Iran J Public Health, Vol. 54, No.5, May 2025, pp.963-973

Original Article

Influence of Direct Supervisors' Attitude on Depression among Nurses: Analysis of the Korean Working Conditions Survey

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(Received 10 Sep 2024; accepted 18 Dec 2024)

Abstract

Background: We aimed to examine the influence of a direct supervisor's attitude on depression among nurses.

Methods: This was a secondary analysis of data from the fifth Korean Working Conditions Survey, which collected information from 467 registered nurses in Seoul, South Korea. Descriptive statistics and the Rao–Scott test were performed to determine the difference between general and work-related characteristics according to whether the nurses were depressed or not. Multiple logistic regression analysis was performed by adjusting for covariates to analyze the association between the attitude of the direct supervisor's behavior and depression among nurses.

Results: Logistic regression analysis revealed a significant association between the direct supervisor's attitude and depressive symptoms in nurses. After multivariable adjustment, compared with the group with the most positive supervisor attitudes, the odds ratios for depressive symptoms in groups with increasingly negative perceptions of supervisor attitudes were 2.615 (95% CI: 0.96–7.12), 2.921 (95% CI: 1.64–13.29), and 4.844 (95% CI: 1.46–12.18), respectively. The results showed that the direct supervisor's negative attitude was positively associated with the nurse's depressive symptoms.

Conclusion: Negative supervisor attitudes are significantly associated with depression in nurses. Effective strategies and policies, such as a zero-tolerance policy against negative disrespectful attitudes and behavior in the hospital and proper management of the direct supervisor's attitude, are needed to reduce the risk of depression among nurses. Interventions aimed at reducing nurses' depressive symptoms are suggested as an effective way to prevent and manage their depressive symptoms.

Keywords: Registered nurses; Depression; Depressive symptoms; Direct supervisor; Mental health

Introduction

A direct supervisor is an important workplace factor that can directly or indirectly affect workers' physical and mental health, as they provide on-the-job training and managerial supervision that includes the knowledge, skills, and attitudes needed for workers to do their jobs (1). Supportive supervisory attitudes increase employee performance (2), while negative supervisory attitudes

DOI: https://doi.org/10.18502/ijph.v54i5.18631

increase perceived stress and insomnia (3). Similarly, employees who experience conflict with their supervisors have been shown to experience increased anxiety and depressive symptoms (4), suggesting that supervisors' attitudes have a strong influence on workers' mental health problems.

In particular, nurses frequently experience negative attitudes from their supervisors as a consequence of the intensity and nature of their life-critical duties. In addition, nurses and their supervisors are often subjected to poor working conditions, such as irregular work schedules, insufficient or inadequate breaks, and low staffing ratios (5, 6). The prevalence of nurses experiencing negative attitudes from their supervisors within healthcare settings is reported to be around 47%, with 36% reporting that these experiences negatively impact their nursing performance (7). Nurses who experience disrespectful attitudes and impersonal treatment from their supervisors may experience severe emotional burnout, which can ultimately lead to turnover intentions resulting from their psychological resources being gradually depleted (8). Negative attitudes from supervisors impact the mental health and work morale of individual nurses and can also have negative consequences in terms of safety risks, including medical errors (7, 9). Workplace factors have an overall adverse impact on nurses' mental health (10) and may contribute to depressive symptoms (11). In addition, severe depressive symptoms can lead to suicidal ideation and behavior; therefore, it is important to explore antecedents to reduce depressive symptoms in nurses (12).

Despite the adverse effects of supervisors' attitudes on nurses, most previously reported studies have focused on other occupations, such as the police, military, and general occupations (13, 14). However, while research specifically examining the link between supervisors' attitudes and depression among nurses is lacking, some studies have investigated the relationship between supervisors' impersonal attitudes, nurses' burnout, and organizational effectiveness, primarily focusing on outcomes from an organizational perspective (15). Additionally, another study highlighted the significant positive relationships between ethical leadership, trust in supervisors, and job embeddedness, with trust in supervisors fully mediating the relationship between ethical leadership and job embeddedness; this finding suggests that supervisors' attitudes significantly impact nurses' mental health and their ability to provide effective patient care within clinical settings (16). However, previous studies have largely overlooked the aspect of nurses' depression and the topic is relatively new, with more than 50% of Korean studies conducted between 2011–2017 (17). Consequently, there is a lack of measures to prevent and mitigate psychosocial problems, such as nurse depression.

We aimed to examine the influence of direct supervisor's attitudes on depression in nurses.

Methods

Study design

This study was a secondary data analysis study using raw data from the fifth Korean Working Conditions Survey (KWCS). This survey was conducted by the Korea Occupational Safety and Health Research Institute (OSHRI) in 2017. This study's analysis of the 2017 KWCS data aimed to determine the effects of the direct supervisor's attitude on nurses' depression.

Research participants and data sources

The KWCS, based on the European Working Conditions Survey, commenced in 2006 and is conducted in Korea by the OSHRI every 3 years. The survey is a cross-sectional study based on a structured questionnaire and is conducted through individual interviews via household visits by specialized surveyors from the Korea OSHRI. The data from the 2017 KWCS, provides a comprehensive picture of work environments, including working conditions, employment type, occupation, industry, exposure to hazards, and job security, among Korean employees aged 15 yr and older. The survey's sample households are stratified by city, province, and region using Sta-

tistics Korea's 2010 Population and Housing Census.

This study utilized the 2017 KWCS data for analysis. From the 50,205 participants in the survey's original data, 494 nurses with the occupational code name of 'nurse' were selected. Subsequently, 16 nurses with a high school education or less and 1 nurse under the age of 19 yr were excluded, leaving 477 nurses. In addition, nurses with missing values for any of the variables included in this study were excluded, leaving 467 nurses for analysis (Fig. 1). Studies based on the analysis of KWCS data provided a solid foundation for generalizing findings to the working conditions and health status of workers across South Korea. Therefore, the data was highly representative when focusing on specific occupational groups, such as nurses.

This study was approved as exempt from review by the Institutional Review Board (IRB No. E-2108-193-1248) of the Kyungpook National University, as the original data of the 2017 KWCS does not reveal the identity of the participants. In addition, the data was used for research purposes only and was not made publicly available. This study's data will be kept for about three years from the end of the study and then destroyed.

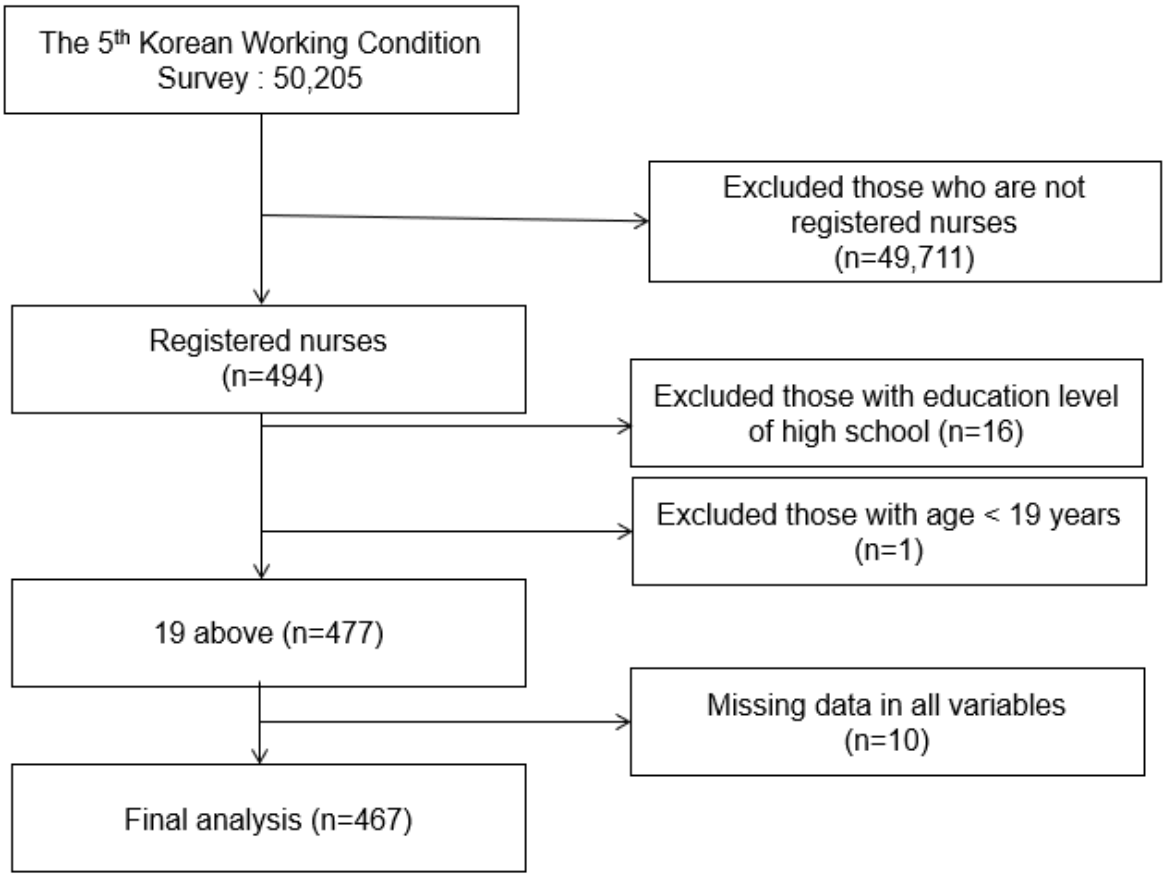

Fig. 1: Flow chart of study population

Measures

Direct supervisor's attitude

The direct supervisor's attitude was measured using a 5-point Likert scale on a scale from *strongly agree* [1] to *strongly disagree* [5] for six statements, such as "Respects me as a person," and "Praises and recognizes me when I do a good job." Based on previous research, this study scored each of the six statements as 0 for *strongly agree*, *mostly agree*, or *neutral*, and 1 for *mostly disagree* or *completely*

disagree. The scores obtained for the six statements were added to produce a range between 0–6, with higher scores indicating an increased direct supervisor's negative attitude (17). The final distribution of scores was categorized into four groups (0–1, 2–3, 4–5, and 6) based on previous studies (18).

Nurse's depression symptoms

To measure depression in nurses, we used the five-item WHO Five Well-Being Index (WHO-5). This tool comprises five statements that ask about feelings over the past 2 weeks. An example statement is "I have been joyful and in a good mood," with responses ranging from *always* [5], *most of the time* [4], *more than half of the time* [3], *less than half of the time* [2], *sometimes* [1], and *never* [0]. Using this tool, each item's scores are summed to give a value between 0 and 25 and then multiplied to give a percentage score; 0% represents extremely poor mental health and 100% represents the best mental health. Scores below 50% are considered indicative of mental health conditions, including a higher risk of depression (19).

Participants demographic and work-related characteristics

The 2017 KWCS survey participants' demographic and sociodemographic characteristics included gender, age, education level, and subjective health status. The participants' work-related characteristics included average monthly income, years at current job, shift work, job satisfaction, and coworker support. Participants' ages were categorized as 20–29, 30–39, 40–49, 50–59, and 60+ yr. The participants' education level was grouped into vocational college, bachelor's degree, or higher. Their subjective health status was labeled as "yes" for good and "no" for bad. The participants' average monthly income was categorized as less than 1.9 million won, 2–3 million won, 3–4 million won, and more than 4 million won. Years of service were grouped as less than 1, 1–5, 5–9, and more than 10 years (20).

Data analysis

The 2017 KWCS survey data used in this study is composite sample data, and to estimate the results of the population more clearly, a composite sample analysis was conducted by applying weights in the analysis. The collected data were analyzed using the SPSS Statistics software (v.23.0 for Windows, IBM Statistical Software™, IBM Corp. Armonk, NY, USA)

Frequencies, percentages, means, and standard deviations were used to describe the general characteristics and work-related variables. The difference in depressive symptoms based on the participants' general and work-related characteristics was analyzed using the Rao–Scott test. The Rao–Scott test was used because it adjusts for distortions in sample distributions caused by stratified or clustered sampling designs in simple cross-tabulation analyses, providing more accurate test results (21).

Results

General and work-related characteristics of study participants

Table 1 shows the general and work-related characteristics of the study participants. When divided into age groups, participants between 30–39 yr (n = 197, 42.5%) were the most frequent. The majority (n = 459; 98.3%) were female. Over half of the participants were educated at a bachelor's degree level (n=275; 58.9%), and 98.7% (n=461) reported their subjective health as good. Half of the participants reported an average monthly income of more than 2 million won and less than 3 million won (n=235; 50.3%). Among the participants, 37.6% (n=149) reported having clinical experience of more than 1 but less than 5 years; 61.9% (n=298) did not work shifts. Additionally, 94.5% (n = 445) of participants reported good job satisfaction and 86.5% (n = 404) reported good coworker support (Table 1).

Table 1: General and Work-related Characteristics of the Study Participants (N=467)

Variable Categories		n (%)
Total		467 (100.0)
Age (y)	20-29	106 (22.7)
	30-39	197 (42.5)
	40-49	116 (24.8)
	50-59	45 (9.6)
	≥ 60	2 (0.4)
Sex	Male	8 (1.7)
	Female	459 (98.3)
Education	Associate degree	186 (39.8)
	Bachelor's degree	275 (58.9)
	Postgraduate	6 (1.3)
Self-rated health	Good	461 (98.7)
	Bad	6 (1.3)
Income	199<	84 (17.9)
	200-300	235 (50.3)
	300-400	94 (20.3)
	≥ 400	54 (11.5)
Working duration	<1(year)	26 (8.9)
	1-5	149 (37.6)
	5-9	104 (21.3)
	≥ 10	188 (32.2)
Shift work	Yes	169 (38.1)
	No	298 (61.9)
Job satisfaction	Good	445 (94.5)
	Bad	22 (5.5)
Colleague's support	Good	404 (86.5)
	Bad	63 (13.5)

Associations between study participants' general and work-related characteristics and depression status

Associations between the participants' general and work-related characteristics and depression status are shown in Table 2. There was no statistically significant difference in the participants' reported depression status by age, gender, education, average monthly income, years at current job, shift work, or coworker support. However, there was a statistically significant difference between their depressive symptoms and subjective health status (P= .003). For example, 77.2% of participants who reported their subjective health to be poor also reported depressive symptoms. In addition, there was a statistically significant difference between participants' depressive symptoms and their job satisfaction (P= .011). The worse participants perceived their overall health and job satisfaction, the more they reported depressive symptoms.

Table 2: Differences in General and Work-related Characteristics by Depression Status among Study Participants (N=467)

Variable		Non-depressed Group		Depressed Group		
		n	(%)	n	(%)	*P-value*
Total		369	80.3	98	19.7	
Age (yr)	20-29	91	84.9	15	15.1	
	30-39	151	77.3	45	22.7	
	40-49	89	76.9	27	23.1	.471
	50-59	36	76.1	9	23.9	
	≥ 60	1	51.8	1	48.2	
Sex	M	7	96.2	1	3.8	
	F	362	79.5	97	20.5	.054
Education	Associate degree	139	76.7	47	23.3	
	Bachelor's degree	225	82.5	50	17.5	.306
	Postgraduate	5	87.4	1	19.6	
Self-rated health	Good	368	80.8	93	19.2	**.003**
	Bad	1	22.8	5	77.2	
Income	199<	66	77.1	18	22.9	
	200-300	186	81.1	49	18.9	.931
	300-400	77	80	17	20	
	≥ 400	40	80.6	14	19.4	
Working duration	<1(year)	24	86.2	2	13.8	
	2-4	118	78.9	31	21.1	.765
	5-9	81	82.8	23	17.2	
	≥ 10	146	78.5	42	21.5	
Shift work	Yes	128	75.9	41	24.1	0.12
	No	241	83.0	57	17.0	
Job satisfaction	Good	328	82.7	71	17.3	**.011**
	Bad	41	69.2	27	30.8	
Colleague's support	Good	293	82.2	73	17.8	.064
	Bad	75	74.4	24	25.6	

Distribution of direct supervisor's attitude and nurses' depressive symptoms

The distribution data reflecting the influence of the direct supervisor's attitude on nurses' depressive symptoms are presented in Table 3. Summed scores were divided into four groups based on previous research (17) as follows: Group 1 (0–1 points), Group 2 (2–3 points), Group 3 (4-5 points), and Group 4 (6 points), with higher scores indicating more negative supervisor attitudes. There was a statistically significant difference between the depressed and non-depressed groups based on the attitude of the direct supervisor ($P<.05$). When looking at the frequency within the depressed group, those who perceived their supervisor's attitude most positively were least likely to be depressed, while those who perceived their supervisor's attitude negatively were more likely to be depressed.

Table 3: Distribution of the Scores of Direct Supervisor's Attitude According to Depression status (N=467)

Scores of direct supervisor's attitudes	Total	Non-depressed Group	Depressed Group	P-value†
Group1 (0-1)	427	346 (82.1%)	81 (17.9%)	< 0.05
Group 2 (2-3)	25	14 (60.7%)	11 (39.3%)	
Group 3 (4-5)	9	6 (56.3%)	3 (43.7%)	
Group 4 (scored 6)	6	3 (62.6%)	3 (37.4%)	

†*P-value* were based on Rao-Scott test. The variable scored the quality of direct supervisor's behavior. Group1 means highest quality, 4 means lowest quality

Association between direct supervisor's attitude and nurses' depression status

The results of the logistic regression analysis examining the association between the direct supervisor's attitude and nurses' depression status are shown in Table 4. In the unadjusted model (Model 1), the ORs for Groups 2, 3, and 4 were 2.978 (95% CI: 1.09–8.09), 3.568 (95% CI: 1.97–16.05), and 7.708 (95% CI: 1.85–13.70), respectively, compared with Group 1, which had the most reported positive supervisor attitudes. After adjusting for the participants' subjective health and job satisfaction scores, the depressive symptoms' ORs remained significantly higher for participants who reported that their supervisor's attitude was poor. Specifically, compared with Group 1, Groups 2, 3, and 4's ORs for depressive symptoms were 2.615 (95% CI: 0.96–7.12), 2.921 (95% CI: 1.64–13.29), and 4.844 (95% CI: 1.46–12.18), respectively. In the adjusted model (Model 2), negative perceptions of supervisor attitudes were significantly linked to increased depressive symptoms among nurses.

Table 4: Association between Scores of Direct Supervisor's Behaviors and Depressive symptoms (N=467)

	Depressive symptoms			
	Model 1 Crude odds ratio	(95%CI)	Model 2 Adjusted odds ratio	(95%CI)
Scores of direct supervisor's behavior				
Group 1	reference	reference	reference	reference
Group 2	2.978	(1.09-8.09)	2.615	(0.96-7.12)
Group 3	3.568	(1.97-16.05)	2.921	(1.64-13.29)
Group 4	7.708	(1.85-13.70)	4.844	(1.46-12.18)

Logistic regression analysis was performed by adjusting for covariates. Individuals with WHO-5 scores <13 were considered to have depressive symptoms. Model 1 was unadjusted ORs. Model 2 was adjusted by self-rated health and job satisfaction.
CI, confidence interval

Discussion

The current study aimed to investigate the extent of direct supervisor attitudes and depressive symptoms experienced by nurses and to identify the impact of direct supervisor attitudes on nurses' depression. The findings showed that after controlling for differences in demographic, sociodemographic, and work-related characteristics, nurses' depressive symptoms increased significantly with negative perceptions of their direct supervisor's attitude.

The prevalence of depressive symptoms among nurses included in this study was 19.7%, which is higher than the 18.3% prevalence of depression among elementary school teachers reported in a previous study using the same tool (22). However, comparing the prevalence of depressive symptoms across studies is difficult because of variations in measurement tools and participant characteristics. Nurse participants in this study reported a higher prevalence of depressive symptoms compared with Korean women's 6.9% prevalence of depressive symptoms reported by the Ministry of Health and Welfare's Mental Illness Survey (23).

Depression among nurses poses a personal health risk and directly affects nursing quality and patient safety (24). Furthermore, depressive symptoms in nurses are associated with high turnover rates and resignations, and in severe cases, they can lead to suicide attempts and other negative outcomes (25). The mental health of nurses also has a significant impact on patient outcomes and the quality of healthcare services, making it essential to manage and prevent mental health issues among nurses (26, 27). Therefore, organizational attention is necessary to prevent depression among nurses. Moreover, intervention strategies for nurses experiencing depressive symptoms should be established. To prevent the effects of depression on nurses, early identification and intervention are necessary, including regular mental health screenings. Additionally, establishing psychological counseling centers in medical institutions that offer ongoing psychiatric consultations, and provide various social and psychological intervention programs for nurses are vital measures for preventing depression.

Supervisory relationships are pivotal in the workplace, directly or indirectly influencing employees' physical and mental health while shaping their work environment, well-being, and job performance (1). Employees who work with supervisors who exhibit disrespectful attitudes may feel worthless, lack meaning in their work, and, ultimately, become disengaged (28). According to Cobb et al. (29), dignified treatment and respect for others is one of the concepts that constitute social support, and low social support is highly associated with depression (30). Therefore, nurses who perceive supervisors to have a non-respectful attitude may suffer high depressive symptoms.

After controlling for differences in demographic, sociodemographic, and work-related characteristics, this study's findings confirmed that nurses' depressive symptoms increased significantly with negative perceptions of their direct supervisor's attitude. These findings align with those of previous studies. For example, one study determined that workers who experience conflicts with their immediate supervisors are more likely to experience symptoms of anxiety and depression (4). Furthermore, a significant association demonstrated between impersonal supervisory approaches in the workplace and emotional exhaustion among employees, which resonates with the findings of this study (31). Previous studies conducted on nurses have also identified the impact of supervisor support on nurses' mental health, which aligns with the findings of this study (15, 16).

The nature of nursing duties in healthcare settings involves tasks directly related to human life; therefore, collaboration among nurses is crucial, and it is important for nurses to be sensitive to each other's needs and provide assistance in urgent situations (24). In the clinical setting, where nurses are racing against time to perform patient care, supervisors who are perceived as unsupportive or disrespectful can result in nurses experiencing psychological atrophy; this may ultimate-

ly lead to them avoiding asking for direct help from their supervisors or exchanging information necessary for patient care (32). Ultimately, this can lead to depressive symptoms in nurses, which can, among the effects mentioned previously, negatively impact patient's satisfaction with their care and their outcomes (33). Therefore, it is important for managers in healthcare organizations to assess nurses' experiences with their supervisors' attitudes and to monitor the supervisor–nurse relationship on an ongoing basis.

Based on the findings of this study, there is a need to develop leadership training programs within nursing organizations to reduce the negative attitudes of supervisors and social psychological programs to support the victims. Increasing nurses' awareness of disrespectful attitudes and impersonal behaviors and improving their assertive communication skills resulted in a supportive and respectful organizational culture (34). Therefore, preceptor and manager training should educate nurses to establish a zero-tolerance policy for antisocial attitudes and behaviors in the workplace and to encourage them to report such incidents. Furthermore, supervisors need to be enabled to create supportive environments to alleviate nurses' depressive symptoms, especially in environments where there are high levels of stress. Therefore, interventions focused on training supervisors to improve the mental health-oriented design of work and increase social support to nurses need to be introduced.

Training supervisors and enhancing nurses' communication skills, including assertiveness, is important for them to cope with depression. The results of this study show that depressive symptoms are more likely to occur among nurses who perceive their supervisors' attitudes and behaviors negatively; this highlights the need for psychological counseling and depression prevention programs in the workplace. Additionally, targeted interventions in supervisor training and workplace policies are essential to foster supportive management practices and improve nurses' mental health outcomes.

Finally, the significance and limitations of this study are addressed. The key significance lies in confirming the association between supervisor attitudes and depression in nurses using data from the 2017 KWCS, thus enhancing the generalizability of the findings. In addition, the study's results illustrated that nurses who perceived their supervisors' attitudes negatively were vulnerable to depressive symptoms; this finding can be used as a basis for screening risk groups for depressive symptoms and developing psychosocial protective measures in the future. Limitations of this study include the following: first, there is a limitation in establishing a clear causal relationship given the cross-sectional nature of the KWCS data, although the association between supervisor attitudes and depression was confirmed. That is, depressed individuals may interpret situations paradoxically or view them in a negative light, which can lead to a distorted interpretation of the nurse's situation and the supervisor's attitudes. Given this limitation, future research should include longitudinal studies to determine changes over time. Second, the data analyzed in this study reflected retrospective measures of perceived supervisors' attitudes and depressive symptoms; therefore, the possibility of recall bias cannot be ruled out. Third, the WHO-5 used to measure nurses' depression in this study has been widely used in the mental health field and has shown clinical validity and good sensitivity, which may have increased the validity of this study's results. However, making use of the WHO-5 may also be a limitation, as it focuses on self-reporting rather than directly diagnosing clinical depression. Finally, due to the limitations of the secondary analyses conducted in this study, variables that were not collected but may have influenced the participants' depressive symptoms, such as psychiatric family history, stressful events, and marital status, were not included. Therefore, future studies should include these factors to allow for a clearer interpretation of the results.

Conclusion

Nurses who perceived their direct supervisors' attitudes as negative were significantly more likely

to experience depressive symptom. To alleviate depressive symptoms among nurses, organizational efforts are needed that focus on early identification of depression, training for supervisors, and the establishment of supportive psychological interventions in healthcare settings.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

Acknowledgements

No financial source was received for this study.

Conflict of interest

The authors declare that there is no conflict of interests.

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