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Original Research

The Influence of Promotion and Prevention Models in Preventing Psychosocial Problems in Nurses at Medan City Hospital

Sri Eka Wahyuni[1*], Wardiyah Daulay[1], Mahnum Lailan Nasution[1], Jenny Marlindawani Purba[1]

[1] Department of Mental Health and Community Nursing, Faculty of Nursing, Universitas Sumatera Utara, Indonesia

ABSTRACT

Background: *Psychosocial problems experienced by nurses when working in hospitals. Promotion Model Mental Health Promotion and Prevention is a solution that can be offered to prevent psychosocial problems in nurses. The aim of this study is to identify the influence of the promotion and prevention model on the prevention of psychosocial problems among nurses at Medan City Hospital.*

Methods: *Quasi-experimental research design with a control group. The study was conducted on nurses at one of the hospitals in Medan City with a sample of 100 nurses, with details of 50 nurses in the intervention group and 50 nurses in the control group taken using purposive sampling. The research instrument used GAD-7. The intervention provided was a mental health promotion and prevention model (stress management training and self-help group therapy). Data were analyzed using the Wilcoxon Signed-Rank Test to assess within-group differences and the Mann–Whitney U Test to compare post-intervention anxiety levels between the intervention and control groups.*

Results: *The study showed that there was a statistically significant difference in the level of anxiety of nurses after the intervention. There was a significant reduction in anxiety levels among nurses following the implementation of the mental health promotion and prevention model in the intervention group (p = 0.001).*

Conclusion: *It was concluded that the intervention was significantly effective in reducing the anxiety levels of nurses at Medan City Hospital. This mental health promotion and prevention model can be implemented to prevent psychosocial problems early in healthcare workers.*

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CONTACT
Sri Eka Wahyuni
✉
jamaleka@usu.ac.id
Department of Mental Health and Community Nursing, Faculty of Nursing, Universitas Sumatera Utara
Jl. Prof. T. Maas No. 3, Padang Bulan Campus, Medan Baru, Medan 20155, North Sumatra, Indonesia.

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INTRODUCTION

Psychosocial issues in the workplace are one of the most important issues facing nurses today. Psychosocial issues are inextricably linked to the work environment nurses face on a daily basis. Various workplace factors, such as working hours, contribute to this. long, heavy work, heavy, timetable shift work, exposure to happen continuously, dealing with client suffering due to illness, nurses' involvement with others in the work environment triggers psychosocial problems that will affect the nurse's well-being (Wells, 2024). Nurses will continue to face stressors while on duty, and risk causing problems psychosocially if the nurse is unable to cope effectively.

Psychosocial problems such as anxiety and depression are common among nurses. Critical care nurses are at higher risk of depression and anxiety than the general population. Research shows that one-third of nurses experienced anxiety and depression during the pandemic. Other research also shows that nurses who work during the pandemic experience depression, anxiety, and post-traumatic stress disorder. 18% of nurses die by suicide, experience workplace violence, discrimination, verbal and physical abuse, and sexual harassment while on duty (Wells, 2024). Various psychosocial problems can occur in nurses and need to be prevented.

Psychosocial problems have a negative impact on the quality of nursing care provided. on the client and family. Anxiety impacts productivity, job satisfaction, increased turnover, increased risk of medical treatment, poor decision-making, drug use, depression, and even suicide risk (Restauri & Sheridan, 2020; Wahyuni et al., 2024). Anxiety affects the quality of life of nurses, can lower immunity, increase risk of infection, and worsen the mental health of nurses (Niman et al., 2021; Wahyuni et al., 2024). Anxiety and depression also impact per capita income and the global economy (ICN, 2022). Psychosocial problems need to be prevented to prevent significant losses in various aspects of life.

Mental health promotion and prevention models are important to prevent psychosocial problems. Research shows that group interventions, including psychological support, cognitive therapy, behavioral therapy, and music, can reduce psychosocial problems (Zhang, Luo, et al., 2022). Research results show that promotional strategies can reduce anxiety, stress, and depression during the pandemic. COVID-19. Strategy promotion covering Rest between work shifts, consuming a healthy diet, adequate fluid intake, physical activity, relaxation activities, recreational activities (reading, listening to music, watching movies), maintaining social contact, expressing and revealing feelings and emotions, and refusing information from incorrect sources (de Pinho et al., 2021).

Promotional and preventive strategies can be carried out and taught to nurses to reduce the psychosocial problems experienced. Promotional and preventive mental health actions that can be carried out are by practicing mindfulness, cognitive behavior therapy, physical activity, and stress management (Saijonkari et al., 2023). Other research shows that promotional and preventive measures that can be taken include stress management, mindfulness, cognitive behavior therapy, and therapy group self-help (Wahyuni et al., 2024). Results: The research above shows that various interventions can be carried out to prevent the occurrence of psychosocial problems.

Psychosocial issues experienced by Indonesian nurses following the COVID-19 pandemic include anxiety and depression. Research shows that nurses experience anxiety. light until currently as much as 31.6%, 32.1% experience depression, light to moderate, and 9.1% had difficulty sleeping (Rokhman et al., 2024). The results of other

studies also show that nurses caring for COVID-19 clients at Medan City Hospital experienced minimal anxiety of 82.4%, mild anxiety of 15.2%, and moderate anxiety of 2.5%. Although the COVID-19 pandemic has passed for 3 years (Wahyuni et al., 2024). This means that psychosocial problems occur among nurses even though cases of infections such as COVID-19 have subsided.

Psychosocial issues negatively impact nurses' health and nursing services. Psychosocial issues such as anxiety can reduce immunity, increase the risk of infection, and worsen mental health conditions (Niman et al., 2021). Anxiety can reduce productivity, decrease job satisfaction, increase turnover, increase the risk of medical treatment, poor decision making, drug use, depression, and even suicide risk (Restauri & Sheridan, 2020). Based on this statement, there needs to be promotive and preventive efforts to prevent psychosocial problems in nurses.

Promotional and preventive efforts have not been implemented in the nursing work environment. Interviews with two nurses working at Medan City Hospital revealed that nurses deal with psychosocial issues themselves, such as anxiety when caring for critical and terminally ill clients, stress when caring for clients with infections such as HIV/AIDS and pulmonary tuberculosis. Hepatitis. Both nurses stated that they did not yet have the skills to address and prevent psychosocial problems. Based on the phenomenon of analyzing the effectiveness model promotion and preventive health soul in preventing the occurrence of psychosocial problems in nurses in Medan City Hospital. This study aims to identify the influence of promotional and preventive models on nurses' anxiety at Medan City Hospital.

MATERIALS AND METHOD

Research Design

The research design used was a quasi-experimental design with a control group because the researchers were unable to randomize subjects in a hospital setting, but still wanted to evaluate the effectiveness of the intervention by comparing the outcomes between the intervention group and the control group. This research design was conducted to identify the influence of promotional and preventive models on nurses' anxiety at Medan City Hospital. This research design was conducted to identify the influence of promotional and preventive models on nurses' anxiety at Medan City Hospital.

Population and Sample Research

The population in this study consists of all nurses working at a hospital in Medan. The sample size in the study used a sample size estimation formula to test the hypothesis of the difference between the means of 2 independent groups (Polit & Beck, 2018). Calculations using the formula obtained a sample size of 45 people plus 5 people to estimate the dropout proportion, resulting in a sample size of 50 people per group. The study was conducted on nurses at a hospital in Medan City with a sample of 100 nurses, with details of 50 nurses in the intervention group and 50 nurses in the control group, taken using purposive sampling (Dahlan, 2020). The inclusion criteria were nurses who had a minimum education of a Diploma in Nursing. The exclusion criteria were nurses on leave and those with an education below a diploma in nursing. In this study, the dependent variable is anxiety, while the independent variable is the promotion and preventive model.

Instruments

The research instrument used the Generalized Anxiety Disorder-7 (GAD-7), which was measured pre- and post-intervention in both groups. The GAD-7 instrument demonstrated good reliability with a Cronbach's α value of 0.869, indicating high internal consistency. Validity test results using Receiver Operating Characteristic (ROC) analysis showed an Area Under the Curve (AUC) value of 0.829 (95% CI: 0.774–0.876), indicating good discriminatory ability in identifying GAD. The optimal cutoff score for the GAD-7 is ≥4, with a sensitivity of 66.0% and a specificity of 89.2% (Liu et al., 2023).

The GAD-7 is one of the most widely used screening tools for identifying Generalized Anxiety Disorder (GAD). The GAD-7 consists of seven questions designed to assess the frequency of anxiety symptoms experienced by an individual over the past two weeks. The strength of this instrument lies in its focus on psychological symptoms of anxiety without including somatic symptoms, making it more specific in detecting anxiety disorders. The GAD-7 is a practical, easy-to-use instrument with good ability to detect anxiety symptoms in clinical populations (Liu et al., 2023).

Procedure

The intervention group received a mental health promotion and prevention model. This model aims to prevent psychosocial problems through individual and group therapy. The intervention provided in this study was a mental health promotion and prevention model (stress management training and self-help group therapy). The individual therapy included deep breathing relaxation, progressive muscle relaxation, and five-finger hypnosis (stress management training). The group therapy included self-help groups. Meanwhile, the control group did not receive any intervention. The intervention group was trained in deep breathing relaxation techniques, progressive muscle relaxation, and five-finger hypnosis. SHG was conducted as a group to share problems experienced and how to overcome psychosocial issues. The intervention lasted for one month. The control group was given leaflets after the intervention in the intervention group was completed.

Data Analysis

Data analysis was conducted using the Wilcoxon Signed-Rank test to assess differences in anxiety levels before and after the intervention within each group. Subsequently, the Mann–Whitney U test was used to compare anxiety levels after the intervention between the intervention group and the control group. All statistical analyses were conducted to evaluate the effectiveness of the intervention in reducing respondents' anxiety levels.

Ethical Clearance

This study was conducted after obtaining ethical approval from the Research Ethics Committee of the University of North Sumatra under number 788/KEPK/USU/2025. The ethical principles upheld in this study include respect for human dignity and informed consent, confidentiality, fairness, and consideration for the well-being of the respondents. Before data collection began, all respondents were provided with an explanation of the study's objectives, procedures, benefits, and potential risks, and were given the opportunity to ask questions. Participation was

voluntary, and respondents had the right to refuse or withdraw from the study at any time without any consequences.

RESULTS

Demographic Characteristics of Nurses at Medan City Hospital

The study involved 100 nurses, comprising 50 nurses in the intervention group and 50 nurses in the control group. Participants' demographic characteristics included working units, age, gender, educational attainment, position, years of service, marital status, ethnicity, employment status, history of chronic illness, and previous training experience. The distribution of these characteristics is presented in Table 1.

Table 1. Characteristics of Respondents in Intervention and Control Groups (n = 100)

Characteristics	Intervention		Control	
	(n)	(%)	(n)	(%)
Room				
Inpatient	3	6	21	42
Polyclinic	42	84	3	6
Isolation Room	5	10	0	0
CVCU	0	0	1	2
ICU	0	0	8	16
Emergency Room	0	0	1	2
Endoscopy Room	0	0	1	2
Chemotherapy Room	0	0	6	12
OK Room	0	0	1	2
SCU	0	0	7	14
Stroke Corner	0	0	1	2
Age				
Early Adulthood (18–40 years)	41	82	40	80
Pre-Elderly (>40 years) *	9	18	10	20
Gender				
Man	43	86	11	22
Woman	7	14	39	78
Education				
Diploma	11	22	25	50
Bachelor	37	74	25	50
Master	2	4	0	0
Position				
Implementing Nurse	40	80	45	90
Team Leader	3	14	3	6
Head of Room	7	6	2	4
Length of Work				

Characteristics	Intervention		Control	
	(n)	(%)	(n)	(%)
< 1 year	4	8	2	4
1–10 years	21	50	29	58
>10 years	25	42	19	38
Length of Time Working in Current Room				
< 1 year	10	20	10	20
1–10 years	35	70	37	74
>10 years	5	10	3	6

From the table, it can be seen that the intervention group was dominated by nurses from Inpatient (42%) and Polyclinic (6%), while the control group was dominated by nurses from Polyclinic (84%) and Inpatient (6%). The majority of nurses in both groups were in the Early Adult category (18-40 years old), with a very high percentage in the control group (80%) and the intervention group (82%). For gender, female nurses dominated both groups, namely 78% in the intervention group and 86% in the control group.

The intervention group was dominated by nurses with a bachelor's degree (50%), followed by those with a diploma (42%), and the control group was also dominated by bachelor's degrees (74%), followed by those with a diploma (22%). Most nurses in both groups were practicing nurses (90% in the intervention group and 80% in the control group). Regarding length of service, the majority of nurses in both groups had worked between 1-10 years (58% in the intervention group and 50% in the control group). Meanwhile, regarding length of service in the current room, data showed that nurses who had worked for 1-10 years in the current room dominated both groups (74% in the intervention group and 70% in the control group).

Data on marital status showed that the majority of nurses in both groups were married (68% in the intervention group and 74% in the control group). Javanese nurses were the most numerous in both groups (32% in the intervention group and 42% in the control group), followed by Batak Mandailing nurses (40% in the intervention group and 26% in the control group). Regarding employment status, BLUD Contract Employees were the most common employment status in both groups (40% in the intervention group and 38% in the control group), followed by BLUD Employees (30% in the intervention group and 15% in the control group).

The majority of nurses reported no chronic illnesses (90% in the intervention group and 84% in the control group). Furthermore, more nurses had received training in both groups, at 58% in the intervention group and 66% in the control group. Based on these narratives, both groups of nurses had similar demographic profiles in terms of age, gender, job title, length of service, marital status, and chronic illnesses. However, there were striking differences in the distribution of nurses by ward and employment status.

Nurse Anxiety in Medan City Hospital

Table 2 presents the distribution of nurses' anxiety levels at Medan City Hospital, comparing the Intervention group (n=50) and the Control group (n=50), which can be seen in Table 2.

Table 2. Nurses' Anxiety at Medan City Hospital in the Intervention Group and Control Group (n = 100)

Nurse Anxiety	Intervention Group		Control Group	
	(n)	(%)	(n)	(%)
Minimum	38	76	45	90
Mild Anxiety	12	24	5	10

The majority of nurses in the intervention group (n=50) showed minimal symptoms (no anxiety), with 38 nurses, or 76%, falling into this category. The remaining 12 nurses, or 24%, experienced mild anxiety. The control group showed a slightly higher percentage of minimal symptoms (90%) compared to the intervention group. The percentage of nurses experiencing mild anxiety was smaller in the control group (10%) compared to the intervention group.

Analysis of the Influence of Mental Health Promotion and Prevention Models in Preventing the Occurrence of Psychosocial Problems (Anxiety) Among Nurses at the Medan City Hospital

The results of the comparative analysis to determine the effect of intervention on nurses' anxiety levels are presented through the Wilcoxon test. Signed Ranks Test. This test compares anxiety scores before and after intervention, as shown in Table 3.

Table 3. Nurses' Anxiety Before and After Implementation Mental Health Promotion and Prevention Model in Intervention Groups (n = 100)

Anxiety	Mean Rank	Negative Rank	Positive Rank	Z	p -value
Before	7.50	14	0	-3,322	0.001
After					

Wilcoxon signed-rank test analysis, it can be concluded that there is a statistically significant difference in the level of anxiety of nurses after the intervention. Referring to the results of the ranks, which show that all changes in scores are a decrease (Negative Ranks = 14 and Positive Ranks = 0), it was concluded that the intervention was significantly effective in reducing the level of anxiety of nurses at Medan City Hospital.

In the next stage, the researcher conducted a Mann-Whitney test to compare anxiety scores in the intervention group and the control group, as can be seen in Table 4. The Mann-Whitney test can be concluded that there is no statistically significant difference in the median anxiety score between the intervention group and the control group (Z = -1.365, p = 0.172).

Table 4. Nurse Anxiety After Implementation Mental Health Promotion and Prevention Model in Intervention Group and Control Group (n = 100)

Anxiety	n	Mean Rank	Sum of Ranks	Z	p -value
Intervention	50	54.19	2709.50	-1,365	0.172
Control	50	46.81	2340.50		

DISCUSSION

The test showed a statistically significant decrease in nurses' anxiety levels after the intervention. Ranking data showed that 14 respondents experienced a decrease in

anxiety scores, and no respondents experienced an increase. These findings strongly support the effectiveness of the developed intervention model. Mental health promotion and preventive interventions are recognized as effective strategies in improving mental well-being and reducing psychosocial symptoms, including anxiety (World Health Organization, 2023).

The results of the study indicate that the implementation of a mental health promotion and prevention model has a significant impact on reducing anxiety levels in nurses. will be beneficial with the Health Promotion Model theory (Pender, 2011), which explains that individuals who have the understanding and skills to maintain mental well-being will be better able to engage in adaptive behavior in the face of environmental stressors. In the hospital context, nurses who participate in mental health promotion activities tend to be more aware of their emotional state and have skills in regulating emotions. Meanwhile, preventive activities allow early detection of anxiety symptoms and provide space for rapid intervention, for example, through counseling or psychological guidance (Dos Santos et al., 2025).

Research by Pinho et al. (2021) supports this, finding that implementing a mental health promotion program in hospitals significantly reduced nurses' anxiety and emotional exhaustion. Similar findings were also reported by Putri & Wibowo (2024), who found that mindfulness-based interventions and coping training effectively increased the psychological resilience of healthcare workers during the pandemic. These findings suggest that interventions focused on mental health and strengthening coping skills are key strategies for maintaining nurses' psychological well-being, particularly when facing high work stress and health crises.

Promotive interventions, such as education, and preventive interventions, such as stress management training, help nurses develop self- care skills and psychological resilience, which are essential for coping with occupational stressors (Cohen et al., 2023; Yang et al., 2024). The success of these interventions underscores the crucial role of a promotive-preventive approach in mental health services within the nursing workplace, in line with the transformation of mental health services that now place greater emphasis on promotive and preventive actions.

Nurses are healthcare workers who play a crucial role in maintaining the quality of hospital services. However, nurses are also a highly vulnerable group to psychosocial problems, particularly anxiety, due to high work demands, emotional stress, and exposure to critical situations in the workplace. Therefore, implementing a mental health promotion and prevention model is crucial to maintaining mental balance and preventing psychological disorders (Zhang, Luo, et al., 2022).

The mental health promotion and prevention model is a systematic approach aimed at improving mental well-being and preventing psychological disorders such as anxiety, stress, and depression. Mental health promotion focuses on improving the ability of individuals and the workplace to maintain mental health. Activities include mental health education, stress management training, mindfulness, effective communication, and building social support among coworkers (Riu & Pandin, 2023).

Prevention focuses on recognizing early signs of psychological disorders and early intervention before problems become more serious. Implementation of this model at Medan City Hospital can be done through activities such as coping training. Stress management for nurses, regular relaxation programs, and internal psychological counseling. This approach not only reduces anxiety levels but also increases nurse productivity and job satisfaction. These findings reinforce the importance of social and

psychological components in mental health promotion models. Promotion efforts should not only focus on individual aspects (e.g., coping training), but also on creating a supportive and collaborative work environment so that nurses feel supported by colleagues and hospital management.

Results: The study showed that there was a statistically significant difference in the level of anxiety of nurses after the intervention. It was concluded that the intervention was significantly effective in reducing the anxiety levels of nurses at Medan City Hospital. This mental health promotion and prevention model can be implemented to prevent psychosocial problems early in health workers. The limitations of this study are that the sample size was small, and the post-test was conducted immediately after the intervention was completed.

CONCLUSION

The mental health promotion and prevention model significantly reduced nurses' anxiety levels at Medan City Hospital after a one-month intervention. Statistical analysis showed a meaningful reduction in anxiety scores within the intervention group ($p = 0.001$), proving that stress management training and self-help groups work effectively. Hospital managements can implement this promotive-preventive approach early to protect healthcare workers' psychological well-being. However, researchers noted a small sample size of 100 nurses and immediate post-test data collection as the main limitations of this study.

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