying; NAQ-R = Negative Acts Questionnaire–Revised; TDS = Taiwanese Depression Scale.
Depression
The mean overall depression score was 14.1 (SD = 10.5). One hundred forty-four (29.8%) nurses revealed clinically significant symptoms of depression (John Tung Foundation, 2004). The three most commonly reported symptoms were “I feel very annoyed” (1.3 ± 0.9), “I feel that my memory is not good” (1.2 ± 0.9), and “My body feels tired, weak, and lacking in energy” (1.2 ± 1.0).

Determinants of Workplace Bullying
The logistic regression analysis (Table 3) showed that the major determinants of work-related bullying were being single (OR = 1.89, 95% CI [1.08, 3.33]) and working in a medical/surgical unit (Wald statistic = 6.08, p = .48). Being single was the only determinant of person-related bullying (OR = 3.51, 95% CI [1.57, 7.89]) and of physical-intimidation bullying (OR = 15.52, 95% CI [2.00, 120.69]).

Workplace Bullying and Depression
As expected, depression was significantly associated with work-related bullying (OR = 1.91, 95% CI [1.14, 3.20]) and person-related bullying (OR = 3.89, 95% CI [1.99, 7.61]). However, physical-intimidation bullying (OR = 1.23, 95% CI [0.50, 3.03]) was not associated with depression among the participants in this study (Table 4).

Discussion
This study found that being single and working in a medical/surgical nursing unit were the major determinants of nurses experiencing work-related bullying. Furthermore, being single was the only determinant of nurses experiencing person-related and physical-intimidation bullying. Work-related and person-related bullying were identified as significant determinants of depression in nurses, whereas physical-intimidation bullying was not.

Approximately 27.7% of the participants had experienced one or more of the NAQ-R items (bullying behaviors) over the previous 6-month period. Of the three domains, work-related bullying had the highest score, followed by person-related bullying. These results are different from the findings of Wright and Khatri (2015); Obeidat, Qan’ir, and Turaani (2018); and Lin, Hsiao, Lin, Yang, and Chung (2018), which all found person-related bullying to be the most common type of bullying in Columbia, Jordan, and Taiwan, respectively. However, the findings of this study are similar to those of another study conducted in Taiwan with 708 nurses (Tsai et al., 2014). This may indicate that the context of WB may differ among different cultures and settings. In the nursing profession, it remains common for nurses to work extended hours, complain of heavy workloads

TABLE 3. Logistic Regression Analysis for the Three Domains of Workplace Bullying

| Predictive Variable | Work Related | | | | | Personal Related | | | | | Physical Intimidation | | |
|---------------------|--------------|-------|-------|-------|-------|------------------|-------|------------------|-------|-------|------------------|-------|
|                     | Odds Ratio   | 95% CI|       |       |       | Odds Ratio       | 95% CI|       |       |       | Odds Ratio       | 95% CI|
| Age                 | 1.00         | [0.91, 1.09] |       |       |       | 0.95             | [0.84, 1.06] |       |       |       | 1.12             | [0.97, 1.30] |
| Years worked as a nurse | 1.00         | [0.92, 1.10] |       |       |       | 1.05             | [0.94, 1.18] |       |       |       | 0.91             | [0.78, 1.06] |
| Marital status (yes/no) | 1.89*         | [1.08, 3.33] |       |       |       | 3.51**          | [1.57, 7.89] |       |       |       | 15.52*          | [2.00, 120.69] |
| Education           |              |       |       |       |       |                  |       |       |       |       |                  |       |
| Junior college/bachelor’s or above | 0.62         | [0.30, 1.31] |       |       |       | 1.35             | [0.45, 4.07] |       |       |       | 2.20             | [0.28, 17.41] |
| Job title           |              |       |       |       |       |                  |       |       |       |       |                  |       |
| Registered nurse (no/yes) | 0.52         | [0.22, 1.20] |       |       |       | 0.66             | [0.19, 2.33] |       |       |       | 0.42             | [0.43, 4.17] |
| Working unit        |              |       |       |       |       |                  |       |       |       |       |                  |       |
| Medical/surgical ward |              |       |       |       |       |                  |       |       |       |       |                  |       |
| Critical/emergent unit | 0.60         | [0.36, 1.02] |       |       |       | 0.77             | [0.41, 1.45] |       |       |       | 0.91             | [0.39, 2.13] |
| Others              | 0.40         | [0.15, 1.06] |       |       |       | 0.73             | [0.24, 2.20] |       |       |       | 0.39             | [0.05, 3.10] |
| Shift (fixed/rotating) | 0.83         | [0.46, 1.49] |       |       |       | 0.84             | [0.41, 1.70] |       |       |       | 0.92             | [0.34, 2.48] |

Note. Hosmer–Lemeshow test for model fit: work-related ($\chi^2 = 13.31, p = .102$), personal-related ($\chi^2 = 5.51, p = .702$), and physical intimidation ($\chi^2 = 9.96, p = .268$).

*Referent group.

*p < .05. **p < .01.

TABLE 4. Association Between Workplace Bullying Domains and Depression

| Domain             | $B$  | $SE$ | Wald | $p$  | Odds Ratio | 95% CI  |
|--------------------|------|------|------|------|------------|---------|
| Work related       | 0.65 | 0.26 | 5.97 | .015 | 1.91       | [1.14, 3.20] |
| Person related     | 1.36 | 0.34 | 15.71| .000 | 3.89       | [1.99, 7.61] |
| Physical intimidation | 0.21 | 0.46 | 0.21 | .648 | 1.23       | [0.50, 3.03] |

Note. Hosmer–Lemeshow test for model fit: $\chi^2 = 0.63, p = .429$.
with unequal pay, experience conflicts with medical team members, and feel disrespected or unappreciated (Ke, Wang, & Hsu, 2016). These feelings may lead to experiences or perceptions of work-related bullying (Kao, 2011).

The participants in this study who were unmarried were more likely to experience all types of WB. No other studies have been found that support this finding. However, Tai et al. (2014) found that unmarried nurses reported less family support than married nurses. Another study on flight attendants found that greater social support was associated with less WB (Tian, 2009). Therefore, social support may be a factor that helps nurses mitigate WB. Notably, it seems that the occurrence of WB is relatively low in countries with strong gender equality protections and values prevailing (Mikkelsen & Einarsen, 2001). In Taiwan, many nurses leave their jobs after marriage because of the full-time work requirements and the nature of shift work. Thus, it is common to allow married nurses to take fewer night shifts and to be assigned less paperwork in consideration of their childcare responsibilities. As a result, unmarried nurses may work more night shifts, serve as support personnel for urgent or emergent events, and perform more non-patient-care activities (Wang, Huang, Lu, & Ho, 2007) and thus feel less supported and subsequently more bullied. These findings suggest that nurses should be fairly and properly rewarded based on job performance rather than on non-work-related standards such as marital status.

Working in medical/surgical units was shown in this study to be a primary determinant of work-related WB, echoing Vessey, Demarco, Gaffney, and Budin’s (2009) study on 303 nurses. One study found that nurses who worked in medical/surgical units reported greater job stress, fatigue, and intention to leave than those in other units (Tsai et al., 2014). Medical/surgical units are typically very busy for nurses because of the high patient-to-nurse ratio and the greater severity of illnesses and injuries treated. As a result, WB may be higher in these units, which may in turn endanger patient care quality and patient safety (Lin et al., 2018). Therefore, it is imperative to regularly review and adjust related human resource allocation mechanisms as well as the manpower for the units with higher levels of patient illness severity and acuity.

Depression was prevalent (29.8%) among the participants in this study and was found to be significantly associated with work-related and person-related bullying. This finding is consistent with previous studies showing an association between WB and psychological problems (Bardakçı & Günsen, 2016; Wright & Khatri, 2015). Moreover, Wright and Khatri’s study found only work-related and person-related bullying (not physical-intimidation bullying) to be correlated with psychological responses such as depression, indicating that different mechanisms may exist for different types of WB and depression.

Person-related bullying was associated in this study with the highest risk of depression, although work-related bullying had the highest score of the three types of WB. This indicates that person-related bullying behaviors such as spreading gossip and rumors, being the target of practical jokes, and being ignored or excluded, all of which are instigated primarily by peers, have the strongest impact on depression (Wright & Khatri, 2015). Bullying experiences often lead to perseverative and intrusive thoughts and cause psychological distress in victims (Verkuil, Atasayi, & Molendijk, 2015). This finding supports that nurse administrators should work to create a professional, trusting, and supportive work environment by encouraging nurses to respect each other, practice good communication behaviors, and bring interpersonal conflicts into the open and address them promptly (Wilson, 2016). Counseling sessions are needed to help victims learn to be assertive in bullying events (Becher & Visovsky, 2012). Colleague support and personal skills to build resilience and hope may help deter person-related bullying and the development of depression (Wilson, 2016).

It is possible that, because nurses are usually taught to be responsible and to follow orders, their superiors, with the support of the administration, may practice work-related bullying in terms of assigning unmanageable workloads or requiring compliance with unreasonable deadlines. Therefore, it is important for empowered administrators to review manpower, workplace design, policies, and organizational structures to determine whether these factors promote bullying. Nurses should be educated to recognize an optimal workload as well as work-related bullying. In addition, bullying behaviors that are perceived by the nurse should be openly discussed at staff meetings (Wright & Khatri, 2015).

Study Limitations

The study was affected by several limitations. First, it included only nurses from one large medical center and two affiliated hospitals in southern Taiwan who had at least 6 months of work experience in nursing. Thus, the sample may not be representative of the entire population of nurses. The use of a self-report questionnaire may have led responses to be affected by recall bias. The study used a cross-sectional design, and as a result, conclusions cannot be drawn regarding the causal relationships between the associated variables. Finally, the incidence and severity of WB may have been underestimated in this study because of the sensitive nature of this issue, which may encourage underreporting or avoidance of discussion.

Conclusions

In this study, work-related and person-related bullying were associated with depression, whereas physical-intimidation bullying was not associated with depression, suggesting that exposure to certain WB behaviors may not significantly increase depression risk. Other outcome measures should be considered in the future to better understand the effect of physical-intimidation bullying.

Overall, the findings suggest that nursing educators and administrators should aggressively develop WB prevention
and management strategies such as a WB reporting system and regular seminars that address bullying-related topics such as communication skills, conflict resolution, obtaining peer support, and consultation channels. WB should be handled in a timely manner to ensure protection and confidentiality. The development of written policies for zero tolerance of WB at the organizational level should be accelerated to provide a safe working environment for nurses. Finally, establishment of a legal system at the national level is needed to protect against bullying.

To prevent and reduce depression, psychological advisory departments should be established that randomly assess the emotional state of nurses to ensure the early detection of depression. WB should be managed based on the level of severity perceived by nurses rather than on the prevalence and frequency of bullying behaviors (Ma, Wang, & Chien, 2017). It is necessary to help nurses learn how to manage difficult people and situations by practicing constructive coping strategies, learning assertiveness techniques, and developing personal resources and support.

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