

Psychological Intervention on Reducing Stress of Nurses Caring for Terminally Ill Cancer Patients: A Quasi-Experimental Study

ABSTRACT

Objective: The aim of the study was to explore the effect and feasibility of psychological intervention on reducing stress in nurses caring for terminally ill patients in the Department of Oncology.

Methods: This quasi-experimental study enrolled oncology nurses at Sir Run Run Shaw Hospital, affiliated to Zhejiang University School of Medicine, between April 2021 and February 2022. Interventions included Soul Moisturizing Hall, Balint group, one-on-one interviews, and routine debriefing sessions. Psychological interventions for the nurses were carried out by a team of psychiatrists and senior clinical nurse specialists. The Work Stressors Questionnaire of Nurses in the Department of Oncology (WSQNDQ) was used to measure the stress in nurses before and after intervention.

Results: A total of 27 female nurses were enrolled, with the majority of them aged <30 years. Following intervention, the scores in each of the WSQNDQ dimensions were all significantly lower ($P < .001$) than prior to intervention (social factors and career prospect: 15.18 ± 3.67 vs. 11.11 ± 2.42 ; working environment and working nature: 20.22 ± 5.03 vs. 17.29 ± 4.87 ; professional skills: 19.11 ± 3.93 vs. 16.51 ± 3.27 ; stress from the patient and their family: 11.85 ± 3.07 vs. 10.37 ± 2.45 ; interpersonal relationship: 9.77 ± 2.54 vs. 8.62 ± 1.62 ; the problem of oncology specialist nursing: 41.03 ± 8.46 vs. 38.51 ± 6.30). Moreover, the nurses reported alleviation of negative emotions after the psychological intervention.

Conclusion: Psychological interventions can reduce the stress experienced by nurses while caring for terminally ill cancer patients.

Keywords: Psychological intervention, nurse, stress, dying patient, oncology

Introduction

The Department of Oncology is a specialist department that admits patients with early curable cancer, advanced incurable cancer, and end-of-life patients. Physical and psychological suffering and distress are commonplace in this department, thereby imposing significant stress and pressure on the health-care workers.¹⁻⁴ Nurses who work in the Department of Oncology experience greater mental stress than those working in other departments⁵ and are more prone to psychological distress.^{6,7}

The high emotional demand and negative feelings arise due to being continuously confronted with suffering patients, and from the false perception, they may be able to alleviate people's suffering, but without success.⁸ This eventually exceeds the self-management capabilities of nurses, leading to anxiety, distress, depression, burnout, and compassion fatigue, all of which are interrelated pathologies.⁹ Furthermore, observing the patient's inexorable progress toward death and the death itself will trigger strong emotional experiences in nurses.¹⁰

Various interventions have been designed and shown some efficacy. These include interventions involving psychiatric and professional counseling, holistic self-care activities,



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training in positive coping skills, physical exercise, meditation, self-reflection, rest, games, relaxation techniques, Balint group activities, and mindfulness training, all of which were shown to be protective in nurses.¹¹⁻¹³ However, these intervention programs have various impacts on time, required staff, costs, and availability. Importantly, a single type of intervention may not be sufficiently comprehensive to reach all nurses, and therefore programs that are based on multiple types of intervention are needed. This study aims to find ways to reduce stress in nurses who care for terminally ill patients.

Material and Methods

Study Design and Participants

This quasi-experimental study enrolled nurses from the Department of Oncology at the Sir Run Run Shaw Hospital affiliated to Zhejiang University School of Medicine between April 2021 and February 2022. The inclusion criteria were 1) being on-the-job nurses with a nurse certificate, 2) having worked in the Department of Oncology for >6 months, and 3) having nursed terminally ill cancer patients in the 12 months prior to the study. Probation and intern nurses were excluded.

Participation was voluntary, and nurses were assured they could withdraw from the study without any consequences to their job security. This study was approved by the Ethics Committee of Sir Run Run Shaw Hospital Affiliated to Zhejiang University School of Medicine (Number: 2022-634-01). Written informed consent was obtained from all eligible nurses who agreed to participate.

The procedure for this study is to enroll nurses, conduct scale assessment before intervention, give the intervention measures, and conduct scale assessment after intervention.

Intervention

Interventions included Soul Moisturizing Hall, Balint group, one-on-one interviews, and routine debriefing sessions. At "Soul Moisturizing Hall," nurses and psychological professionals meet face-to-face to ensure good communication. The concept of the Balint group was proposed by Michael Balint, a famous Hungarian psychoanalyst. This integrates elements of psychoanalysis and group therapy and combines the concepts of narrative medicine, emotional support, and self-reflection to explore how the doctor-patient relationship may be used as a therapeutic tool. One-on-one interviews and routine

debriefing sessions can also channel nurses' emotions to effectively relieve their stress.

Activity of "Soul Moisturizing Hall"

The psychological intervention activity of the "Soul Moisturizing Hall" was led by senior and junior doctors from the Department of Mental Health. Psychiatrists had a psychotherapist certificate from the Ministry of Health. Activity with the same content was carried out for 60 minutes each session, twice per month and for 10 months. Each nurse takes extra time to attend 1 session per month, according to their availability and schedules. The content of the activity session consisted of 2 parts. In the first part, nurses explained the problems and confusion they encountered when caring for terminally ill patients, and doctors would offer professional guidance and answers for 30 minutes. The second part of the session was a 30-minute lecture led by psychiatrists. The lecture topics included empathy, death education, stress relief, palliative care for terminal cancer patients, and humanistic clinical care.

Balint Group

The concept used in the Balint group was proposed by Michael Balint, a famous Hungarian psychoanalyst. It integrates elements of psychoanalysis and group therapy and combines the concepts of narrative medicine, emotional support, and self-reflection to explore how the doctor-patient relationship may be used as a therapeutic tool.^{14,15} When a case was encountered that triggered a strong emotional response from the nurses, the head nurse would invite the clinical senior nurses to organize a Balint group meeting. The duration was 60 minutes, and the case-related personnel would participate. The clinical senior specialist nurse in the Department of Mental Health was qualified as a National Psychotherapist II. Clinical cases that made nursing staff feel troubled, helpless, frustrated, angry, etc. were discussed in the Balint group to improve communication and empathy skills, relieve occupational stress, increase occupational achievement, and promote the professional growth of nurses.¹⁶

One-on-One Interview

When they feel the need, nurses can contact a mental health doctor or a senior clinical nurse in the mental health department for a one-on-one interview. These interviews provide a private space to help nurses speak freely, express their emotions, and relieve stress.

Routine Debriefing Sessions

These sessions are a widely recognized technique for reflection and for alleviating negative emotions following a patient's death or other distressing work-related event.¹⁷ Following the patient's death, the head nurse encourages the supervising nurse to share for 10-15 minutes during the morning meeting, including the expression of emotions such as fear, frustration, and sadness. The intervention flow is shown in Figure 1.

Data Collection

Symptom Check List-90: Symptom Check List-90 (SCL-90), also known as the self-reporting inventory, was proposed by Derogatis et al in the 1970s.¹⁸ It is the most widely used outpatient examination scale for mental disorders and mental diseases. Symptom self-assessment scale SCL-90 has a total of 90 items, including a wide range of psychiatric symptomatology content ranging from feelings, emotions, thinking, consciousness, behavior to life habits,

MAIN POINTS

- Nurses are prone to negative emotions when they have prolonged contact with terminally ill cancer patients. This can affect their physical and mental health.
- The psychological intervention activity of "Soul Moisturizing Hall" has been proven effective.
- Balint groups create a relatively safe space for clinical nurses and can relieve stress.
- Individual interviews can protect the privacy of nurses and allow them to exchange their inner thoughts in depth, thus relieving the pressure on them.
- Debriefing sessions allow nurses to talk about their feelings and vent their emotions, thus reducing stress. These interventions were carried out together.

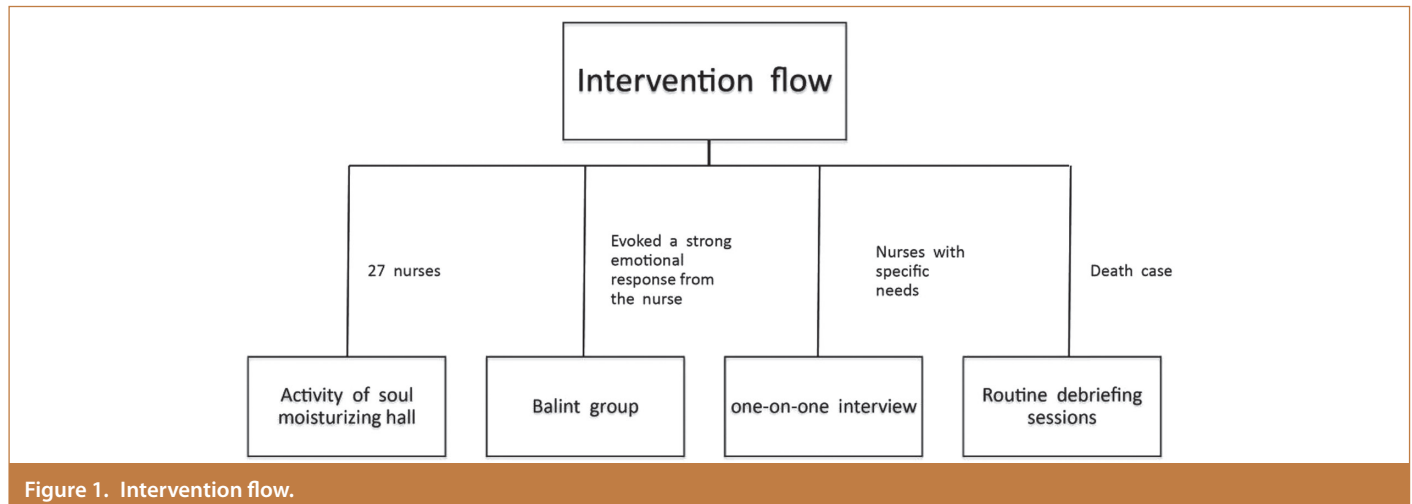


Figure 1. Intervention flow.

interpersonal relations, diet, sleep, etc. Each item in the SCL-90 is scored on a 5-point scale from 1 to 5 (1 = no symptoms, 2 = mild symptoms, 3 = moderate symptoms, 4 = relatively severe symptoms, and 5 = severe symptoms). The dimensions of somatization, obsessive-compulsive disorder, depression, anxiety, hostility, phobic anxiety, and paranoid ideation are measured, and the validity coefficients of each item range from 0.77 to 0.90. To collect these data, assessments were performed 7 days before the intervention.

Work Stressors Questionnaire of Nurses in Department of Oncology: The Work Stressors Questionnaire of Nurses in Department of Oncology (WSQNDO) was proposed by Li et al¹⁹ and consists of 46 items. The reliability coefficient of the total scale is 0.98, and Cronbach's α coefficient for each item is between 0.83 and 0.95. The scale is divided into 6 subitems, comprising 1) social factors and career prospects, 2) working environment and working nature, 3) professional skills, 4) stress from patients and their families, 5) interpersonal relationships, and 6) problems of oncology specialist nursing. A 4-point scale was used, with a higher score indicating a higher level of stress. These assessments were performed 7 days before the intervention and at the end of the intervention.

Outcomes

The primary outcome for this study was the WSQNDO score, determined before and after the intervention. Secondary outcomes were the feelings self-reported by the participants after the intervention.

Statistical Analysis

Data analysis was performed using the Statistical Package for the Social Sciences Statistics software, version 27.0 (IBM SPSS Corp.; Armonk, NY, USA). Continuous data were presented as the mean \pm SD when conforming to a normal distribution and as the median and quartiles when the distribution was skewed. Continuous variables were tested with normality tests. Categorical variables were presented as n (%). The Student's *t*-test for independent samples was used to compare the SCL-90 total mean score and the score for each dimension between nurses and normal Chinese adults.²⁰ The paired samples *t*-test was used to compare the WSQNDO scores before and after the intervention. The significance level was established as $P < .05$.

Results

A total of 27 female nurses were enrolled in this study. The sociodemographic and professional characteristics of the participants are shown in Table 1.

The SCL-90 was used to evaluate the nurses' mental health status before intervention. Their total mean score (1.33 ± 0.46) was not significantly different from that of the general population (1.44 ± 0.43 ; $P = .278$). For each dimension, no significant differences were found in the scores for obsessive-compulsive disorder, anxiety, hostility, phobic anxiety, psychoticism, and somatization between nurses and the general population (all $P > .05$). However, scores for depression ($P = .027$), interpersonal relationships ($P = .007$), and paranoid ideation ($P = .006$) were significantly lower in nurses (Table 2).

The stress status of nurses before and after intervention was assessed using the WSQNDO. As shown in Table 3, the scores in each dimension of the questionnaire were all significantly lower ($P < .001$) after the intervention than before (Table 3).

Table 1. Sociodemographic and Professional Characteristics of the Participants

	n (%)
Marital status	
Married	13 (48.15)
Unmarried	14 (51.85)
Education	
Undergraduate degree	26 (96.29)
Master's degree and above	1 (3.71)
Age	
≤ 30 years	20 (74.07)
31-35 years	6 (22.22)
≥ 36 years	1 (3.71)
Work experience in department of oncology	
< 2 years	23 (85.18)
≥ 2 years	4 (14.82)
Technical titles	
Primary	21 (96.29)
Intermediate	6 (3.71)

Table 2. Symptom Check List-90 Scores Before Intervention

Dimensions	Nurses (n=27)	Controls (n=1388)	P
Obsessive-compulsive disorder	1.55 ± 0.56	1.62 ± 0.61	.303
Interpersonal relationship	1.23 ± 0.45	1.65 ± 0.67	.007
Depression	1.39 ± 0.45	1.50 ± 0.61	.027
Anxiety	1.38 ± 0.43	1.39 ± 0.43	.465
Hostility	1.45 ± 0.61	1.48 ± 0.57	.277
Phobic anxiety	1.17 ± 0.42	1.23 ± 0.47	.242
Paranoid ideation	1.23 ± 0.40	1.43 ± 0.60	.006
Psychoticism	1.23 ± 0.39	1.29 ± 0.47	.117
Somatization	1.36 ± 0.46	1.37 ± 0.45	.402
Total score	1.33 ± 0.46	1.44 ± 0.43	.278

All nurses completed the psychological intervention activities. The “Soul Moisturizing Hall” activity was completed 10 times by each nurse. Five Balint groups were organized, and 18 nurses participated in these sessions. Twelve participated twice or more, and 6 participated only once. The nurses self-reported that these interventions changed their perception of stress, that they were able to face difficulties and solve problems with a more positive attitude, and that this was beneficial for relieving stress and promoting physical and mental health.

One nurse had a one-on-one interview with a psychiatrist, and another with a senior clinical nurse. In addition, 5 nurses reported routinely at the morning meeting, with 1 reporting at least twice and the others just once. According to the self-reports of nurses, negative emotions were relieved and psychological stress was consciously reduced following the one-on-one interviews or the routine reporting.

Discussion

Treatment techniques for malignant tumors have progressed rapidly in recent years, with nurses at the forefront of cancer health care, especially for terminally ill cancer patients.²¹ Many of these patients have a long disease course and experience severe reactions to radiotherapy and chemotherapy. Along with the progression of the disease, terminally ill cancer patients can often experience stress, depression, anxiety, and fear. Some patients do not cooperate, or may refuse treatment, and occasionally show suicidal ideations. Terminally ill patients, in particular, often experience physical, psychological, spiritual, and emotional pain.²² Nurses who have prolonged contact with such patients are prone to negative emotions, which can affect their own physical and mental health.^{6,7} Before intervention, nurses in the present study were evaluated using SCL-90. This revealed that scores by the nurses were similar to, or lower, than those of the general population, indicating the nurses had no obvious mental health issues.

The results of this study suggest the activities of “Soul Moisturizing Hall,” Balint group, one-on-one interviews, and routine debriefing sessions can effectively reduce stress in nurses who care for terminally ill cancer patients. These findings provide a theoretical basis for the clinical application of these psychological interventions to reduce stress in nurses.

The psychological intervention activity practiced in “Soul Moisturizing Hall” is based on traditional Chinese medicine concepts and allows a

Table 3. Oncology Nurse Scores for the Work Stressors Questionnaire

Dimensions of Stressors	Before Intervention (n=27)	After Intervention (n=27)	P
Social factors and career prospect	15.18 ± 3.67	11.11 ± 2.42	<.001
Working environment and working nature	20.22 ± 5.03	17.29 ± 4.87	<.001
Professional skills	19.11 ± 3.93	16.51 ± 3.27	<.001
Stress from the patient and their family	11.85 ± 3.07	10.37 ± 2.45	<.001
Interpersonal relationship	9.77 ± 2.54	8.62 ± 1.62	<.001
Problem of oncology specialist nursing	41.03 ± 8.46	38.51 ± 6.30	<.001

dynamic conversation to be held between nurses who experience psychologically stressful events and the physicians. Moreover, discussion sessions that are followed by a lecture can provide the nurses with solutions to overcome present and future events. Previous studies have also reported the effectiveness of using a similar approach. Some nurses who witness a psychologically stressful event may be reluctant to share this experience, but they can find support in a similar event experienced by another nurse.²³

A previous study on Balint groups suggested that it was effective in medical residents.¹⁶ Balint groups establish a relatively safe atmosphere for clinical nurses, which is conducive to promoting emotional connections and social support between team members.^{14,16} Social support may act as a buffer against stress, and participants in Balint groups are able to fully express anxiety, fear, anger, frustration, sadness, helplessness, and other emotions. Following this intervention, the original emotions of denial, repression, avoidance, and isolation felt by nurses can be channeled and vented.^{15,17} One-on-one interviews allow nurses to discuss issues they may feel too shy to talk about publicly or with colleagues. Debriefing sessions allow nurses to express their emotions about patient loss as well as recap important details that led up to the event. Such sessions should provide safe spaces in which all nurses can articulate their feelings.²⁴ It is recommended that managers involve oncology nurses in these interventions in order to reduce stress for nurses who care for terminally ill patients.

The results of this study support the feasibility of psychological interventions for reducing stress in nurses. The leadership showed a commitment to the nurses’ well-being, thus making the interventions feasible. Nevertheless, the study had some limitations. The primary limitation was the quasi-experimental design without a control group. Although the study design was appropriate given that its primary purpose was to assess the feasibility of psychological intervention in reducing stress in nurses, the lack of randomization limits the possible interpretation. Other limitations were the small sample size and the single study center. Clinical randomized controlled trials with a larger sample size are therefore required to confirm the conclusion.

This study found that the Soul Moisturizing Hall, Balint group, one-on-one interviews, and routine debriefing sessions can reduce the stress experienced by nurses when caring for terminally ill patients. The intervention was based on multiple methods and offers a promising option for managing mental health issues among nurses.

Availability of Data and Materials: The data supporting the conclusions of this article are available from the corresponding author upon request.

Ethics Committee Approval: This study was approved by Ethics Committee of Sir Run Run Shaw Hospital Affiliated to Zhejiang University School of Medicine (Approval No: 0357, Date: September 29, 2022).

Informed Consent: Written informed consent was obtained from the all participants who agreed to take part in the study.

Peer-review: Externally peer-reviewed.

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Declaration of Interests: The author has no conflict of interest to declare.

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