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ScienceDirect

Nurs Outlook 67 (2019) 567–577

Nursing Outlook

www.nursingoutlook.org

Relationships among demands at work, aggression, and verbal abuse among registered nurses in South Korea

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ARTICLE INFO

Article history:
Received 29 September 2018
Received in revised form
27 March 2019
Accepted 27 April 2019
Available online May 1, 2019.

Keywords:
Aggression
Emotional demands
Nurse
Hostility
Verbal abuse

ABSTRACT

Background: In order to improve organizational culture and job outcomes, it is important to characterize and better understand the relationship between aggression and verbal abuse among nurses.

Purpose: To examine the relationships among demands at work, aggression, and verbal abuse among nurses.

Methods: A cross-sectional study was conducted using survey data from three tertiary hospitals located in South Korea. Sixteen nursing units were selected and 378 nurses' data were used as the final sample. The relationships were examined by multiple linear or logistic regression analyses.

Findings: More than 70% of the nurses had experienced at least 1 type of verbal abuse. Higher physical aggression and hostility were significantly related to greater verbal abuse experience.

Conclusion: To prevent the vicious cycle of victims becoming perpetrators, it is necessary to develop and implement concrete strategies to manage verbal abuse and aggression among nurse colleagues.

Cite this article: Chang, H.E., Park, M.Y., Jang, H., Ahn, S., & Yoon, H.-J. (2019, September/October). Relationships among demands at work, aggression, and verbal abuse among registered nurses in South Korea. Nurs Outlook, 67(5), 567–577. https://doi.org/10.1016/j.outlook.2019.04.007.

Introduction

Verbal abuse is the most prevalent type of workplace violence experienced by registered nurses (ALBashtawy, 2013; Chang & Cho, 2016; Esmaeilpour, Salsali, & Ahmadi, 2011; Park, Cho, & Hong, 2015). Registered nurses are at the front line of patient care, and must cooperate with others working in different departments in the hospital; therefore, they are more likely to be exposed to several types of violence from various sources. Previous studies have reported that nurses experienced physical, verbal, and emotional types of violence (Roche, Diers, Duffield, & Catling-Paull, 2010; Spector, Zhou, & Che, 2014) from patients, patients' families, physicians, and colleague nurses

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https://doi.org/10.1016/j.outlook.2019.04.007

(Park et al., 2015). Additionally, several studies have reported that more than 50% of nurses had been exposed to some form of violence in the workplace (Chang & Cho, 2016; Farrell & Shafiei, 2012; Spector et al., 2014; Zhang et al., 2017) and that the prevalence of nonphysical violence was over 60% (Spector et al., 2014; Zhang et al., 2017); moreover, these results were consistent across various countries (Spector et al., 2014). According to Sofield and Salmond (2003), physicians were the most frequent perpetrators of verbal abuse directed toward nurses in their workplace. However, Chang and Cho (2016) showed that, despite the lower frequency of violence by nurse colleagues compared to other perpetrators, it had a stronger impact on newly licensed nurses' negative job outcomes. Because most nurses are female, aggressive behavior between nurse colleagues is more likely to be nonphysical (verbal abuse or emotional abuse) than physical (Dellasega, 2011). Nonphysical violence can be carried out both overtly and covertly, and when it occurs among colleagues, it can be more persistent than violence from other sources. Furthermore, persistent workplace violence may cause more negative job outcomes. According to a previous study, the most frequent type of violence toward newly licensed nurses perpetrated by nurse colleagues was verbal abuse (46.3%), followed by bullying (31.8%). Violence from nurse colleagues was associated significantly with lower job satisfaction, lower commitment to the workplace, higher burnout, and higher intent to leave (Chang & Cho, 2016). Another study examined the experiences of violence of 970 nurses, and found that 619 (63.8%) nurses had been exposed to verbal abuse, including 64 (10.3%) from nurse colleagues, and 94 (9.7%) had been exposed to bullying, including 64 (68.1%) from nurse colleagues (Park et al., 2015). According to the results of Park et al. (2015), it may be assumed that verbal abuse can be carried out on its own and that other forms of violence are perpetrated along with verbal abuse, because the same number of nurses had been exposed to verbal abuse and bullying from nurse colleagues.

A number of studies have examined the prevalence of nurses' experiences of verbal abuse and the source of verbal abuse (Çelik, Celik, Ağırbaş, & Uğurluoğlu, 2007; Chang & Cho, 2016; Park et al., 2015; Sofield & Salmond, 2003). Some studies sought to identify the factors contributing to verbal abuse or violence (Farrell & Shafiei, 2012; Keller, Krainovich-Miller, Budin, & Djukic, 2018; Zhang et al., 2017), while others analyzed the consequences of nurses' experiences of verbal abuse (Budin, Brewer, Chao, & Kovner, 2013; Chang & Cho, 2016; Manderino & Berkey, 1997; Park et al., 2015; Pejic, 2005). However, most studies examining workplace violence toward nurses, including verbal abuse, collected data from nurses who were victims of violence using self-reporting scales (Budin et al., 2013; Park et al., 2015; Pejic, 2005; Vogelpohl, Rice, Edwards, & Bork, 2013). Nonetheless, if there is a victim, there must also be a perpetrator. It is important to examine both sides of violence; however, collecting data from perpetrators has been thought to be challenging. One reason for this is the assumption that there are gaps between the perceptions of the victims and perpetrators. Nursing organizations usually consider hierarchy to be an important aspect of their culture (Kim, 2009), and because of this culture, senior nurses might raise their voices and be harsh when training junior nurses, while not perceiving that doing so could hurt them. This makes it more difficult to investigate the side of the abuser.

Nurses' stress, burnout, and job dissatisfaction were associated with greater quantitative demands and emotional demands (Cho, Park, Jeon, Chang, & Hong, 2014). Excessive work demands and a poor nursing environment have been reported to be reasons for intensifying violence between nurse colleagues (Park et al., 2015). Therefore, high work demands increase nurses' stress, which probably leads to violent behavior toward their colleagues.

In this study, we focused on the relationship between nurses' aggression and verbal abuse. The conceptual model used in this study was Roy's Adaptation Model (Andrews & Roy, 1991). According to Roy's model, a person is an adaptive system that responds to stimuli from the environment. Since not every form of stress or stimulus is directly linked to violence, it can be assumed that certain personality traits lead to violent behaviors. When an individual confronts an offensive stimulus, he or she may respond by attacking the responsible person (Buss, 1961). This kind of trait or behavior, in which others are attacked, is known as aggression. Archer and Coyne (2005) defined human aggression as actions that involve the intention to hurt others and explained that aggression could be performed directly and indirectly. Buss (1961) classified acts of human aggression according to the three dichotomies of verbal–physical, direct–indirect, and active–passive. Later, Buss and Perry (1992) developed the Aggression Questionnaire, which includes the four factors of physical aggression, verbal aggression, anger, and hostility as the subordinate concepts of aggression. Since this questionnaire includes dimensions regarding the behavior, emotion, and cognition of aggression, it can be used to measure both overt and covert types of aggression, as well as aggressive attitudes. In workplaces, verbal, indirect, and passive aggression—so-called covert forms of aggression—are more frequent than overt forms (Baron & Neuman, 1996), and these forms of aggression are also known as indirect aggression, relational aggression, and social aggression (Archer & Coyne, 2005).

Additionally, measuring aggression is a way of examining the side of the abuser, albeit indirectly. A previous study found that violent prisoners showed higher hostility scores than nonviolent prisoners (Gunn & Gristwood, 1975), which suggests that we can identify the possibility of violent behavior by analyzing

aggression. This means although it is difficult to measure verbal abuse directly on the abuser side, the possibility of verbal abuse can be estimated by measuring psychological dynamics that promote verbal abuse. In this study, it was attempted to measure verbal abuse on the abuser side by examining aggression.

Verbal abuse between nurse colleagues reflects improper interactions formed within a limited space or the whole organization, and we need to examine the side of the perpetrators and their interactions with victims in order to more fully understand this phenomenon. The aims of this study were to examine the relationships among nurses' demands at work, aggression, and verbal abuse.

Methods

Study Design

This study was designed as a cross-sectional study to determine the relationships among demands at work, aggression, and verbal abuse of registered nurses using survey data.

Setting and Participants

A sample of 427 registered nurses from 16 nursing units of three tertiary university hospitals located in metropolitan cities in South Korea were asked to participate in the survey. We targeted four types of nursing units (general wards, intensive care units, emergency rooms, and operating rooms) to comprehensively include general units dedicated to the delivery of direct nursing care, with nurses working three shifts; therefore, special wards such as those in outpatient departments were excluded. The survey included all staff nurses working in the nursing units that were selected. A total of 386 registered nurses (90.4%) completed the survey, the final sample used in this study consisted of 378 registered nurses (88.5%) after excluding eight surveys with unreliable data.

Data Collection

Three researchers who had more than 5 years of clinical experience in nursing and more than 3 years of research experience who were not affiliated with the participating hospitals performed data collection. After obtaining permission from the nursing departments, we advertised the survey on the website of each hospital. After 16 nursing units were selected, we asked all nurses to participate in the survey voluntarily. Data were collected between September 1 and October 17, 2016.

Measures

Verbal abuse was measured using the Verbal Abuse Questionnaire (Pejic, 2005). This tool was developed by modifying the Verbal Abuse Scale (Manderino & Berkey, 1997). Permission to use the scale was obtained from the developer, and translation from English to Korean and back-translation were performed. The Verbal Abuse Questionnaire included five parts (demographic information, incidence of verbal abuse, source of verbal abuse, the level of reporting of incidents of verbal abuse, and reactions to verbal abuse), and we used part 2 in this study. Part 2 addressed eight types of verbal abuse (abusive anger, obscene language, insulting comments, verbally threatening, condescending behavior, verbal abuse disguised as a joke, behaviors such as ignoring, and refusing to communicate). Respondents indicated five levels of frequency of verbal abuse experience in the last three months. The response options were as follows: (a) never; (b) 1 to 5 times; (c) 6 to 10 times; (d) 11 to 20 times; and (e) more than 20 times. The internal consistency (Cronbach alpha) was 0.86 in a previous study (Budin et al., 2013). The Cronbach alpha value for experiences of verbal abuse was 0.98 in this study.

Aggression of the nurses was measured using the Aggression Questionnaire (Buss & Perry, 1992). Permission to use the questionnaire was obtained from the developer and we performed translation from English to Korean and back-translation. The Aggression Questionnaire consisted of four aggression factors (physical aggression, verbal aggression, anger, and hostility) and these factors were measured using a five-point scale. Buss and Perry (1992) reported the test–retest correlations of the instrument as a whole, physical aggression, verbal aggression, anger, and hostility as 0.80, 0.80, 0.76, 0.72, and 0.72, respectively. The Cronbach alpha values of this study for overall aggression, physical aggression, verbal aggression, anger, and hostility were 0.93, 0.88, 0.69, 0.82, and 0.82, respectively.

Levels of demands at work were measured using the second version of the Copenhagen Psychosocial Questionnaire (COPSOQ II) (Pejtersen, Kristensen, Borg, & Bjorner, 2010). The Korean-language version of the COPSOQ used in this study was developed by June and Choi (2013). The COPSOQ II middle/short version includes three types of demands at work (quantitative demands, work pace, and emotional demands). The items were measured using a five-point scale. The Cronbach alpha values reported from a previous study of quantitative demands, work pace, and emotional demands were 0.82, 0.84, and 0.87, respectively (Pejtersen et al., 2010). The Cronbach alpha values of quantitative demands, work pace, and emotional demands were 0.65, 0.66, and 0.79, respectively, in this study.

Box 1. Definitions of Key Variables

1. Verbal abuse: Abusive behaviors that humiliate, degrade, or otherwise indicate a lack of respect for the dignity and worth of an individual including verbal denigration or shouting and swearing at an individual (Hadley, 1990). In this study, eight types of verbal abuse were analyzed, including abusive anger, obscene language, insulting comments, verbally threatening or condescending behavior, verbal abuse disguised as jokes, and behaviors such as ignoring and refusing to communicate (Pejic, 2005).
2. Aggression: Buss and Perry (1992) defined aggression according to four subtraits of personality. Physical and verbal aggression involves hurting or harming others, representing the instrumental or motor component of behavior. Anger involves physiological arousal and preparation for aggression, representing the emotional or affective component of behavior. Hostility consists of feelings of ill will and injustice, representing the cognitive component of behavior.
3. Demands at work: Physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). In this study, quantitative demands, work pace, and emotional demands were used as items to measure demands at work.

Data Analysis

Data analysis was performed using SAS version 9.4. Items measuring quantitative demands, work pace, and emotional demands were scored as 0, 25, 50, 75, and 100. They were calculated as the mean of the item responses, with higher scores indicating feelings of more intensive demands at work.

Items dealing with aggression were calculated as the mean of the item responses, and the overall aggression was calculated as the mean of all aggression factors. Higher scores indicated higher levels of aggression.

Verbal abuse was classified into eight types, and the mean of each item was calculated. The mean of total verbal abuse was calculated by aggregating the eight types of verbal abuse. In addition, verbal abuse experience was dichotomized as “yes” or “no” for logistic regression analysis.

The relationships among aggression, verbal abuse, and demands at work and the relationship between aggression and verbal abuse were examined using multiple linear regression and logistic regression analyses, controlling for nurses’ characteristics (age, unit experience, and education level) and nursing unit type.

The average overall aggression score of the 16 units was calculated and categorized into four groups by quartiles, and the means and standard deviations of verbal abuse of each group were compared. The overall aggression score of each nurse was calculated, and 378 nurses were categorized into four quartiles according to their aggression score. The means and standard deviations of the four groups categorized at the nurse level were compared, and logistic regression analysis was also conducted by nurses’ experience of verbal abuse. This quartile analysis was performed to examine whether the impact of aggression was stronger in a group in light of group dynamics. Aggression at the nursing unit level was analyzed by dividing nursing units into four groups depending on aggression scores, whereas aggression at the nurse level was analyzed by dividing individuals into four groups depending on aggression scores.

Some responses were missing for items such as age and education. The amount of missing data on these variables was small, and furthermore they were not considered main dependent variables. Missing items are indicated in the table(s). For each respondent, items with missing responses were excluded from the analysis. However, responses reported for other variables by that respondent were included in the overall analysis.

Ethical Considerations

The study received institutional review board approval (SNU IRB No. E1609/003-005). Nurses participated in the study on a voluntary basis and completed a written consent form prior to answering the survey questionnaires. They were informed that they could stop participating in the survey at any time without any harmful consequences for their career. Their personal information was managed in a master file separately from the datasets used for analysis.

Findings

The majority of the nurses were female (96.0%) and unmarried (81.2%). The majority of participants were more than 28 years of age (37.8%), with an average age of 27.9 years. Most of the participants had a bachelor’s degree (74.4%). More than half of the nurses worked in a general ward (60.1%), while 22.5%, 6.9%, and 10.6% of the nurses worked in an intensive care unit, emergency room, and operating room, respectively. The plurality of the participants (46.3%) had more than 3 years of unit experience, while 19.8% and 33.9% of the nurses had less than 1 year and more than 1 year to less than 3 years of unit experience, respectively. The average duration of unit experience was 4.1 years.

Table 1 presents the means and standard deviations of demands at work, aggression, and verbal abuse of the nurses. The mean score of emotional demands was the highest (70.59 ± 16.29), followed by work pace (68.65 ± 15.42), and quantitative demands (66.15 ± 13.29). The highest mean score of the four aggression factors was verbal aggression (3.02 ± 0.52), followed by anger (2.22 ± 0.64), hostility (2.19 ± 0.60), and physical aggression (1.60 ± 0.62), and the mean total aggression score was 2.08 (±0.52). The scores of verbal abuse were distributed across the full range from 1 to 5, and the mean score was 1.44 (±0.55). It was found that 74.3% of the nurses had experienced at least one of the eight types of verbal abuse.

Table 1 – Demands at Work, Aggression, and Verbal Abuse Among Registered Nurses (N = 378)

Variables	No. of Items	Cronbach α	M ± SD	n(%)	Range
Demands at work					
Quantitative demands	4	0.65	66.15 ± 13.29		31.3–100.0
Work pace	3	0.66	68.65 ± 15.42		8.3–100.0
Emotional demands	4	0.79	70.59 ± 16.29		6.3–100.0
Aggression					
Physical aggression	9	0.88	1.60 ± 0.62		1.0–4.9
Verbal aggression	5	0.69	3.02 ± 0.52		1.0–4.2
Anger	7	0.82	2.22 ± 0.64		1.0–4.9
Hostility	8	0.82	2.19 ± 0.60		1.0–4.1
Total aggression	29	0.93	2.08 ± 0.52		1.0–4.5
Verbal abuse	8	0.91	1.44 ± 0.55	281 (74.3)	1.0–5.0

M, mean; No, number; SD, standard deviation.

The Effects of Nurses' Characteristics and Demands at Work on Aggression and Verbal Abuse

Table 2 presents the means and standard deviations of aggression and verbal abuse according to the general characteristics of the nurses. Females had higher mean scores for all four factors of aggression and overall aggression. Males had a higher mean score for verbal abuse, but the difference between female and male nurses was not statistically significant. Nurses aged 25 to 27 had significantly higher scores for physical aggression, anger, overall aggression, and experience of verbal abuse than other age groups. Nurses who had received a master's or higher degree showed higher scores for aggression and experience of verbal abuse, but this trend was not statistically significant. Levels of aggression and verbal abuse did not significantly vary by unit type, although all aggression factors except hostility and verbal aggression were higher in the emergency room and intensive care unit. Verbal aggression showed the highest score among nurses who worked in an operating room and hostility was highest among those who worked in a general unit. Experience of verbal abuse was highest among those who worked in the emergency room, but was not significantly higher than among those who worked in other nursing units. Nurses who had more than 3 years of unit experience had significantly higher scores for anger than other groups. Experience of verbal abuse was significantly more common in nurses who had more than 1 year to less than 3 years of unit experience.

The results of the multiple regression analyses on the relationships among aggression, verbal abuse, and demands at work are presented in Table 3. After controlling for the effects of nurse age, type of nursing unit, unit experience, and education level, aggression was associated with higher emotional demands with a regression coefficient of 0.01 ($p = .002$). Quantitative demands and work pace were positively correlated with aggression, although this relationship was not significant. Experience of verbal abuse showed a positive correlation with all three dimensions of demands at work, but these correlations were not significant.

Relationship Between Aggression and Verbal Abuse

Table 4 presents the regression coefficients and odds ratios from multiple linear and logistic regression analyses. Overall aggression, physical aggression, and hostility were significantly associated with verbal abuse. Overall aggression was significantly related with a 2.26-fold increase ($p = .003$) in the odds of having experienced verbal abuse, and hostility was associated with a significant 3.03-fold increase ($p < .001$) in the odds of having experienced verbal abuse. Physical aggression only showed a significant association in the multiple linear regression analyses, with a regression coefficient of 0.19 for having experienced verbal abuse ($p = .007$).

Variation in Experiences of Verbal Abuse by Total Aggression Scores at the Nursing Unit Level and at the Nurse Level

The mean scores, standard deviations, and odds ratios for verbal abuse according to the groups defined by aggression scores are presented in Table 5. At the unit level, the high-aggression group (Q4) showed the highest mean score of verbal abuse experience (1.62 ± 0.75), followed by the low-aggression group (Q1) (1.40 ± 0.55), the medium-high aggression group (Q3) (1.39 ± 0.43), and the medium-aggression group (Q2) (1.37 ± 0.42). However, the differences between groups were not statistically significant. At the nurse level, the high-aggression group had experienced more verbal abuse, and this relationship was significant ($p < .001$). The high-aggression group (Q4) was associated with a 3.26-fold increase in the odds of having experienced verbal abuse, while the medium-high aggression group (Q3) had a 1.84-fold increase and the medium aggression group (Q2) a 1.57-fold increase in the odds of having experienced verbal abuse compared to the low-aggression group (Q1).

Discussion

This study observed a high incidence of verbal abuse among nurses in the workplace, suggesting

Table 2 – Aggression and Verbal Abuse According to the General Characteristics of the Registered Nurses (N = 378)

Variables	n(%) or M ± SD	Aggression					Verbal Abuse
		Physical Aggression	Verbal Aggression	Anger M ± SD	Hostility	Overall Aggression	M ± SD
All		1.60 ± 0.62	3.02 ± 0.52	2.22 ± 0.64	2.19 ± 0.60	2.08 ± 0.52	1.44 ± 0.55
Gender							
Female	363 (96.0)	1.60 ± 0.62	2.35 ± 0.57	2.23 ± 0.64	2.20 ± 0.60	2.08 ± 0.52	1.44 ± 0.55
Male	15 (4.0)	1.59 ± 0.52	2.33 ± 0.57	2.09 ± 0.58	1.98 ± 0.54	1.97 ± 1.69	1.45 ± 0.68
t/U(p)		2925.50 (.840)†	2867.00 (.953)†	2557.50 (.491)†	2306.50 (.195)†	0.79 (.429)	2616.5 (.580)†s
Age (years)‡	27.9 ± 5.4						
22–24[a]	99 (26.2)	1.50 ± 0.53	2.27 ± 0.59	2.08 ± 0.63	2.10 ± 0.58	1.97 ± 0.49	1.46 ± 0.48
25–27[b]	136 (36.0)	1.71 ± 0.61	2.39 ± 0.55	2.35 ± 0.61	2.27 ± 0.60	2.17 ± 0.50	1.52 ± 0.63
≥ 28 [c]	143 (37.8)	1.57 ± 0.67	2.37 ± 0.58	2.20 ± 0.65	2.18 ± 0.59	2.06 ± 0.54	1.36 ± 0.51
H(p)		11.17 (.004) *	1.41 (.495) *	11.09 (.004) *	4.66 (.097) *	8.61 (.014) *	11.51 (.003) *
Multiple comparison		a< b		a < b		a < b	b> c
Education§							
Associate degree	87 (23.2)	1.65 ± 0.64	2.44 ± 0.57	2.32 ± 0.69	2.22 ± 0.60	2.14 ± 0.53	1.46 ± 0.57
Bachelor's degree	279 (74.4)	1.58 ± 0.59	2.32 ± 0.56	2.18 ± 0.60	2.17 ± 0.58	2.05 ± 0.49	1.43 ± 0.55
Master's or higher	9 (2.4)	1.94 ± 1.22	2.49 ± 0.84	2.40 ± 1.11	2.44 ± 0.85	2.31 ± 1.00	1.62 ± 0.69
H(p)		1.05 (.592) *	2.14 (.342) *	4.05 (.132) *	2.10 (.350) *	2.08 (.127) *	1.35 (.508) *
Unit type							
General ward	227 (60.1)	1.57 ± 0.60	2.32 ± 0.56	2.19 ± 0.65	2.21 ± 0.60	2.06 ± 0.52	1.43 ± 0.55
Intensive care unit	85 (22.5)	1.66 ± 0.70	2.39 ± 0.64	2.25 ± 0.66	2.20 ± 0.66	2.11 ± 0.59	1.45 ± 0.58
Emergency room	26 (6.9)	1.73 ± 0.56	2.39 ± 0.56	2.42 ± 0.56	2.11 ± 0.50	2.15 ± 0.41	1.67 ± 0.72
Operating room	40 (10.6)	1.60 ± 0.56	2.44 ± 0.44	2.19 ± 0.56	2.13 ± 0.47	2.06 ± 0.42	1.39 ± 0.37
H(p)		3.33 (.343) *	3.75 (.290) *	3.83 (.280) *	0.73 (.866) *	0.32 (.811) *	3.73 (.292) *
Duration of unit experience (years)	4.1 ± 4.6						
<1[a]	75 (19.8)	1.54 ± 0.56	2.26 ± 0.60	2.03 ± 0.62	2.09 ± 0.57	1.96 ± 0.50	1.43 ± 0.54
1 ≤ <3[b]	128 (33.9)	1.63 ± 0.62	2.33 ± 0.57	2.27 ± 0.60	2.22 ± 0.59	2.10 ± 0.52	1.56 ± 0.64
≥3[c]	175 (46.3)	1.61 ± 0.64	2.41 ± 0.55	2.27 ± 0.67	2.21 ± 0.61	2.11 ± 0.53	1.36 ± 0.47
H(p)		1.42 (.491) *	2.68 (.262) *	8.01 (.018) *	1.90 (.387) *	3.36 (.186) *	11.26 (0004) *
Multiple comparison				a< b, c			b> c

M, mean; SD, standard deviation.

* Kruskal-Wallis test.
† Mann-Whitney test.
‡ One missing value in the category of age.
§ Three missing value in the category of education.

Table 3 – Relationships Among Aggression, Verbal Abuse, and Demands at Work of the Registered Nurse: Regression Coefficients (N = 378)

Variables	Demands at Work		
	Quantitative Demands	Work Pace Coefficient (*p*) (95% CI)	Emotional Demands
Aggression	0.002 (.442) (−0.003, 0.01)	0.002 (.429) (−0.003, 0.01)	0.01 (.002) (0.003, 0.01)
Verbal abuse	0.001 (.777) (−0.005, 0.01)	0.01 (.060) (−0.0002, 0.01)	0.005 (.089) (−0.001, 0.01)

Effects of nurse age, type of nursing units, unit experience, and education level were controlled for in the multiple regression analyses.
CI, confidence interval.

Table 4 – Relationship Between Aggression and Verbal Abuse Among Registered Nurses: Regression Coefficients and Odds Ratios (ORs) (N = 378)

		Overall Aggression	Physical Aggression	Verbal Aggression	Anger	Hostility
Verbal abuse	Coefficient (*p*)	0.38 (<.001)	0.19 (.007)	−0.12 (.068)	0.04 (.606)	0.25 (<.001)
	(95% CI)	(0.28, 0.48)	(0.05, 0.33)	(−0.25, 0.01)	(−0.10, 0.17)	(0.12, 0.37)
	OR (*p*)	2.26 (.003)	1.43 (.325)	0.70 (.250)	0.77 (.420)	3.03 (<.001)
	(95% CI)	(1.33, 3.84)	(0.70, 2.91)	(0.38, 1.28)	(0.40, 1.47)	(1.60, 5.76)

Effects of nurse age, type of nursing units, unit experience, and education level were controlled for in the regression analyses.
CI, confidence interval.

that attention should be paid to nurses' demands at work and aggression.

Over 70% of the respondents had experienced at least one type of verbal abuse from their nurse colleagues during the past 3 months (74.3%) (Table 1). This result indicates that verbal abuse against nurses in the workplace occurred very frequently, which can have a negative influence on their job performance. It has been identified that verbal abuse leads to negative outcomes among newly licensed nurses, such as decreased job satisfaction, increased burnout, reduced commitment to the workplace, and altered job performance (Chang & Cho, 2016). Moreover, it was found that verbal abuse increased the job stress of nurses working in special units, such as the operating room and anesthesia room (Kim & Yi, 2017). Additionally, physical violence and threats of violence that nurses experienced in their workplace were related to adverse patient outcomes, such as falls and medication errors (Roche et al., 2010). These negative consequences could ultimately affect patient safety and the quality of patient care. Therefore, further research is needed to investigate the effects of verbal abuse toward nurses on patient safety.

In our study, verbal aggression was the most common and physical aggression was the least common of the four types of aggression (Table 1). The instrumental, emotional, and cognitive components of behavior were included in our study. Physical aggression and verbal aggression represent the instrumental or motor component of behavior, which involves hurting or harming others, and anger represents the emotional component of behavior, which refers to physiological awakening and preparation for aggression (Buss & Perry, 1992). Hostility reflects a cognitive factor that implies a negative attitude toward the world, where an individual thinks that others are malevolent and treat him or her in an unwarranted fashion (Buss & Perry, 1992). According to the results of a previous study that measured aggression among physicians, residents showed significantly greater levels of aggression than medical students and professors, although verbal abuse was mostly committed by senior physicians and professors (Lim, Cho, & Song, 2004). It is possible to infer that a personal tendency toward aggression does not lead to verbal abuse due to the structural hierarchy of the hospital, where seniors and subordinates work together. Just as among physicians, the structure of the nursing profession emphasizes that professional knowledge is transmitted from seniors to juniors, and the culture of nursing places a great deal of importance on hierarchy and authority. Even if a tendency toward aggression is high, as long as these structural factors and aspects of organizational culture exist, aggression may not cause verbal abuse directly. This is because junior nurses may be afraid of speaking up to their seniors, even when they experience aggression internally. It is noteworthy that the scores of all the aggression factors and items for verbal abuse were highest in the middle-age group (25–27 years; Table 2). Most of these participants had 1 year to less than 3 years of unit experience, which may correspond to nurses who have just finished their training period and are starting to work actively as professionals in

the clinical setting of tertiary hospitals in South Korea. In this period, nurses might feel more responsibility and pressure at work, and they might feel more frustration when they do not meet their seniors' expectations. A previous study (Kim & Lee, 2016) reported that more than 50% of nurses quit their job within 4 years of employment. The high rates of verbal abuse and aggression could be a reason for the high turnover rate during this period, and further investigations are needed to clarify this relationship.

Unlike a previous study (Park et al., 2015), our study found that emotional demands were not associated with verbal abuse, although they were significantly associated with aggression. This finding suggests that an excessive emotional workload may increase aggression. According to a previous study, of the various aggression factors and personality traits, anger and hostility were strongly related to emotionality (Buss & Perry, 1992). This means that a person who is more emotional may feel more anger or hostility that involves highly demanding emotional work. A previous study indicated that emotional demands in the workplace played a negative role in the physical and mental health of workers (Choi & Jeon, 2016). Moreover, emotional demands at work are already well known to be a factor that negatively affects nurses' health, sleep, stress, burnout, and intention to stay (Cho, Lee, Mark, & Yun, 2012). Emotional demands are related to aggression, presumably primarily with anger and hostility, which may not be directly linked to aggressive behaviors toward other people; however, they can be directed inward, resulting in negative health outcomes and negative work performance. Therefore, nurses' stress and aggression triggered by emotional demands should be mitigated or prevented by forming a mutually supportive culture among their peers.

It was found that verbal abuse was related to aggression and was closely related with hostility in our study (Table 4). According to Seo (2012), hostility was the aggression factor that caused a negative correlation between aggression and happiness, and when hostility was controlled, the positive correlation between aggression and negative affect disappeared. Hostility might cause negative feelings and lead to verbal abuse, or on the contrary, experiences of verbal abuse might cause hostility, with corresponding negative feelings.

Martin, Watson, and Wan (2000) presented a three-factor model of the trait of anger, and proposed that anger corresponds to affect, aggression to behavior, and hostility to cognition. It is important to note that because hostility is a cognitive element, cognition can be rebuilt by implementing educational interventions. Verbal anger behavior can be divided into constructive and deconstructive anger behaviors. Constructive verbal anger behavior is the act of understanding others and identifying their roles to solve problems, and deconstructive verbal anger behavior is the maladjusted behavior that occurs when individuals blame others without feeling any responsibility, or ruminating and continuing to talk about the incident that caused the anger (Seo, 2007). It is important to focus not only on the negative aspects of verbal aggression, but also on how to manage it in a way that promotes constructive verbal anger behavior (Deutsch, Coleman, & Marcus, 2006). If verbal aggression can be expressed constructively, it could improve decision-making, help find new approaches, and improve job performance.

This study began with the hypothesis that groups with higher levels of aggression are more likely to experience verbal abuse, assuming that aggression is the cause of verbal abuse. Quartile analysis was performed to compare the impact of aggression between nurses in groups (unit level) and nurses as individuals (nurse level). Quartile analysis has been verified as a useful method for comparing groups by previous studies (Cho et al., 2014; Missmer et al., 2002; Yu et al., 1999). The perpetrators, who have higher levels of aggression, and the victims of verbal abuse work together as a group, meaning that there would be a significant difference between high-aggression groups and low-aggression groups. However, our results did not fully support that hypothesis, because the low-aggression group showed a higher verbal abuse score than the medium-aggression group and the medium-high aggression group (Table 5). Therefore, the aggression level of a group may not be directly linked to verbal abuse. Instead, when we used nurses individually as the unit of analysis, the high-aggression group was significantly more likely to have experienced verbal abuse. This explains that opposite to our first assumption, verbal abuse may occur first, and then aggression emerges in the victims of verbal abuse, which may lead to a vicious cycle. Thus, it becomes difficult to distinguish between the aggressors and the victims.

Most aggression events in the workplace can occur in a low-intensity form, more passively than actively, and in a more subtle than overt form (Baron & Neuman, 1996). Consequently, it is difficult to explain the aggression of nurses in relation to the single variable of verbal abuse. However, this study suggests that verbal abuse experience at work could be a reason for higher levels of aggression. Verbal abuse also can be seen as a form of workplace incivility, and in fact, workplace incivility experienced by nurses was associated with negative outcomes, such as a defensive attitude toward the organization and colleagues, and the loss of supportive relationships (Kim, Park, & Kim, 2013). Incivility is a spiral, and when it reaches a tipping point it can extend to overbearing behavior, and an individual's hot temperament in combination with the organizational atmosphere can be the impetus for these spirals (Andersson & Pearson, 1999). Therefore, it is important to break the incivility spiral and the vicious cycle of verbal abuse. Workplace violence and verbal abuse against nurses were revealed to be more common when the nursing environment was unfavorable (Budin et al., 2013; Zhang et al., 2017). Workplace violence, including verbal abuse, should be managed carefully, with the goal of ensuring that it does not happen in the first place, by

Table 5 – Verbal Abuse According to the Total Aggression Scores at the Nursing Unit Level and Nurse Level

	Verbal Abuse					
	Unit Level (N = 16)		Nurse Level (N = 378)			
Total Aggression	M ± SD	H (p)	M ± SD	H (p)	Multiple Comparison	OR (p)(95% CI)
High (Q4)[a]	1.62 ± 0.75	5.13 (.163)*	1.76 ± 0.74	38.04 (<.001)*	a > b, c, d	3.26 (.021) (1.45, 7.33)
Medium-high (Q3)[b]	1.39 ± 0.43		1.42 ± 0.46		b > d	1.84 (.812) (0.96, 3.54)
Medium (Q2)[c]	1.37 ± 0.42		1.42 ± 0.56			1.57 (.588) (0.82, 2.98)
Low (Q1)[d]	1.40 ± 0.55		1.21 ± 0.27			1

CI, confidence interval.
The average of the overall aggression score was categorized into 4 groups: low (Q1 = first quartile), medium (Q2 = secnd quartile), medium-high (Q3 = third quartile), and high (Q4 = fourth quartile); the effects of nurse age, type of nursing units, unit experience, and education level were controlled for in the regression analyses.

*Kruskal-Wallis test.

managing the nursing environment and by applying a zero-tolerance policy toward violence as part of the organizational culture. An atmosphere should be built up in which nurses can freely express their aggression and experiences of verbal abuse in a constructive way.

Limitations of the Study

This study has several limitations. First, the study data were obtained from a cross-sectional survey, so the relationships among demands at work, aggression, and verbal abuse do not reflect causal relationships. Second, this study was conducted at tertiary university hospitals in metropolitan cities. Therefore, our findings may not be generalized to other countries, other types or sizes of hospitals that have different organizational cultures, or other hospital systems.

Implications for Practice and Future Research

Our study results highlight the importance of managing verbal abuse and aggression among registered nurses at the organizational level. Effective strategies must be developed and implemented to break the cycle of verbal abuse and aggression between nurse colleagues. First, many nurses may not be aware of their abusive behaviors toward colleagues. We suggest that hospitals develop educational programs informing nurses about what aggressive behaviors are, including verbal abuse. Additionally, action protocols, such as a reporting system and training on coping skills after exposure to verbal abuse, should be included.

Furthermore, developing a system to manage conflicts between nurse colleagues at the beginning can be a start for building a culture that never accepts disruptive behavior in the workplace. High levels of emotional demands perceived by nurses were found to be related to higher levels of aggression and should not be taken for granted. Hospitals and nurse managers should therefore analyze situations that place high levels of emotional demands on nurses, with appropriate monitoring. Based on these statistical data, strategies should be implemented. Programs should be created to reduce the negative perceptions and stress derived from emotional demands. Psychological consultations and emergency time-off programs could be recommended. Furthermore, strategies for managing nurses' verbal abuse and aggression should be targeted based on career stage, with a particularly close focus on those with 1 to 3 years of experience. In general, nurses might have the most difficult time in this period in their professional development and need more intensive support from hospitals. Through such forms of support and care, nurses would overcome the difficulties that they experience, and be more likely to think of their job as a lifelong calling.

The study began with the assumption that a group with greater aggression would have a higher prevalence of verbal abuse, and sought to explore the side of the perpetrator. However, according to our study results, aggression was associated with having experienced verbal abuse, and it became difficult to distinguish between the aggressors and the victims. Further research should investigate the long-term effects of aggression. Moreover, we need to develop instruments that enable examining and approaching abusers based on a correct interpretation of their behavior.

Conclusions

The prevalence of verbal abuse toward registered nurses perpetrated by nurse colleagues was surprisingly high, and high levels of aggression were related to having experienced verbal abuse. Hospitals and health care organizations must strive to manage high emotional demands at work and aggression, especially physical aggression and hostility, which were associated with verbal abuse. Longitudinal research is recommended to further examine the effects of verbal abuse on aggression.

Acknowledgments

The authors would like to thank Dr. Sang Hee Jeon and Ms. Yuna Lee for assistance in obtaining the data, and the nurses who participated in this research. We wish to express thanks to Dr. Soo-Eun Chang for editing this paper.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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