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Comparison of Study/Article Characteristics and Methodological Quality of International Nurse Workplace Violence Research Published Before and After the Joint Commission Sentinel Event Alert on Disruptive Behaviors

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COMPARISON OF STUDY/ARTICLE CHARACTERISTICS AND METHODOLOGICAL QUALITY OF INTERNATIONAL NURSE WORKPLACE VIOLENCE RESEARCH PUBLISHED BEFORE AND AFTER THE JOINT COMMISSION SENTINEL EVENT ALERT ON DISRUPTIVE BEHAVIORS

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Abstract

Purpose: The majority of new nurses experience workplace violence from other nurses. The purpose of this study was to compare study/research characteristics and methodological quality of international nurse workplace violence research published before and after the 2008 release of the U.S. The Joint Commission (TJC) sentinel event alert on disruptive behaviors.

Methods: Thirty-nine quantitative nurse workplace violence research articles published between 2001 and 2012 were assessed and divided into two groups: articles published (a) before the 2008 TJC sentinel event alert or the same year, i.e., 2001-2008 (BTJC) and (b) after the 2008 TJC sentinel event alert, i.e., 2009-2012 (ATJC).

Major Results: There was a significant association between where an article was published (U.S. or non-U.S.) and group (BTJC and ATJC, $p = .036$). In the ATJC group, North America had more articles than expected by chance, and Australia/New Zealand had fewer articles than expected by chance. In the ATJC group, journal subspecialty was significantly associated with group ($p = .004$). The number of articles published in management/staff development journals was almost double the number of articles in the BTJC group. However, there was no difference in methodological quality as measured by the Medical Education Research Study Quality Instrument between the BTJC and ATJC groups. The design of the studies of both groups was predominantly single group, cross-sectional.

Conclusions: These findings suggest that 2008 TJC sentinel event alert has promoted U.S. nursing management to address workplace violence among nurses. Additionally, the methodological quality of this research area could be advanced by conducting more intervention studies to prevent and eliminate workplace violence among nurses.

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Chapter 1

Statement of the Problem

More than 75% of newly licensed nurses with less than three years of experience are involved in disruptive behaviors or workplace violence with other nurses (Berry, Gillespie, Gates, & Schafer, 2012). Nurse workplace violence in the hospital setting is detrimental because this behavior compromises patient safety. Almost one-fourth of all unanticipated morbidity and mortality events are linked to nurse workplace violence (Rosenstein & O'Daniel, 2005; TJC, 2008).

In 2008, TJC issued a sentinel event alert, "Behaviors That Undermine a Culture of Safety" that describes the nature, consequences, and occurrence of disruptive behaviors in the health care setting. The alert also describes two elements of performance and offers 11 recommended actions to address workplace violence in health care organizations (TJC, 2008). One TJC recommended action is for health care organizations to create a " 'zero tolerance' [policy] for intimidating and/or disruptive behaviors" (TJC, 2008). The other suggested actions address assessment, development of a reporting/surveillance system, and the implementation of "non-adversarial" interventions (TJC, 2008). The comprehensiveness of this alert from assessment to intervention and its directive of zero tolerance might have been an impetus for nurse leaders and researchers to increase and enhance nurse workplace violence research in the United States and other countries. Therefore, the purpose of this study was to compare study/research characteristics and methodological quality of international nurse workplace violence

research published before and after the 2008 release of the TJC sentinel event alert on disruptive behaviors.

Chapter 2

Literature Review

Because more than 70% of nurses experience workplace violence (Allen, Cowie, & Smith, 2009; Cleary, Hunt, & Horsfall, 2010; MacIntosh, 2006), this chapter describes the nature of workplace violence, its significance, related mandates and policies, and the methodological quality of bullying research.

Definition of Nurse Workplace Violence

Workplace violence is often defined as "repeated unwanted psychological, physical, sexual abuse or harassment" (MacIntosh, 2006, p. 666). Workplace violence usually contains frequent, persistent, intimidating, objectionable behaviors that make the targeted person of the behavior feel isolated and undervalued (Hastie, 2006; MacIntosh, 2005, 2006; Sá & Fleming, 2008), and can be carried out by colleagues, supervisors, and management (Dilek & Aytolan, 2007; Strandmark & Hallberg, 2007). Examples that reflect nurse bullying include failing to respect privacy, purposely concealing important patient care information, breaking confidences, spreading rumors, assigning excessive workloads, micromanaging, and humiliating the nurse publicly (Abe & Henly, 2010; Dilek & Aytolan, 2008; Stanley, Martin, Michel, Welton, & Nemeth, 2007; Strandmark & Hallberg, 2007). According to Gabrielle, Jackson, and Mannix (2008), nurses who self-identified being bullied defined the behavior as having a lack of necessary support to carry out their duties, leading them to feel what they term, "burn out." The end result of this bullying is that many nurses leave their positions either by choice or by demand from management (Gabrielle et al., 2008; Jackson, Firtko, & Edenborough, 2007; MacIntosh, 2005).

Prevalence of Nurse Workplace Violence

The prevalence of workplace violence in nursing ranges from 15%-77% (Cooke, 2007; Grenny, 2009). New graduates and aged pre-retirees most often experience the majority of the bullying (Gabrielle et al., 2008), and the nurses most likely to perpetrate these bullying behaviors are (a) those threatened by new employees; (b) part of a coalition that helps to hide the bullying behavior; or (c) those who perceive older nurses as unable to adapt to the constant innovations, including the use of technology, that the health care field displays (Hutchinson, Vickers, Jackson, & Wilkes, 2006; Lewis, 2006; MacIntosh, 2006). The perpetrators are usually in power or supervisory positions, such as charge nurses or nurse managers, but can even be subordinates, as in cases of bullying toward older nurses (Abe & Henly, 2010).

Many nurse managers (nurses themselves) legitimize these behaviors by also participating in rumor spreading and/or minimizing the complaints of those nurses who state they have been bullied (Hutchinson et al., 2006; Pope & Burnes, 2009; Strandmark & Hallberg, 2007). In addition, nursing supervisors in specialty areas that do not openly discuss behaviors of their nurses are more prone to the behavior continuing against the nurse, adding to their feelings of incompetence and inability to effectively work in the environment (Camerino et al., 2008).

Impact of Nurse Workplace Violence

Workplace violence (a) is associated with health problems of the nurses; (b) reduces nurse retention; (c) increases staffing costs; and (d) potentially compromises patient care. Psychosomatic complaints of those bullied include headaches, anxiety, depression, hypertension, weight gain or loss, sleep disturbances and depression; physical

effects include hypertension, pain, coronary heart disease, increased body mass index, and sleeplessness (MacIntosh, 2005; Sá & Fleming, 2008). Nurses who have been the target of bullying also have a greater incidence of missed work due to post-traumatic stress disorder (MacIntosh, 2005; Yildirim, Yildirm, & Timucin, 2007). In addition, bullied nurses are more likely to have decreased job satisfaction and are more likely to leave nursing as a profession (Abe & Henly, 2010). Consequently, nurse bullying exacerbates the nursing shortage (Jackson et al., 2007) and leads to fewer providers for patients on a daily basis.

Workplace violence also increases staffing costs. This increase occurs because of additional recruiting and training, the number of sick calls by nurses, the increased number of worker's compensation cases, and law suits from both bullied nurses against their workplaces and patients who have been injured because of medical errors related to bullying (Camerino et al., 2008; Lewis, 2006; Sá & Fleming, 2008). Cost increase of call offs from staff nurses increases requiring part time or fill in nurses in addition to paying sick pay for the full-time staff nurses, further driving up staffing costs (Camerino et al., 2008; Jackson et al., 2007; Sá & Fleming, 2008). In a Minnesota study of costs of nurse bullying it was estimated that the per case cost as a result of assault was $17,585 for licensed practical nurses, with lower hourly wages to consider as well as lower costs for training compared with $31,643 for registered nurses with greater training and wage costs (McGovern, et al., 2000). TJC estimates a hospital that employs 600 nurses at a yearly cost of $46,000 per registered nurse would pay $5,520,000 per year in costs to replace nurses leaving the hospital nursing staff (The Joint Commission, 2005). In conclusion,

nurse bullying is a problem that has far-reaching effects. This problem affects patient safety, exacerbates the nursing shortage, and contributes to overall health care costs.

Policies, Standards, and Statements Related to Nurse Workplace Violence

Professional and regulatory organizations worldwide have developed policies that call for the health care community to reduce and eliminate intimidating, disruptive, or inappropriate behaviors among health care workers in the workplace. This section will highlight notable policies, standards, and statements from these groups in chronological order, starting with the earliest policy.

In 2003, the World Health Organization released a report on workplace violence in the health sector (Richards, 2003). The report addresses victim management measures, including the reporting of incidents of workplace violence, medical treatment, peer and manager support, representation, legal aid, and union/professional initiatives, time off and return to work, staff training, and policy making.

During the next year, the Nursing Organizations Alliance™ (The Alliance) published nine principles and elements of a healthful practice/work environment. The Alliance consists of nursing organizations, and its purpose is "to provide a forum for identification, education[,] and collaboration building on issues of common interest to advance the nursing profession" (http://www.nursing-alliance.org/content.cfm/id/about_us). In the principles and elements of a healthful practice/work environment document, two of the nine principles and elements that directly relate to nurse workplace violence are "Collaborative Practice Culture" (#1) and "Communication Rich Culture" (#2). The "Collaborative Practice Culture" covers "[r]espectful collegial communication & [sic] behavior," (Nursing Organizations

Alliance, 2004, p. 1) and "clear and respectful" (Nursing Organizations Alliance, 2004, p. 1) is listed under "Communication Rich Culture." During an unspecified year, the American Organization of Nurse Executives Board of Directors endorsed these principles and elements.

About one year later, the TJC produced the white paper, "Health Care at the Crossroads," in which physician disruptive behaviors on nurses were mentioned as one contributing factor to the nursing shortage. As part of this discussion, the TJC recommends to "[a]dopt zero-tolerance policies for abusive behaviors by health care practitioners" (TJC, 2005, p. 7).

Also, in 2005, the American Association of Critical Care Nurses (AACN), a professional nursing organization, released six standards for creating and maintaining healthy patient care work environments. These standards are a follow-up to the AACN's 2001 commitment "to actively promote the creation of healthy work environments that support and foster excellence in patient care wherever acute and critical care nurses practice" (AACN, 2005, p. 4). The standards were guided by two platforms. One of these platforms is as follows: "Work and care environments must be safe, healing and humane, respectful of the rights, responsibilities, needs and contributions of patients, their families, nurses and all health professionals" (AACN, 2005, p. 5).

Additionally, multiple groups within Australia produced reports that described the problem of workplace violence in the health care setting, including disruptive behaviors among nurses, and recommendations for addressing this problem. The activities of these groups are described in an issues paper, "National Overview of Violence in the Workplace," prepared by the Royal College of Nursing, Australia (n.d.). For example, the

Victorian Taskforce on Violence report describes the literature review and survey of public health care facilities that the Victorian Taskforce on Violence conducted and lists 29 recommendations "to provide a safer workplace for nurses and all health care workers" (p. 7). The recommendations cover violence to nurses by patients and others and by other nurses.

The CENTER for American Nurses (CENTER) is another group that released a position statement about workplace violence among nurses. The CENTER is an incorporated organization of the American Nurses Association and its mission is "to actively collaborate and partner with individuals and groups to create healthy work environments" (The American Nurse, 2010). The CENTER holds workshops and publishes on lateral violence and bullying. In 2008, the CENTER issued a position statement "to support the registered nurse to work in an effective and collaborative manner with other nurses, healthcare professionals, and administrators and to develop appropriate policies, codes of conduct and educational programs to eliminate disruptive behavior from the workplace" (p. 1). The CENTER's position is as follows:

> "there is no place in a professional practice environment for lateral violence and bullying among nurses or between healthcare professionals. All healthcare organizations should implement a zero tolerance policy related to disruptive behavior, including a professional code of conduct and educational and behavioral interventions to assist nurses in addressing disruptive behavior" (2008, p. 1).

As part of this position statement, the CENTER defines three types of disruptive behaviors in the workplace, gives a brief history of nurse workplace violence, and recommended strategies at multiple levels (e.g., nurses, employer/health care

organizations, nursing continuing education, nursing education, and nursing research) to eliminate these disruptive behaviors, and provides a Zero Tolerance for Abuse Policy and Procedure for a health care organization to adopt.

Later in 2008, TJC released the sentinel event alert, "Behaviors That Undermine a Culture of Safety" that describes the nature, consequences, and occurrence of disruptive behaviors in the health care setting. This description differs from the 2005 white paper in that the 2008 alert mentions other health care workers besides physicians and nurses. "… these behaviors occur … pharmacists, therapists, and support staff, as well as among administrators" (TJC, 2008, paragraph 3). The alert also describes two elements of performance and offers 11 suggested actions to address workplace violence in health care organizations (TJC, 2008). One TJC suggested action is for health care organizations to create a " 'zero tolerance' [policy] for intimidating and/or disruptive behaviors" (TJC, 2008). The other suggested actions address assessment, development of a reporting/surveillance system, and the implementation of "non-adversarial" interventions (TJC, 2008).

In 2010, the American Nurses Association issued a Code of Ethics for Nurses that consists of nine provisions. Provision 1.5, "Relationships with colleagues and others," (American Nurses Association [ANA], 2010, pp. 4-5) is one that specifically applies to the prevention of nurse workplace violence. Also, another provision that relates to the prevention of nurse workplace violence is Provision 6.3, "Responsibility for the health environment" (ANA, 2010, p. 13): "The nurse is responsible for contributing to a moral environment that encourages respective interactions with colleagues, support of peers" (ANA, 2010, p. 13).

In conclusion, during the past 10 years, international regulatory and professional nursing groups have addressed nurse workplace violence by crafting policies, standards, and statements. In 2008, both the CENTER and TJC, two highly visible organizations, released a zero tolerance policy for nurse workplace violence. As part of these policies, both organizations call for implementing interventions to address this problem. One distinguishing feature of the CENTER's (2008) policy is a three-prong nursing research strategy:

> • Continue to research the contributing factors and the process of lateral violence and bullying behaviors.
>
> • Build on previous and current studies while seeking to explore innovative interventions on how to eliminate manifestations of disruptive behaviors
>
> • Evaluate the efficacy of promising strategies in eliminating disruptive behaviors (lateral violence and bullying) from the workplace (p. 6).

Two actions of this strategy focus on researching interventions to eliminate nurse workplace violence. These actions represent advancing the methodological quality of nurse workplace violence research.

Methodological Quality of Research

The methodological quality of quantitative educational research can be measured using an instrument called, the Medical Education Research Study Quality Instrument (MERSQI). This instrument, which was developed by Reed and colleagues, consists of six domains (Reed et al., 2008). The six domains are (a) study design, (b) type of data being examined (subjective or objective), (c) sampling, (d) outcomes, (e) validity of assessment, and (f) data analysis (Reed et al., 2008).

These six domains are also domains by which the quality of non-educational research can be measured and are critical to any type of research. Study design is important as it is the approach that produces the answers to the research question (Burns & Grove, 2003). Data, objective or subjective, and outcomes are the answers to the research question. Quality of sampling is also important to assure the right people are in the study and that sample size is adequate and addresses the study's purpose (Burns & Grove, 2003). Validity of assessments is important to assure that the data collection tool, the instrument, is appropriate for the research question, while data analysis helps determine if findings are relevant for the general population (Burns & Grove, 2003).

Each domain of the MERSQI consists of 1-4 items that are scored using an ordinal scale. The total maximum MERSQI score is 18, which represents the highest methodological quality (Reed et al., 2007).

The reliability of the MERSQI has been tested primarily for medical and nursing educational research. Using medical educational research, Reed and colleagues have reported intraclass correlation coefficients and Cronbach's alpha of the MERSQI. Intraclass correlation coefficients of the MERSQI for the items tested were from 0.76 to 0.98 and Cronbach's alpha score was 0.6 (Reed et al., 2007). In a nursing educational study, Yucha et al. (2011) reported a Cronbach's alpha of 0.547.

To assess criterion validity of the MERSQI, Reed et al. examined the relation between total MERSQI scores and three variables. One variable was the median global quality rating of 50 medical education research articles by two nationally known experts of medical education research (Reed et al., 2007). Total MERSQI scores and the expert quality ratings were strongly correlated ($\rho = .73$; $p < .001$; Reed et al., 2007). A second

variable used to examine criterion validity was the 3-year citation rate. Total MERSQI scores and the 3-year citation rate were significantly associated ($p = .003$; Reed et al., 2007). The third variable was journal impact factor. A significant association was found between total MERSQI scores and Journal Impact Factor ($p = .003$; Reed et al., 2007).

Chapter 3

Methods

Study Purpose

The purpose of this study was to compare study/research characteristics and methodological quality of international nurse workplace violence research published before and after the 2008 release of the TJC sentinel event alert on disruptive behaviors.

Study Design, Sample, and Procedure

The design of this study was a retrospective design involving research article analysis. The article analysis was conducted using CINHAL database through the University of Nevada, Las Vegas Libraries website. The search was limited to peer-reviewed research articles in English between the years of 1998 and 2012. Search key words were bullying, disruptive behavior, horizontal violence, lateral violence, and mobbing. Each key word was searched separately. Collectively, these searches yielded 129 articles. Six of these 129 articles were not accessible through CINHAL, Scopus, or Pub Med. Additionally, emailing the first author of these six articles did not yield a copy of the article for review. Articles were excluded if they focused on (a) student nurses, (b) physician to nurse bullying, (c) patient to nurse bullying, (d) grade school and high school students bullying, and (e) bullying in other professions other than nursing. Also, review articles, systematic reviews and concept analysis papers were excluded. Articles were analyzed when the majority of subjects were nurses, at least one of the study's specific aims addressed nurse bullying or nurse workplace violence or interaction, and quantitative data were collected. Therefore, 39 articles were analyzed.

The analysis consisted of assessing study/report characteristics and study methodological quality. These data were collected by two independent reviewers. Before the independent reviews started, five articles were reviewed together. The two reviewers' data were compiled in a Microsoft Excel spreadsheet. When data differed, consensus was reached.

Protection of Human Subjects

No human subjects were used in this research project. Because the results of this project are likely to be published, a UNLV Institutional Review Board application was submitted as per UNLV policy. Due to no human subjects being involved in this study, the UNLV Institutional Review Board excluded it from review.

Study Variables

This article analysis involved seven study variables. These study variables are defined in Table 1.

Data Collection Methods and Procedures

This section describes the data collection methods and procedures of the study variables. Table 1 contains a detailed description of these study variables.

Group. On July 9, 2008, TJC published a sentinel event alert. Based on the timing of this alert, articles were divided into two groups: 2001-2008 and 2009-2012. Articles in these two groups represent articles published before and after this TJC alert, respectively. These two groups are identified as BTJC and ATJC.

Study Location. The country in which the study occurred was recorded on a Study/Article Characteristics Sheet. If no single country was indicated or if the study occurred in multiple countries, the country of the first author was used. Based on the study location, articles were categorized into five regions (Table 1). Articles were sorted

into regions by the group variable. Additionally, articles were designated as U.S. and non U.S. by the group variable.

Journal Specialty. Journal specialty was based on the journal title of the article. This title was recorded on the Study/Article Characteristics Sheet. Table 1 lists the two specialty categories, and the articles were sorted into these categories by the group variable.

Journal Subspecialty. After identifying the journal specialty of each article, the journal subspecialty was determined. Three categories of subspecialty were created (Table 1). The articles were sorted into these categories by the group variable.

Funding. Each article was examined for a specific funding statement. The presence or absence of the statement was recorded on the Study/Article Characteristics Sheet (Table 1).

Journal Impact Factor. Using the Web of Science/Journal Citation Reports database through the University of Nevada, Las Vegas Libraries website, the journal impact factor was obtained for each article (Table 1). Because Journal impact factor is reported annually, the year of the article publication was recorded for each article. For articles published in 2012, the publication year of 2011 was used because the 2012 journal impact factors were not available.

Methodological Quality. Methodological quality was assessed using the MERSQI. The MERSQI covers six domains and is a 10-item instrument. The six domains of a MERSQI study are (a) sampling, (b) data type meaning objective or subjective data, (c) study design, (d) data analysis, (e) validity of assessments, and (f)

outcomes. Each domain rated up to three points for a possible total score of 18 points per article. In the current study, the Cronbach's alpha of the MERSQI was 0.377.

Policies, Standards, and Statements Related to Nurse Workplace Violence. The introduction, discussion, and implications sections of articles were reviewed to identify policies, standards, and statements related to nurse workplace violence and patient safety. This information was recorded on the Study/Article Characteristics Sheet.

Research Hypotheses

Hypothesis #1. The journal impact factor of articles published after the TJC 2008 alert will be higher than the articles published before the TJC 2008 alert.

Hypothesis #2. The MERSQI score of articles published after the TJC 2008 alert will be higher than the MERSQI score of articles published before the TJC 2008 alert.

Statistical Analysis

Statistical analysis was performed using the Statistical Program for the Social Sciences (SPSS version 20.0). The relationship between group and study/article characteristics was analyzed using both the Pearson Chi-Square test and the likelihood ratio test in the event that there were expected counts < 5. Hypothesis #1 was tested using student's t-test after testing for normality using the Shapiro-Wilk statistics. For Hypothesis #2, a Mann-Whitney rank test was performed because of one outlier for each group. The relationship between group and individual MERSQI item score was analyzed by the Pearson Chi-Square test. Alpha was set at .05.

Chapter 4

Results

Study/Article Characteristics

Of the 39 analyzed articles, 12 were published 2001-2008, before or the year of the 2008 TJC sentinel event alert (BTJC), and 27 articles published 2009-2012, after the 2008 TJC Sentinel Event Alert (ATJC). As indicated, the number of articles increased about two-fold after 2008.

Table 2 lists the study/article characteristics results. The first study of this analysis was published in 2001 and from Australia. The 17 studies conducted in North America occurred in the United States and Canada. The seven studies conducted in Europe occurred in the Balearic Islands, Denmark, England (n = 2), Italy, Lithuania, and Portugal. The six studies conducted in the Middle East occurred only in Turkey. The two studies conducted in Asia occurred in Japan and Taiwan. In 2001, only one study was published coming from Australian research. There was a significant association between where an article was published (U.S. or non-U.S.) and group ($G^2 = 10.255$; $p = .036$). In the ATJC group, North America had more articles than expected by chance, and Australia/New Zealand had fewer articles than expected by chance.

Table 3 lists the journals in which the 39 articles were published. In total, the 39 articles were published in 25 different journals.

Journals were also assigned to three subspecialty categories: management/staff development; midwifery/surgery/mental health; or no subspecialty. In the ATJC group, journal subspecialty was significantly associated with group ($G^2 = 11.044$; $p = .004$). The

number of articles published in management/staff development journals was almost double the number of articles in the BTJC group (Table 2).

Studies that were reported to be funded occurred in Australia, Europe, and North America. However, funding was not reported in the majority (71.79%) of articles, and there was no significant relationship between group and funding.

Hypothesis #1

In the BTJC group, only 5 out of the 12 articles (41.66%) were published in journals with a published impact factor (Table 3). In the ATJC group, 22 out of 27 (81.48%) were published in journals with a published impact factor (Table 3). The mean Journal Impact Factor was 1.356 (SD = 0.260) for the BTJC group and was 1.219 (SD = 0.815) for the ATJC group. There was no statistical difference in journal impact factor between the groups $t = 0.151$, $p = 0.441$, 1-tailed test).

Methodological Quality

Methodological quality was assessed using the MERSQI. Table 4 lists the item frequency and percentages per group. Overall, the subject response rate was < 50% or not reported. Most studies involved more than two institutions, subject report data, data analysis beyond descriptive statistics, and behavioral outcomes. Regarding instrument validity, internal structure was reported, but there were no relationships to other variables. The item content validity was the only item to show a relationship with group. In the ATJC group, reporting content validity was unexpectedly low for ATJC group ($G^2 = 5.97$; $p = .015$).

Hypothesis #2

The mean MERSQI score was 10.33 (SD = 1.67) for the BTJC group and was 10.24 (SD = 1.61) for the ATJC group. There was no significant difference in total MERSQI score between the two groups (U = 52, p = 0.434, 1-tailed test).

Policies, Standards, and Statements Related to Nurse Workplace Violence

Overall, policies, standards, and statements related to nurse workplace violence were mentioned in less than one-half of the 39 studies. In the BTJC group, only 3 of the 12 (25%) articles referred to policies, standards, and statements related to nurse workplace violence. In comparison to this group, the mention of these policies, standards, and statements doubled in the ATJC group (*n* = 14, 51.85%). In the ATJC group, the most frequently referenced policy, standard, or statement was the 2008 TJC sentinel event alert. Studies that occurred in the United States (*n* = 5) and Japan (*n* = 1) mentioned this policy.

Chapter 5

Discussion and Implications

Four novel, significant findings of this study are (a) the number of research articles on nurse workplace violence increased almost two-fold after the 2008 TJC sentinel event alert, (b) the number of research articles on this topic from the United States significantly increased after this alert, (c) the number of research articles on this topic from Australia significantly decreased after this alert, and (d) nurse workplace violence articles published after this alert were unexpectedly found in management/staff development specialty journals. Additional results are that the funding rate of nurse workplace violence studies is low, and the journal impact factor and methodological quality were not significantly different between articles published before/same year and after this alert. Therefore, the two study hypotheses were not supported.

Overall, the number of research articles on nurse workplace violence increased almost two-fold after the 2008 TJC sentinel event alert. Additionally, the number of research articles on nurse workplace violence and from the United States unexpectedly increased ten-fold after the publication of the 2008 TJC sentinel event alert on disruptive behaviors. These findings suggest that this alert may be associated with an increase in nurse workplace violence research in the United States. In the United States, this increase may stem from an interest in the link between nurse workplace violence and health care costs.

In contrast to the number of research articles from the United States, the number of research articles on nurse workplace violence and from Australia unexpectedly decreased after the publication of the 2008 TJC sentinel event alert on disruptive

behaviors. One possible reason for this decrease is the enforcement of Australian laws related to occupational violence or workplace harassment.

Another major finding of the current study is the statistically unexpected publication of nurse workplace violence articles in management/staff development specialty journals after the TJC alert. In the alert, specific statements address leaders and managers' role in addressing nurse workplace violence and a need for coaching or training in skills related to this role. Charge nurses, nurse managers, and directors have been identified as perpetrators in 25-59% of cases (Johnson & Rea, 2009). Additionally, the alert calls for non-physician and physician staff development as well to be educated about professional behavior. Another reason this finding is notable is that management is searching for ways to reduce continuing costs associated with nurse workplace violence (Ceravolo, Schwartz, Foltz-Ramos, & Castner, 2012).

Using the MERSQI, methodological quality was not significantly different between the two groups. This finding means that the scientific approach of nurse workplace violence quantitative research was similar before and after the 2008 TJC sentinel event alert. Although the TJC alert called for the implementation of interventions, the alert did not address intervention research. Perhaps if the alert would have addressed the systematic evaluation of these interventions, then more studies would have focused on intervention research, which usually involves two nonrandomized or randomized distinct groups and represents more advanced methodological quality.

Similar to the methodological quality findings, the journal impact factor did not show a significant difference between the two groups in this study. This finding suggests

that the TJC alert did not affect or enhance the publication quality of nurse workplace violence research.

The study's findings indicate that overall funding of nurse workplace violence research is low, and the TJC alert was not associated with a research funding increase. Possible explanations are this topic is outside the portfolio of funding agencies, health care organizations are not interested in allocating funds for this type of research, or investigators do not seek funding for this type of research through external or internal funding mechanisms. However, research funding may ultimately be helpful for eliminating workplace violence because of funding's positive association between methodological quality (Reed et al., 2007; Yucha et al., 2011). As clinical nursing research has shown, funded high methodological studies can often lead to identifying effective interventions for reducing or preventing a problem.

Study Limitations

There are three major limitations of this study. One limitation of this study is that it is a retrospective study that relied upon printed, edited information. The retrospective design is appropriate for this analysis, but limits the amount of information that can be collected because the researcher is not collecting the data as the study progresses. For example, a prospective approach might have allowed the researcher to collect response rates for all studies. The response rate was not reported by many studies. Furthermore, because data collection relied upon printed, edited information is possible that details were omitted because of journal space limitations.

A second limitation is the sample size. The total study sample size was 39 quantitative research articles with 12 articles in the BTJC group and 27 articles in the

ATJC group. Although a power analysis is the best strategy for determining sample size, this strategy could not be used in this study because of the lack of research in the area. This study is the first investigation to examine study/article characteristics and methodological quality of nurse workplace violence articles. Also, the sample size was limited by the study design. As a retrospective study focusing on quantitative research, the sample could only include completed, published quantitative studies and not in progress, unpublished quantitative studies. Several studies were excluded because they did not include a quantitative portion.

Another point about sample size relates to the assessment of methodological quality. Previous use of the MERSQI has entailed an assessment of more than 100 quantitative articles (Reed et al., 2007; Yucha et al., 2011). However, these studies were broad in nature, i.e., medical education or nursing education. A focus on nurse workplace reflects a more defined field that lends itself to a narrower research portfolio.

Another limitation is that the study period after the TJC alert started one year after the alert. However, the influence of the alert on published nurse workplace research is likely to take more than one year. For example, the timeline of a typical single group, cross-sectional study is as follows:

1-6 months: Design study and receive human subject approval

7-12 months: Collect and analyze data.

13-18 months: Prepare and submit manuscript.

19-24 months: Revise manuscript and receive manuscript acceptance.

25+ months: Manuscript published.

If an intervention study is conducted, then this timeline is likely to be longer. Therefore, the influence of the TJC alert on published nurse workplace research may be more evident with articles published at least two years after the alert, i.e., 2010 and later.

Conclusions

Two major conclusions can be stated from these findings. One conclusion is that the 2008 TJC sentinel event alert on disruptive behaviors has promoted U.S. nursing management to address workplace violence among nurses because of the number of articles published after the alert more than doubled. A second conclusion is that the methodological quality of this research area could be advanced by conducting more intervention studies to prevent and eliminate workplace violence among nurses.

APPENDIX

Table 1

Seven Study Variables

Study Variable	Definition	Designation
Group	Article publication year	BTJC = publication year 2001-2008 ATJC = publication year 2009-2012
Study Location	Study setting or location of first author	Region = Europe; North America; Asia; Australia/New Zealand; or Middle East U.S./Non-U.S.
Journal Specialty	Type of journal in which article was published	Clinical specialty; no clinical Specialty
Journal Subspecialty	Type of clinical journal in which the article was published	Management/staff development; midwifery/mental health/ surgical; or no subspecialty
Funding	Statement of non-in kind financial support from an outside source	Yes or no
Journal Impact Factor	Journal Impact Factor for the article publication year[a]	Journal citation report 1 year value
Methodological Quality	MERSQI	10 item scores and 1 total score

Note. MERSQI = Medical Education Research Study Quality Instrument.
[a] The 2011 impact factor was used for 2012 articles.

Table 2

Study/Article Characteristics

	BTJC		ATJC	
	n	%	*n*	%
Total article number	12	30.77	27	69.23
Journal specialty				
No specific clinical type	8	20.51	18	46.15
Specific clinical type	4	10.26	9	23.08
Journal subspecialty				
Non-specialty	8	20.51	18	46.15
Management/staff development	4	10.25	7	17.94
Mental health/midwifery/surgery	0	0.00	2	5.12
Region				
Europe	3	7.69	4	10.25
North America	2	5.12	15	38.46
Asia	0	0.00	2	5.12
Australia/New Zealand	5	12.82	2	5.12
Middle East	2	5.12	4	10.25
U.S./Non-U.S.				
U.S.	2	5.12	13	33.33
Non-U.S.	10	25.64	14	35.89
Funded				
Yes	4	10.25	7	17.94
No	8	2.51	20	51.28

Table 3

Journal Title, Publication Year, and Journal Impact Factor

	BTJC		ATJC	
Journal Title	Year	Journal Impact Factor	Year	Journal Impact Factor
AORN Journal	2003	None listed		
Archives of Psychiatric Nursing			2011	0.921
Collegian	2003	None listed		
International Journal of Nursing Practice	2006	None listed		
International Journal of Nursing Studies	2008	2.310	2012	2.178
International Nursing Review			2009	0.693
			2010	0.588
			2012	1.038
Issues in Mental Health Nursing	2007	None listed		
	2008	None listed		
Journal for Nursing in Staff Development			2012	None listed
Journal of Advanced Nursing	2001	0.797	2010	1.540
	2003	0.998	2011	1.477
Journal of Clinical Nursing	2007	1.301	2011	1.118
	2008	1.376	2012	1.118
Journal of Continuing Education in Nursing			2011	1.054
Journal of the New York State Nurses Association			2010	None listed
Journal of Nursing Administration			2009	1.150
			2011	1.419
Journal of Nursing Management				
Journal of Nursing Scholarship			2012	1.490
Journal of Professional Nursing			2009	0.755
MIDIRS Midwifery Digest	2004	None listed		
Nursing 2012			2012	None listed
Nursing Administration Quarterly			2009	None listed
Nursing Economic$			2012	0.844
Nursing Ethics			2010	1.085
Nursing Research			2010	1.785
Nurse Researcher	2008	None listed		
Nursing Times			2009	None listed
Research in Nursing & Health			2011	1.708

Table 4

MERSQI Item and Total Scores

Domain	MERSQI ITEM	BTJC *n* (%)	ATJC *n* (%)
Study Design	Single group cross-sectional or single-group posttest only	12 (100.00)	23 (85.18)
	Single group pretest and posttest	0	4 (14.81)
	Nonrandomized, two or more groups	0	0
	Randomized controlled trial	0	0
Sampling	*NO. OF INSTITUTIONS STUDIED*		
	1	2 (16.66)	8 (29.62)
	2	1 (8.33)	2 (7.40)
	> 2	9 (75.00)	17 (62.96)
	RESPONSE RATE PERCENTAGE		
	Non applicable	0	2
	< 50% or not reported	6 (50.00)	16 (59.25)
	50-74%	5 (41.66)	8 (29.62)
	≥ 75%	1 (8.33)	1 (3.70)
Type of Data	Assessment by study participant	12 (100.00)	24 (88.88)
	Objective measurement	0	3 (11.11)
Validity of	*INTERNAL STRUCTURE*		
Evaluation	Not applicable	0	0
Instrument	Not reported	5 (41.66)	7(25.92)
	Reported	7 (58.33)	20 (74.07)
	CONTENT VALIDITY		
	Not applicable	0	0
	Not reported	5 (41.66)	22 (81.48)
	Reported	7 (58.33)	5 (18.51)

	RELATIONSHIPS TO OTHER VARIABLES		
	Not applicable	0	0
	Not reported	11 (91.66)	24 (88.88)
	Reported	1 (8.33)	3 (11.11)
Data	*APPROPRIATENESS OF ANALYSIS*		
Analysis	Inappropriate for study design or type of data	1 (8.33)	2 (7.40)
	Appropriate for study design & type of data	11 (91.66)	25 (92.59)
	COMPLEXITY OF ANALYSIS		
	Descriptive analysis only	3 (25.00)	5 (18.51)
	Beyond descriptive analysis	9 (75.00)	22 (81.48)
Outcomes	Satisfaction, attitudes, perceptions, opinions, general facts	0	0
	Knowledge, skills	0	0
	Behaviors	8 (66.66)	19 (70.37)
	Patient/health care outcomes	4 (33.33)	8 (29.62)

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References References and letters of recommendation available on request.