J Korean Med Sci. 2026 Mar 30;41(12):e107
https://doi.org/10.3346/jkms.2026.41.e107
eISSN 1598-6357·pISSN 1011-8934

JKMS

Original Article
Psychiatry & Psychology

Check for updates

Effect of Workplace Bullying on Depressive Symptoms Among Newly Hired Hospital Nurses: A Cross-Sectional and Prospective Observational Study

OPEN ACCESS

Received: Oct 24, 2024
Accepted: Jul 15, 2025
Published online: Mar 3, 2026

Address for Correspondence:
Hyunjoo Kim, MD, PhD
Department of Occupational and Environmental Medicine, Ewha Womans University Mokdong Hospital, 1071 Anyangcheon-ro, Yangcheon-gu, Seoul 07985, Korea.
Email: hkim.ewhaoem@gmail.com

© 2026 The Korean Academy of Medical Sciences.
This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (https://creativecommons.org/licenses/by-nc/4.0/) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ORCID iDs
Yuhjin Chung
https://orcid.org/0000-0001-9184-5612
Hyunjoo Kim
https://orcid.org/0000-0003-0375-9939
Jia Ryu
https://orcid.org/0000-0002-7745-564X
Seohyun Yoon
https://orcid.org/0000-0003-4355-2596

Disclosure
The authors have no potential conflicts of interest to disclose.

Yuhjin Chung,[1] **Hyunjoo Kim**,[2] **Jia Ryu**,[3] **and Seohyun Yoon**[4]

[1]Department of Health Care Management and Policy, Graduate School of Public Health, Seoul National University, Seoul, Korea
[2]Department of Occupational and Environmental Medicine, Ewha Womans University Mokdong Hospital, Seoul, Korea
[3]Department of Occupational and Environmental Medicine, International St. Mary's Hospital, Catholic Kwandong University, Incheon, Korea
[4]Ewha Medical Research Institute, Ewha Womans University School of Medicine, Seoul, Korea

ABSTRACT

Background: Workplace bullying (WB) among hospital nurses in Korea is a growing issue that affects their physical and mental health and safety. Thus, we aimed to identify the association between WB and depressive symptoms in newly hired hospital nurses.
Methods: We enrolled 508 nurses for the cross-sectional study and 311 nurses for the prospective observational study. In both studies, we conducted multiple logistic regression analyses controlling for age, gender, education level, living status (alone or not), alcohol consumption, exercise, department, and workplace. For the cross-sectional study, WB scores were categorized into three groups: "low," "intermediate," and "high." In the prospective observational study, WB levels were classified as "absent" or "present," based on the median score. Using the combination of WB status at baseline and follow-up, we categorized cases into four groups: "both absent," "present to absent," "both present," and "absent to present."
Results: In the cross-sectional study, nurses with intermediate WB scores had an increased risk of depressive symptoms (odds ratio [OR], 2.080; 95% confidence interval [CI], 0.791–5.472), and those with high WB scores showed an even greater risk (OR, 6.606; 95% CI, 2.926–14.915) compared to nurses with low WB scores. In the prospective observational study, the risk of depressive symptoms was found to increase among nurses. After adjusting for confounding variables, the ORs for the "both present" group and the "absent to present" group were 4.308 (95% CI, 1.449–12.806) and 7.647 (95% CI, 2.639–11.157), respectively, compared to the "both absent" group.
Conclusion: WB among newly hired hospital nurses likely causes significant depressive symptoms. Therefore, organizational interventions should be considered to prevent depressive symptoms.

Keywords: Workplace Bullying; Nurses; Depression; Perspective Study

Generated by ⁄mlinkpress

Author Contributions

Conceptualization: Kim HJ, Chung YJ. Data curation: Kim HJ, Yoon SH. Methodology: Kim Kim HJ, Yoon SH. Formal analysis: Ryu JA, Chung YJ. Methodology: Kim HJ. Writing - original draft: Chung YJ. Writing - review & editing: Kim HJ, Ryu JA, Yoon SH, Chung YJ.

INTRODUCTION

Workplace bullying (WB) has emerged as a critical issue among nurses in Korean hospitals. WB has various definitions. According to Einarsen,[1,2] WB is defined as "repeated negative acts which make victims feel unable to defend themselves, in imbalanced power between two parties, distinguishing WB from workplace conflict." Björkqvist et al.[3] defined bullying as "repeated activities, with the aim of bringing mental (but sometimes also physical) pain, and directed toward one or more individuals who, for one reason or another, are not able to defend themselves" In addition, WB is also defined as "the unwanted, unwelcome, abuse of any source of power that has the effect of or intent to intimidate, control or otherwise strip a target of their right to esteem, growth, dignity, voice or other human rights in the workplace by Carbo.[4] So far, we presented various definitions to reflect the complexity of the concept across different context. In general, the definition of WB commonly indicates that one of its core features is the presence of negative acts directed at one or more powerless individuals that these individuals are forced to endure. As nursing organizations are traditionally known for their hierarchical structure, newly hired nurses can be considered the most vulnerable to WB in the nursing workplace.

The literature reports a relationship between WB and various physical health problems, including cardiovascular disease,[5] obesity,[6] diabetes,[7] and musculoskeletal disorders,[8] as well as mental health issues such as anxiety,[9,10] suicidal ideation,[11,12] sleep disorders,[13,14] and depression.[15-18]

The nursing organizational culture of bullying, referred to as "Tae-Um," has gained attention as a growing social issue, especially two suicide cases reported by Workers' Compensation & Welfare Service in Korea.[19,20] A qualitative study[21] of hospital nurses in Korea revealed that "Tae-Um" often occurred between senior and junior nurses in situations where in-house training staff provided unilateral instructions. This lack of effective communication, especially in high-pressure situations, exacerbates the problem. Since hospitals are manpower-oriented organizations, nurses experiencing WB often struggle to perform their duties effectively, leading some to consider changing jobs.

The various types of bullying nurses commonly experience include intimidating behaviors such as belittling, sneering, shouting, and giving unreasonable orders.[22] Other forms of work-related bullying include withholding important information, ignoring opinions, and assigning disproportionately heavy workloads.[23] In addition, nurses may be subject to being ignored, gossiped about, or rumors spread about them, to name a few.[24] However, the prevalence of physical violence and direct threats to nurses was relatively rare.[22-24]

Several factors have been identified as the causes of WB among nurses. First, an authoritarian leadership style[25] and hierarchical organizational structure[26] can significantly influence the occurrence of bullying. In such environments, bullying is sometimes perceived as a means to enhance worker performance.[27] The hierarchical nature of nursing organizations is often cited as a factor that perpetuates the culture of bullying.[28,29]

Second, research on the societal antecedents of WB is limited. However, in Sweden, where non-patriarchal workplaces are traditionally valued, cultural shifts since the 1990s have led to an increase in WB.[30] This suggests that the consequences of a shift towards neoliberalism,

https://doi.org/10.3346/jkms.2026.41.e107

including rapid organizational restructuring, an emphasis on efficiency, and a competitive organizational climate, may reinforce the culture of bullying in nursing.

Additionally, South Korea faces a chronic shortage of nurses due to challenging working conditions, with only 4.2 nurses per 1,000 people—half the average of 7.9 per 1,000 in OECD countries, although the number of nursing college graduates exceeds the OECD average.[31] A heavy workload can contribute to high turnover intention among nurses. In one study examining the association between bullying, burnout, professional quality of life, and turnover intention, the authors found that the average WB score among nurses in Korea was significantly higher than that of their counterparts in Japan and Canada.[32] The literature indicates that high workloads among bullying perpetrators increase the likelihood of bullying,[33,34] which, in turn, raises nurses' turnover intention. This creates a cycle that exacerbates the workload and facilitates further instances of bullying.

WB among hospital nurses also negatively impacts their mental health. Symptoms of depression, which include low mood, loss of interest, low motivation, feelings of helplessness, cognitive decline, and sleep disturbances, can severely affect performance and productivity.[23] Furthermore, WB has been linked to an increase in workplace accidents and injuries,[35] potentially threatening patient safety and health. Therefore, exploring the relationship between nurses' WB and mental health issues, such as depression, is crucial for patients' well-being. However, there is limited research on the association between WB and depression among nurses.

In short, bullying appears to have a negative effect on nurses' mental health. This can diminish the quality of nursing, potentially threatening patients' lives and safety.

However, there are only a few studies on the relationship of WB of nurses and their depressive symptoms. Quine's study[36] of community nurses in an NHS trust found that 44% of nurses reported experiencing one or more forms of bullying in the previous year, compared to 35% of other staff. In a cross-sectional study involving Turkish physicians and nurses,[37] 82% of nurses reported experiencing WB, and an association was found between bullying, depression, and violent behavior. Another cross-sectional study of Taiwanese nurses[38] indicated that some forms of bullying were linked to depression, although causality was suggested. Moreover, most of the studies used a cross-sectional design, and longitudinal studies are rare. Reknes et al.[10] examined the relationship between WB and depressive symptoms in a longitudinal study of 1,582 Norwegian nurses but did not find a significant increase in depressive symptoms after 1year. Therefore, we cannot conclude whether WB is a cause of depressive symptoms among nurses.

As previously mentioned, only a few studies have specifically examined the relationship between WB and depression among nurses, and most of them have employed cross-sectional designs. Because there are very rare longitudinal studies with some negative results, the causality between WB and depressive symptoms among nurses remains unclear. In the current study, we conducted a cross-sectional study and a six-month prospective observational study. The purposes of this study were as follows: First, in a cross-sectional study, we determined the prevalence of WB and depressive symptoms among nurses. Second, in a longitudinal study, we investigated the relationship between WB and depressive symptoms.

METHODS

Subjects of the study

Originally, the subjects of this study were participants in another study that investigated the effects of shift work on sleep health. The participants received a detailed explanation of the study from the researchers, voluntarily agreed to participate, and signed an informed consent form before participating. The participants were newly hired nurses at two general hospitals affiliated with universities. The nurses underwent special medical examinations between September 2018 and September 2020.

Participants who had received a psychiatric diagnosis based on the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5), including sleep disorders that could cause daytime sleepiness, were excluded from the study, and pregnant women were also excluded from the study. The inclusion and exclusion criteria of the study are consistent with the objectives of this research, so it is unlikely that they had a significant impact on the results. In particular, the exclusion criteria contributed to the purpose of this longitudinal study by preemptively excluding high-risk groups for depressive symptoms.

Of the initial 508 newly hired nurses, 31 who had left the hospital were excluded. Of the remaining 477 participants, 315 responded to the follow-up questionnaire, with an overall response rate of 66.0%. We then excluded cases with missing data from the follow-up questionnaire regarding depressive symptoms (n = 2) and bullying experiences (n = 2). Thus, the final number of participants was 311. **Fig. 1** illustrates the flowchart for subject selection.

It is commonly stated by statisticians that the minimum required sample size for multiple logistic regression analysis should be at least 10 times the number of independent variables or more than 100.[39] However, our final sample size (311 for the prospective study, 508 for the cross-sectional study) exceeded this criterion sufficiently.

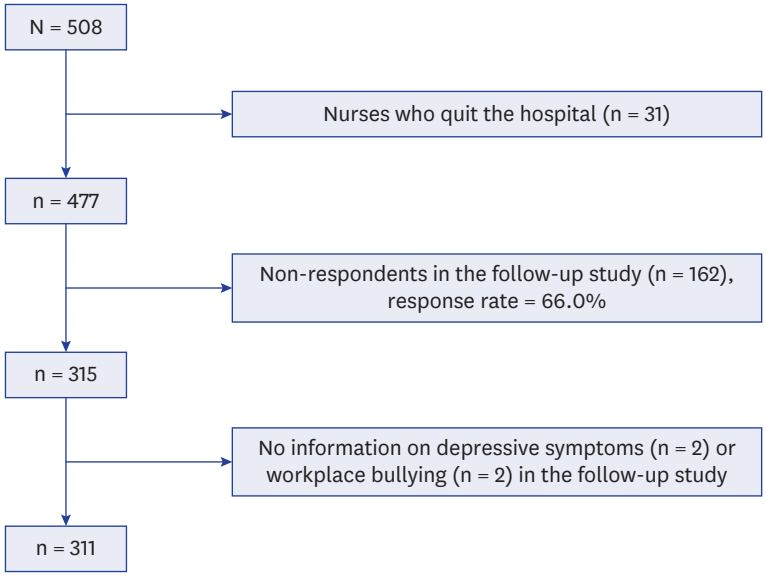


Fig. 1. Flowchart on the selection of study population.

https://doi.org/10.3346/jkms.2026.41.e107

Study variables

Independent variables

The Workplace Bullying in Nursing-Type Inventory (WPBN-TI), developed and validated by Lee and Lee,[40] was used to assess the bullying experienced by nurses. After identifying the initial items based on literature review and in-depth interviews, 16 items were developed through two content validity tests, and the final instrument was evaluated. This 16-item inventory employs a five-point Likert scale to measure verbal and non-verbal bullying, work-related bullying, and external threats. The authors reported that convergent validity and determinant validity for WPBN-TI were 100% and 89.7%, respectively. The satisfied criterion validity for WPBN-TI was greater than 0.70, and the reliability of WPBN-TI was Cronbach's alpha of 0.91. The overall score ranges from a minimum of 16 to a maximum of 80, with higher scores indicating more severe experiences of WB.

In our cross-sectional study, the total WPBN-TI scores from the baseline survey were categorized into three groups: "low," "intermediate," and "high." A "low" score was defined as a total WPBN-TI score of less than 19 (the median) or no response at baseline. Some nurses were unable to complete the questionnaire during the baseline survey because they were still in their probationary period. An "intermediate" score was defined as a total WPBN-TI score ranging from 19 to 25, while a "high" score was defined as a total WPBN-TI score of 26 or more.

In our prospective study, the total WPBN-TI scores were categorized into "absent" and "present." An "absent" score was defined as less than 19 (the median), whereas a "present" score was defined as 19 or more. Subjects were classified into four groups based on the combination of WB scores at baseline and follow-up surveys: "both absent," "absent to present," "present to absent," and "both present."

Dependent variables

Depressive symptoms were assessed using the Korean version of the Center for Epidemiological Studies Depression Scale (CES-D), which consists of 20 items and was translated by Cho and Kim.[41] The total score was calculated by summing the scores of each question (ranging from 0 to 3 points). A higher total score indicates a greater severity of depressive symptoms. The presence of depressive symptoms was defined as a sum of CES-D scores of 16 or more.

Confounding variables

Confounding variables included age, gender, education, living status (alone or not), workplace (hospital), department, alcohol consumption, and exercise. These variables were extracted from a medical examination database.

Regarding alcohol consumption, participants were classified as "non-drinkers," "light drinkers," or "heavy drinkers" based on World Health Organization standards included in the medical examination questionnaire. A light drinker was defined as someone who consumed a low amount of alcohol at a time (i.e., up to 20 g for women and 40 g for men) and drank less than once a week. In contrast, a heavy drinker was defined as someone who consumed more than a specified amount of alcohol.

Exercise levels were categorized as "insufficient," "sufficient," and "fully sufficient" according to the guidelines for physical activity for Koreans,[42] which are based on the 2008 Physical

Activity Guidelines for Americans. Less than 150 minutes of aerobic activity per week was classified as "insufficient," while more than 300 minutes of moderate-intensity aerobic activity performed 3–5 times per week was categorized as "fully sufficient." The "sufficient" category included amounts that fell between "insufficient" and "fully sufficient."

Statistical analysis

Stata SE version 16.1 (StataCorp., College Station, TX, USA) was used for statistical analysis. To examine the relationship between WB and depressive symptoms, odds ratios (ORs) were calculated using a univariate logistic regression analysis. This is because not all continuous variables were normally distributed and cutoff points were specified; therefore, they had to be categorized for analysis. A multiple logistic regression analysis was adjusted for confounding variables.

Ethics statement

This study was approved by the Institutional Review Board of Ewha Womans University Mokdong Hospital (EUMC2018-05-017) and was conducted in accordance with the Declaration of Helsinki established by the World Medical Association. All questionnaires were completed anonymously and the participants provided written informed consent. Prior to responding to the questionnaires, the subjects were given a description of the survey, the purpose of the study, and their contact information.

RESULTS

Characteristics of the study participants

Table 1 presents the baseline and follow-up characteristics of the study population. The majority of participants in both surveys were women in their 20s who had graduated from a 4-year college. A total of 45.3% (baseline) and 42.8% (follow-up) of the participants lived alone, while 69.1% (baseline) and 74.9% (follow-up) were employed at Hospital A.

Regarding their roles and departments, 47.2% of the nurses were physical assistants, 42.9% worked in operating rooms or emergency rooms, and 18.7% worked in general wards. At follow-up, these figures shifted to 13.8%, 37.9%, and 48.2%, respectively.

The proportion of heavy drinkers was 60.8% at baseline and 61.4% at follow-up. However, approximately half of the participants reported insufficient exercise in both surveys. Notably, the proportion of participants in the low WB score group decreased from 53% at baseline to 30.5% after six months, whereas that in the high WB score group increased from 24.2% to 46.3%. In addition, the prevalence of depressive symptoms rose from 9.1% to 24.4%.

Association of WB with depressive symptoms: cross-sectional study

Table 2 presents the association between WB and depressive symptoms after multiple logistic regression analysis (n = 508). In the crude model, compared to the low WB group, the OR for the intermediate WB score group was 1.973, although this difference was not statistically significant. However, the OR for the high WB group compared with the low WB group was 6.287, a statistically significant result (95% confidence interval [CI], 2.992–13.211).

After adjusting for confounding variables, including age, gender, education level, living status (alone or not), alcohol consumption, exercise, department, and workplace, the OR for

https://doi.org/10.3346/jkms.2026.41.e107

Table 1. Characteristics of the study population at the baseline and follow-up survey

Variables	Baseline survey (n = 508)	Follow-up survey (n = 311)
Sex		
Women	480 (94.5)	291 (93.6)
Men	28 (5.5)	20 (6.4)
Age, yr		
< 25	183 (36.0)	94 (30.2)
25–29	262 (51.6)	176 (56.6)
≥ 30	63 (12.4)	41 (13.2)
Education level		
College (3 yr)	29 (5.7)	23 (7.4)
College (≥ 4 yr)	479 (94.3)	288 (92.6)
Living status		
Living alone	230 (45.3)	133 (42.8)
Not living alone	278 (54.7)	178 (57.1)
Workplace		
Hospital A	351 (69.1)	233 (74.9)
Hospital B	157 (30.9)	78 (25.1)
Department		
PA	50 (9.8)	43 (13.8)
Special	240 (47.2)	118 (37.9)
General	218 (42.9)	150 (48.2)
Alcohol consumption		
None	95 (18.7)	53 (17.0)
Light	104 (20.5)	67 (21.5)
Heavy	309 (60.8)	191 (61.4)
Exercise		
Fully sufficient	138 (27.2)	80 (25.7)
Sufficient	107 (21.1)	67 (21.5)
Insufficient	263 (51.8)	164 (52.7)
Workplace bullying score (WPBN-TI score)		
Low (< 19 or NA[a])	269 (53)	95 (30.5)
Intermediate (19–25)	116 (22.8)	72 (23.2)
High (≥ 26)	123 (24.2)	144 (46.3)
Depressive symptoms (CES-D ≥ 16)		
No	462 (90.9)	235 (75.6)
Yes	46 (9.1)	76 (24.4)

Values are presented as number (%).
PA = physician assistant, WPBN-TI = Workplace Bullying in the Nursing-Type Inventory, NA = not applicable, CES-D = Korean version of the Center for Epidemiological Studies Depression Scale.
[a]Not applicable due to the answer given during training workshop.

Table 2. Association of WB score with depressive symptoms: multiple logistic regression analysis (n = 508)

WB score	No.	Case	Crude OR	95% CI	Adjusted OR	95% CI
Low (< 19 or NA[a])	269	11	1		1	
Intermediate (19–25)	116	9	1.973	0.795–4.898	2.080	0.791–5.472
High (≥ 26)	123	26	6.287	2.992–13.211	6.606	2.926–14.915

WB = workplace bullying, OR = odds ratio, CI = confidence interval, NA = not applicable.
[a]Not applicable due to the answer given during training workshop.

the intermediate WB score group remained at 2.080, but was still not statistically significant. In contrast, the adjusted OR for the high WB score group compared with the low WB score group was 6.606, which was statistically significant (95% CI, 2.926–14.915).

Association of changes in WB with depressive symptoms: prospective study

Table 3 shows the association between changes in WB scores and depressive symptoms after the multiple logistic regression analysis (n = 311). Before conducting the analysis, WB levels were categorized into two groups—"absent" and "present"—based on the median score (19). Participants were then classified into four groups according to the presence of

https://doi.org/10.3346/jkms.2026.41.e107

Table 3. Association of the change of WB with depressive symptoms: multiple logistic regression analysis (n = 311)

Change of WB	No.	Case	Crude OR	95% CI	Adjusted OR	95% CI
Both absent	61	5	1		1	
Present to absent	31	1	0.373	0.042–3.344	0.420	0.045–3.927
Both present	97	22	3.285	1.172–9.211	4.308	1.449–12.806
Absent to present	97	35	6.323	2.316–17.260	7.647	2.639–22.157

Adjusted for age, gender, education, living alone, alcohol consumption, exercise, department, workplace, and depressive symptoms at baseline survey.
WB = workplace bullying, OR = odds ratio, CI = confidence interval.

WB at both baseline and follow-up: "both absent," "present to absent," "both present," and "absent to present."

In the crude model, the ORs for the "present to absent," "both present," and "absent to present" groups were 0.373 (95% CI, 0.042–3.344), 3.285 (95% CI, 1.172–9.211), and 6.323 (95% CI, 2.316–17.260), respectively, compared to the "both absent" group. After adjusting for confounding variables including age, gender, education level, living status (alone or not), alcohol consumption, exercise, department, and workplace, the adjusted ORs for the "present to absent," "both present," and "absent to present" groups were 0.420 (95% CI, 0.045–3.927), 4.308 (95% CI, 1.449–12.806), and 7.647 (95% CI, 2.639–11.157), respectively, compared to the "both absent" group.

DISCUSSION

Among newly hired nurses, the prevalence of depressive symptoms increased from 9.1% to 24.4% over the six months after they began working. Specifically, the prevalence rates were 8.2% in the "both absent" group, 3.2% in the "present to absent" group, 22.7% in the "both present" group, and 36.1% in the "absent to present" group.

Depressive symptoms, which can lead to serious problems such as suicide[43] should be thoroughly explored and prevented to ensure patient safety. Our cross-sectional study showed a statistically significant increase in depressive symptoms as WB among nurses increased. In the follow-up study, compared to nurses who did not experience WB at both time points ("both absent" group), the risk of depression was about 4.3 times higher for nurses who consistently faced WB ("both present" group), and about 7.6 times higher for those newly exposed to WB ("absent to present" group). These findings are consistent with those of previous studies.

For instance, Quine's study[36] of 1,100 community nurses in the NHS Trust reported significantly higher depression rates among nurses who experienced WB. Workplace support was found to be a protective factor. Despite these important findings, the study's cross-sectional design demonstrated a correlation between WB and depression. Similarly, Yildirim's research on Turkish nurses[44] found that WB could lead to depression, reduced motivation, impaired concentration, and decreased productivity. This study also faced limitations in ruling out reverse causality because of its cross-sectional nature. Ko et al.'s study[38] of 484 Taiwanese nurses confirmed that both work- and person-related bullying were significant predictors of depression, although this was also a cross-sectional study. Unlike previous studies, our prospective design strengthens the evidence of this relationship. Our study differs by confirming that WB is likely a causal factor of depressive symptoms in nurses.

https://doi.org/10.3346/jkms.2026.41.e107

However, a longitudinal study of 1,582 Norwegian nurses[10] found that, in a hierarchical multiple regression analysis, exposure to bullying at baseline did not significantly increase depressive symptoms after one year. The reason these results differ from our findings may be that different measurement tools were used to assess WB and depressive symptoms.

However, the results of studies targeting similar occupations are consistent with our findings although longitudinal studies on nurses are very rare, Loerbroks et al.[18] conducted a prospective study on WB and depression among 621 German junior physicians and found that WB at baseline predicted increased depressive symptoms after one year and three years. This result is likely consistent with our study because hospital staff members share a similar organizational culture. However, they used only a single question—"Have you been subjected to bullying?"—whereas we utilized a more comprehensive 16-item scale specifically designed to measure the level of WB among nurses.

In addition, in a longitudinal study of 5,701 Danish eldercare workers,[45] OR of developing Major Depressive Episode (MDE) from baseline bullying were significantly higher for occasional bullying (being bullied "now and then" or "monthly") and for frequent bullying (being bullied "weekly" or "daily/almost daily"). Furthermore, a dose-dependent effect was observed. This suggests that WB is likely to be a cause of MDE, similar to the results of this study. However, caution is required in the interpretation because our study examined depressive symptoms rather than the MDE as an outcome.

First, we expected to observe a cumulative dose-response relationship between WB and depressive symptoms. However, in our study, nurses who transitioned into experiencing bullying ("absent to present") had higher ORs of depressive symptoms than those who consistently experienced bullying ("both present") or those who never experienced it ("both absent"). One possible explanation is that in Korean nursing culture, WB may be considered to typically target new hires and is expected to decrease as they gain experience and become more proficient in their roles.

Our study uniquely highlighted the impact of changes in WB on depression, particularly during the early stages of employment when work environments can shift rapidly. The higher risk of depressive symptoms in the "absent to present" group, compared to the "both present" group, might be due to several factors. First, nurses who were persistently bullied may have been less likely to participate in the follow-up survey. However, our analysis found no significant differences in intermediate and high WB scores at baseline between the dropout (n = 197) and follow-up groups (n = 311) (**Supplementary Table 1**).

Second, newly hired nurses may develop coping strategies over time. Coping strategies are techniques used to manage stress, reduce anxiety, and manage difficult emotions or situations.[45] Several studies have been conducted on the coping strategies used by healthcare professionals, including nurses who face WB.[46-48] A recent qualitative study[49] showed that nursing interns who are particularly vulnerable to bullying employ various coping strategies, such as emotional distancing, seeking peer support, reframing bullying as a learning experience, and some ultimately achieve cultivation and growth of psychological resilience.

As mentioned previously, WB is likely to be a cause of depression among nurses. Prevention of WB is crucial for mitigating depressive symptoms. Understanding the mechanisms underlying WB is essential; however, this study did not investigate the underlying causes of bullying.

https://doi.org/10.3346/jkms.2026.41.e107

While this was not the primary focus of our results, it is worth noting that WB victims showed little association with the sociodemographic characteristics of nurses, such as age, gender, or education level. To date, no consistent link has been established between demographic factors and the likelihood of being targeted by WB.[50,51] A descriptive study of 249 nurses by Johnson and Rea[26] found no relationship between WB and demographic factors, such as sex, age, education level, or sexual orientation, which is consistent with our study.

Our study had several limitations. First, because the study included only newly hired nurses from two university hospitals, the generalizability of the findings to all hospital nurses should be interpreted with caution. However, these results may also be applicable to university hospitals with similar working conditions. Further research is required to examine new nurses working in a broad range of hospitals.

Second, our study had a six-month follow-up, which did not account for long-term effects. However, WB experiences for new nurses often occur in the early stages when they are still unfamiliar with their tasks. As nurses gain power and status within an organization, they can become perpetrators. This shift may be due to the bullying culture being culturally institutionalized rather than "culturally institutionalized" rather than "intentionally perpetrated." Those who successfully adapt to this culture do not experience conflict with it, while those who are "unsuccessful" may feel stressed. Therefore, additional studies are needed to examine the long-term health effects of WB in newly hired and experienced nurses.

Third, the depressive symptoms in our study were assessed using self-reported measures rather than clinical diagnoses. This may lead to either an overestimation or underestimation of the prevalence of depressive symptoms and WB. Additionally, individuals with depressive symptoms were more likely to report experiencing bullying. However, as our study followed the participants over time to assess the development of depressive symptoms based on changes in WB, this potential bias was minimized. Repeated assessments in longitudinal studies allow for greater reliability by facilitating the detection of stable trends and enabling the examination of within-person consistency in responses. Moreover, by establishing a temporal order between exposure and outcome, longitudinal studies can enhance the interpretability of causal relationships, even when self-reported data are used. It is also important to note that clinical interviews largely rely on patient self-reports.

Our findings have several implications for the prevention and management of WB. Interventions are required to address the causes of WB and to address authoritarian leadership and organizational culture, which have been identified as major causes of bullying in previous studies. To achieve this, training and education programs for managers are essential.

Son et al.[21] defined "Tae-Um" (or "Taeoom") as "making someone feel stressful by excessively and unfairly blaming for mistake or unskillfulness of nursing professions." The authors described how newly hired nurses often become stressed and depressed because of the Tae-Um that they want to leave their jobs, which is exacerbated by unstructured and superficial training. Therefore, establishing appropriate education and training systems for new nurses is one of the most fundamental solutions.

Second, depression should be prevented and managed. Nurses are considered a high-risk group for depression, with a prevalence rate of 18–61.7% according to literature from various

https://doi.org/10.3346/jkms.2026.41.e107

countries.[52-55] Depression should be screened and treated early, and employees should be provided with coping skills to manage work-related stress.

This study had several strengths. First, we highlighted WB among nurses and its link to depression, an issue that has received insufficient attention despite its importance in public health. Second, we overcome the limitations of previous cross-sectional studies by using a longitudinal design.

In conclusion, WB is a significant cause of depressive symptoms among hospital nurses. Therefore, both individual and organizational interventions are necessary in nursing environments to prevent bullying and mitigate its negative effects.

SUPPLEMENTARY MATERIAL

Supplementary Table 1

Comparison between drop-out nurses and follow-up participants

REFERENCES

1. Einarsen S, Skogstad A. Bullying at work: epidemiological findings in public and private organizations. *Eur J Work Organ Psychol* 1996;5(2):185-201. CROSSREF
2. Einarsen S, Hoel H, Zapf D, Cooper CL. The concept of bullying at work. In: Einarsen S, Hoel H, Zapf D, Cooper CL, editors. *Bullying and Emotional Abuse in the Workplace: International Perspectives in Research and Practice.* London, UK: Taylor and Francis; 2003, 3-30.
3. Björkqvist K, Osterman K, Hjeltback M. Aggression among university employees. *Aggress Behav* 1994;20(3):173-84. CROSSREF
4. Carbo J, Hughes A. Workplace bullying: developing a human rights definition from the perspective and experiences of targets. *WorkingUSA* 2010;13(3):387-403. CROSSREF
5. Xu T, Magnusson Hanson LL, Lange T, Starkopf L, Westerlund H, Madsen IEH, et al. Workplace bullying and workplace violence as risk factors for cardiovascular disease: a multi-cohort study. *Eur Heart J* 2019;40(14):1124-34. PUBMED | CROSSREF
6. Xu T, Magnusson Hanson LL, Clark AJ, Ersbøll AK, Westerlund H, Madsen IEH, et al. Onset of workplace bullying and risk of weight gain: a multicohort longitudinal study. *Obesity (Silver Spring)* 2020;28(11):2216-23. PUBMED | CROSSREF
7. Xu T, Magnusson Hanson LL, Lange T, Starkopf L, Westerlund H, Madsen IEH, et al. Workplace bullying and violence as risk factors for type 2 diabetes: a multicohort study and meta-analysis. *Diabetologia* 2018;61(1):75-83. PUBMED | CROSSREF
8. Vignoli M, Guglielmi D, Balducci C, Bonfiglioli R. Workplace bullying as a risk factor for musculoskeletal disorders: the mediating role of job-related psychological strain. *BioMed Res Int* 2015;2015:712642-8. PUBMED | CROSSREF
9. Rodríguez-Muñoz A, Moreno-Jiménez B, Sanz-Vergel AI. Reciprocal relations between workplace bullying, anxiety, and vigor: a two-wave longitudinal study. *Anxiety Stress Coping* 2015;28(5):514-30. PUBMED | CROSSREF
10. Reknes I, Pallesen S, Magerøy N, Moen BE, Bjorvatn B, Einarsen S. Exposure to bullying behaviors as a predictor of mental health problems among Norwegian nurses: results from the prospective SUSSH-survey. *Int J Nurs Stud* 2014;51(3):479-87. PUBMED | CROSSREF
11. Nielsen MB, Nielsen GH, Notelaers G, Einarsen S. Workplace bullying and suicidal ideation: a 3-wave longitudinal Norwegian study. *Am J Public Health* 2015;105(11):e23-8. PUBMED | CROSSREF
12. Kabir H, Chowdhury SR, Roy AK, Chowdhury SA, Islam MN, Chomon RJ, et al. Association of workplace bullying and burnout with nurses' suicidal ideation in Bangladesh. *Sci Rep* 2023;13(1):14641. PUBMED | CROSSREF

13. Nielsen MB, Harris A, Pallesen S, Einarsen SV. Workplace bullying and sleep - A systematic review and meta-analysis of the research literature. *Sleep Med Rev* 2020;51:101289. PUBMED | CROSSREF
14. Ovayolu O, Ovayolu N, Karadag G. Workplace bullying in nursing. *Workplace Health Saf* 2014;62(9):370-4. PUBMED | CROSSREF
15. Kivimäki M, Virtanen M, Vartia M, Elovainio M, Vahtera J, Keltikangas-Järvinen L. Workplace bullying and the risk of cardiovascular disease and depression. *Occup Environ Med* 2003;60(10):779-83. PUBMED | CROSSREF
16. Emdad R, Alipour A, Hagberg J, Jensen IB. The impact of bystanding to workplace bullying on symptoms of depression among women and men in industry in Sweden: an empirical and theoretical longitudinal study. *Int Arch Occup Environ Health* 2013;86(6):709-16. PUBMED | CROSSREF
17. Gullander M, Hogh A, Hansen ÅM, Persson R, Rugulies R, Kolstad HA, et al. Exposure to workplace bullying and risk of depression. *J Occup Environ Med* 2014;56(12):1258-65. PUBMED | CROSSREF
18. Loerbroks A, Weigl M, Li J, Glaser J, Degen C, Angerer P. Workplace bullying and depressive symptoms: a prospective study among junior physicians in Germany. *J Psychosom Res* 2015;78(2):168-72. PUBMED | CROSSREF
19. Kim HB. Shortage of nurses creates bullying culture. The Korea Times. https://www.koreatimes.co.kr/southkorea/society/20190220/shortage-of-nurses-creates-bullying-culture. Updated 2019. Accessed November 11, 2024.
20. Kim R. Nurse died over heavy workload, bullying. The Korea Times. https://www.koreatimes.co.kr/southkorea/health/20190906/nurse-died-over-heavy-workload-bullying. Updated 2019. Accessed November 11, 2024.
21. Son H, Koh M, Kim C, Moon J. The clinical experiences of adaptation as a new nursing staff. *Taehan Kanho Hakhoe Chi* 2001;5(2):988-97. CROSSREF
22. Rutherford A, Rissel C. A survey of workplace bullying in a health sector organisation. *Aust Health Rev* 2004;28(1):65-72. PUBMED | CROSSREF
23. Berry PA, Gillespie GL, Gates D, Schafer J. Novice nurse productivity following workplace bullying. *J Nurs Scholarsh* 2012;44(1):80-7. PUBMED | CROSSREF
24. Abe K, Henly SJ. Bullying (ijime) among Japanese hospital nurses: modeling responses to the revised Negative Acts Questionnaire. *Nurs Res* 2010;59(2):110-8. PUBMED | CROSSREF
25. Hoel H, Salin D. Organizational antecedents of workplace bullying. In: Einarsen S, Hoel H, Zapf D, Cooper CL, editors. *Bullying and Emotional Abuse in the Workplace: International Perspectives in Research and Practice.* New York, NY, USA: Taylor & Francis 2003, 203-18.
26. Johnson SL, Rea RE. Workplace bullying: concerns for nurse leaders. *J Nurs Adm* 2009;39(2):84-90. PUBMED | CROSSREF
27. Salin D. Ways of explaining workplace bullying: a review of enabling, motivating and precipitating structures and processes in the work environment. *Hum Relat* 2003;56(10):1213-32. CROSSREF
28. Farrell GA. From tall poppies to squashed weeds: why don't nurses pull together more? *J Adv Nurs* 2001;35(1):26-33. PUBMED | CROSSREF
29. Daiski I. Changing nurses' dis-empowering relationship patterns. *J Adv Nurs* 2004;48(1):43-50. PUBMED | CROSSREF
30. Hoel H, Einarsen S. Shortcomings of antibullying regulations: the case of Sweden. *Eur J Work Organ Psychol* 2010;19(1):30-50. CROSSREF
31. Ministry of Health and Welfare. Korean Health Care as seen from OECD Health Statistics 2021. http://www.mohw.go.kr/react/al/sal0301vw.jsp?PAR_MENU_ID=04&MENU_ID=0403&CONT_SEQ=366529. Updated 2021. Accessed August 16, 2021.
32. Kim Y, Lee E, Lee H. Association between workplace bullying and burnout, professional quality of life, and turnover intention among clinical nurses. *PLoS One* 2019;14(12):e0226506. PUBMED | CROSSREF
33. Baillien E, De Cuyper N, De Witte H. Job autonomy and workload as antecedents of workplace bullying: A two-wave test of Karasek's Job Demand Control Model for targets and perpetrators. *J Occup Organ Psychol* 2011;84(1):191-208. CROSSREF
34. Spagnoli P, Balducci C. Do high workload and job insecurity predict workplace bullying after organizational change? *Int J Workplace Health Manag* 2017;10(1):2-12. CROSSREF
35. Teo STT, Nguyen D, Trevelyan F, Lamm F, Boocock M. Workplace bullying, psychological hardiness, and accidents and injuries in nursing: a moderated mediation model. *PLoS One* 2021;16(1):e0244426. PUBMED | CROSSREF
36. Quine L. Workplace bullying in nurses. *J Health Psychol* 2001;6(1):73-84. PUBMED | CROSSREF

37. Ekici D, Beder A. The effects of workplace bullying on physicians and nurses. *Aust J Adv Nurs* 2014;31(4):24-33. CROSSREF

38. Ko YY, Liu Y, Wang CJ, Liao HY, Liao YM, Chen HM. Determinants of workplace bullying types and their relationship with depression among female nurses. *J Nurs Res* 2020;28(3):e92-92. PUBMED | CROSSREF

39. Long JS. *Regression Models for Categorical and Limited Dependent Variables.* Thousand Oaks, CA, USA: Thousand Oaks: Sage Publications; 1997.

40. Lee Y, Lee M. Development and validity of workplace bullying in nursing-type inventory (WPBN-TI). *J Korean Acad Nurs* 2014;44(2):209-18. PUBMED | CROSSREF

41. Cho MJ, Kim KH. Diagnostic validity of the CES-D(Korean version) in the assessment of DSM-III-R major depression. *J Korean Neuropsychiatr Assoc* 1993;32(3):381-99.

42. Kim Y, Yang Y, Park H, Kim H. *Development of Guideline for Physical Activity and Self-help for Koreans.* Seoul, Korea: Ministry of Health and Welfare; 2012.

43. Choi M, Ha J. The effect of workplace bullying on suicidal ideation of hospital nurses: Moderated mediation effect of socially prescribed perfectionism and self-criticism. *Korean J Woman Psychol* 2019;24(2):193-216.

44. Yildirim D. Bullying among nurses and its effects. *Int Nurs Rev* 2009;56(4):504-11. PUBMED | CROSSREF

45. Lazarus RS. *Stress, Appraisal, and Coping.* New York, NY, USA: Springer; 1984.

46. Hawkins N, Jeong S, Smith T. Negative workplace behavior and coping strategies among nurses: a cross-sectional study. *Nurs Health Sci* 2021;23(1):123-35. PUBMED | CROSSREF

47. Yoo SY, Ahn HY. Nurses' workplace bullying experiences, responses, and ways of coping. *Int J Environ Res Public Health* 2020;17(19):7052. PUBMED | CROSSREF

48. Reknes I, Einarsen S, Pallesen S, Bjorvatn B, Moen BE, Magerøy N. Exposure to bullying behaviors at work and subsequent symptoms of anxiety: the moderating role of individual coping style. *Ind Health* 2016;54(5):421-32. PUBMED | CROSSREF

49. Zheng J, Zhou J, Zheng X, Peng Q, Tang W. A qualitative study on the experiences and coping strategies of nursing interns facing bullying in nursing education. *Nurse Educ Today* 2025;146:106538. PUBMED | CROSSREF

50. Johnson SL. An ecological model of workplace bullying: a guide for intervention and research. *Nurs Forum* 2011;46(2):55-63. PUBMED | CROSSREF

51. Hoel H, Cooper CL, Faragher B. The experience of bullying in Great Britain: The impact of organizational status: bullying in the workplace: recent trends in research and practice. *Eur J Work Organ Psychol* 2001;10(4):443-65. CROSSREF

52. Letvak S, Ruhm CJ, McCoy T. Depression in hospital-employed nurses. *Clin Nurse Spec* 2012;26(3):177-82. PUBMED | CROSSREF

53. Ruggiero JS. Health, work variables, and job satisfaction among nurses. *J Nurs Adm* 2005;35(5):254-63. PUBMED | CROSSREF

54. Lee HY, Kim MS, Kim O, Lee IH, Kim HK. Association between shift work and severity of depressive symptoms among female nurses: the Korea Nurses' Health Study. *J Nurs Manag* 2016;24(2):192-200. PUBMED | CROSSREF

55. Chang Y, Wang PC, Li HH, Liu YC. Relations among depression, self-efficacy and optimism in a sample of nurses in Taiwan. *J Nurs Manag* 2011;19(6):769-76. PUBMED | CROSSREF