Journal of Multidisciplinary Care (JMDC)
doi: 10.34172/jmdc.1245 2023;12(4):159-165 http://jmdc.skums.ac.ir

Original Article

The effect of therapeutic communication based on Peplau's model on body image and pain among cancer patients undergoing radiotherapy in the Parsian hospital of Shahrekord

Shekoufeh Naderi Samani[1], Ali Hassanpour Dehkordi[2], Shahriar Salehi Tali[2*]

[1]Department of Nursing, Shahrekord University of Medical Sciences, Shahrekord, Iran
[2]Department of Adult and Gerontological Nursing, Shahrekord University of Medical Sciences, Shahrekord, Iran

*Corresponding Author:
Shahriar Salehi Tali,
Email: sh_salehitali@yahoo.com

Received: October 26, 2023
Accepted: January 22, 2024
ePublished: March 15, 2024

Abstract

Background and aims: Cancer has significant effects on the lives of cancer patients and their families, so effective communication skills are an integral part of the process of caring. This study aims to investigate the effect of Peplau's Therapeutic communication model on body image and pain among cancer patients.

Methods: The present research is a quasi-experimental study conducted with the attendance of 64 cancer patients undergoing radiotherapy in Shahrekord Parsian Hospital in 2020-2021. First, the research units were selected purposefully and then randomly assigned to intervention and control groups. In the intervention group, Peplau's nursing model was done in four stages individually. Data collection tools were a demographic survey questionnaire, McGill Pain Questionnaire, and Body Image Questionnaire (MBSRQ). The mean scores before, immediately after, and three months after were compared using SPPS version 24 software.

Results: Before interfering, the results of the study indicated the standard deviation ± mean of body image scores in control and intervention groups were respectively 204.81 ± 2.79, 206 (217-75.187) + that were not significantly different from each other ($P \geq 0.568$). Whereas these scores immediately and three months after had statistically significant differences from each other ($P < 0.01$). The results also indicated that the Standard deviation ± mean of pain scores in control and intervention groups were 59.56 ± 0.793 and 58.25 ± 0.627 were not significantly different ($P \geq 0.248$). However, these scores immediately and three months after had statistically significant differences from each other ($P < 0.01$).

Conclusion: The findings of this research showed that implementing Peplau's theory can improve body image and decrease pain in patients. Due to this program's effectiveness, low cost, and safety, it is recommended for consideration in the nursing care program.

Keywords: Cancer, Radiotherapy, Peplau nursing model, Body image, Pain

Introduction

Cancer is one of the leading causes of mortality globally. In Iran, cancer is currently the second leading cause of death, resulting in over 70 000 deaths each year (1). Despite medical breakthroughs and technological advances in the prevention and treatment of cancer, the prevalence of people diagnosed with cancer has been on an upward trend in all countries (2). In 2023, 1958310 new cancer cases and 609 820 cancer deaths are projected to occur in the United States (3). Biological disorders in the body of the affected person cause these deaths. In other words, cancer is clinically caused by the uncontrolled growth of several cells. It may metastasize to other parts of the body (4). There are various cancer treatments, depending on the cancer type and how advanced it is, such as surgery, radiation therapy, chemotherapy, targeted therapy, and precision medicine. Each of these methods has its complications. For example, many chemotherapy drugs cause the production of free radicals, which can justify the mechanism of the toxic effects of these substances on normal cells (5,6). Other treatments, such as radiotherapy, are widely used. In addition to surgery, radiation therapy is used to treat cancer. So, radiotherapy is an essential factor in the treatment of breast, prostate, cervical, head and neck, lung, and brain cancers, as well as sarcoma (7). Radiotherapy is a successful intervention with a therapeutic and palliative role or both, which can be performed in the shortest possible time. Moreover, it is well-tolerated and economically affordable (8).

Damages caused by radiotherapy and other cancer treatments can cause the loss of body parts, wounds, the need to do prosthesis adjustment, reduced physical activities, multiple tumors on the neck, eyes, head, and alopecia (loss of hair) (9). Each of these changes puts the

body image under threat. Therefore, cancer itself and its treatment cause negative effects on the mental image of the body, and in this sense, it threatens a person's mental health (10). In explaining body image, it should be said that it is a mental concept that includes personal perceptions, thoughts, and feelings concerning social factors (11).

Most studies that investigate body image in cancer patients and survivors are exclusively conducted with female participants and focus nearly entirely on the most common cancer entities like breast cancer. Studies with men and less frequent types of cancer are thus rare. Additionally, it is difficult to infer the actual extent to which cancer patients' body image is impaired when compared to the general population, as the number of case-control studies is also very limited (12).

Psychologically, body image disorders are directly related to low self-esteem, decreased sexual performance, poor social relationships, and depression. In addition, body image disorder in cancer patients is considered one of the most important complications of the disease, which greatly affects the return of patients to normal life. In this way, body image is affected by emotional, cognitive, behavioral, and social factors. It is known that these side effects can be reduced to a great extent by performing appropriate interventions (13).

In other instances, the issue is pain in different parts of the patient's body, which can be affected by common cancer treatment methods. Many patients face different complications during their treatments. The main cause of pain is tumor pressure on bones, nerves, or other parts of the body. When pressure is applied to the body, patients experience chronic pain (14). Cancer patients experience pain as a frequent symptom, and cancer is perceived as a more painful disease than other medical conditions. 66% of patients with advanced, metastatic, or terminal disease have pain. Besides, 38% of patients with cancer pain report moderate or severe pain.

Pain interferes with daily activities, sleep, temperament, and social interactions. Pain can cause feelings of hopelessness, worry, anxiety, and depression, especially if the pain is chronic. There is also evidence that confirms that negative moods and emotions can lead to pain or increase it (15). Pain is a perceived threat or injury to a person's biological integrity. Physiologically, chronic pain causes long-term and destructive stress associated with neuroendocrine regulation disorders, fatigue, muscle pain, and mental and physical disorders (14,15).

Considering the negative physical and psychological effects and pain of cancer patients, it is necessary to help this group of patients by using care methods so that they can tolerate the effects of the disease and treatment and control and reduce their pain. Peplau's nursing model seems to be considered one of the appropriate models in this field.

Hildegard Peplau proposed this nursing model based on the interaction and participation of nurse and patient. He stated that the interaction between the patient and the nurse has a qualitative effect on the disease results and emphasizes this process is related to the nurses (16). This model has four stages: familiarization, identification, exploitation, and conclusion. The familiarization phase starts when the patient meets the nurse for the first time. In this phase, the nurse should attract the patient's trust (17). In the identification stage, the care required for each patient is determined. Then, in the operation stage, based on the needs of the patients and considering their interests, the nurse performs the necessary professional actions and interventions to achieve the patients' independence and solve their problems. In the last stage, the performed process is evaluated to determine the usefulness of the nurse-patient relationship.

At this stage, the degree of achieving the set goals, the impact of interventions and behavioral and emotional changes, and summarizing and reviewing the communication process are made (17,18). So far, the effects of different nursing models on different psychological variables in different diseases have been investigated. Belay et al investigated the effect of the interpersonal nursing model on the quality of life of breast cancer patients with mental health disorders. They reported that this nursing model caused a significant improvement in anxiety, depression, physical performance, health-related quality of life, and fatigue in cancer patients (19). Cacayan et al have also reported the positive effects of Peplau's nursing model on reducing the anxiety level in covid-19 patients (20). Galvão et al also reported the effects of the interpersonal nursing model on alleviating cancer patients (21). All these studies indicate the positive effects of nursing interventions on psychological variables and the recovery of patients. What makes the present research necessary is that, from the time of diagnosis to the cessation of cancer treatment, patients face various psychological issues such as depression, anxiety, fear of recurrence, and lack of hope. Identifying these interventions to improve the mental health of cancer patients can highlight the benefits of providing psychological support and its consequences in nursing (22). Therefore, the concept of interpersonal relationships provides nurses with a suitable framework for understanding the difficult issues that patients experience and helps nurses understand and learn from responses related to patients' illness and health experiences. The nurse-patient relationship is unique in process and outcome, and a specialized relationship differs from most common social relationships. Peplau's interpersonal relationship theory explains this process (23). The effect of this model on cancer patients undergoing radiotherapy has been studied less despite the many psychological problems they face; therefore, the study was conducted with the aim of the nurse's role in effective communication regarding body image and pain.

Methods

The present quantitative study is a quasi-experimental intervention with two control and intervention groups.

The study's statistical population included cancer patients undergoing Radiotherapy at Parsian Shahrekord Hospital. A minimum sample size of 27 people was considered. However, considering a confidence factor of 95%, a power of 80%, and an attrition rate of 10%, the required sample size was calculated to be 32 people in each group. Therefore, a total of 64 people were studied (24). In this study, after obtaining permission from the Research deputy and the Ethics Committee of Shahrekord Medical University through receiving the ethics code number IR.SKUMS.REC.1399.275 and attendance of other competent authorities in the radiotherapy department of Parsian Hospital and considering Suitable inclusion criteria including having cancer, not suffering from mental illness, not suffering from other physical diseases, and age over 15 and exclusion criteria including The occurrence of severe physical complications caused by the disease or treatment that the patient is unable to continue to cooperate and unwillingness to continue participating in the study, and obtaining informed consent, information was collected. The data collection tool included a questionnaire to record demographic information, including (gender, age, education degree, marital status, type of residence, economic status, family history of cancer, and medical History of cancer) and body image and pain questionnaires to measure independent variables. In this research, the Body Image Questionnaire (MBSRQ) was used to measure body image. This questionnaire contains 68 questions. It is answered by the individual and is designed to evaluate the individual's attitude about the different dimensions of the body image structure. This questionnaire includes three scales: A) The body-related scale (BSRQ): all questions (except the number of questions presented in two subscales) are scored as follows: score 1 for "completely disagree," 2 for "somewhat disagree," 3 for "I have no opinion," 4 for "somewhat agree" and 5 for "completely agree." B) Body Satisfaction Scale (BASS): questions 60 to 68 (60,61,62,63,64,65,67,68) with a score of 1 for "I am completely dissatisfied," 2 for "I am somewhat dissatisfied," 3 for "I have no opinion," 4 for "I am somewhat satisfied," and 5 for "I am completely satisfied" is calculated. c) The scale related to the person's attitude about weight includes questions 20, 56, 57, 58, 59 and 66. This questionnaire is based on the Likert scale, which is scored from 1 to 5, and the analysis of this questionnaire can be used in two ways: 1) Analysis based on questionnaire components and 2) Analysis based on the score obtained. In Iran, the reliability and validity of the questionnaire was conducted by Rajabi et al on 200 women with breast cancer, and an alpha coefficient of 0.7 was obtained, which is acceptable (25). The reliability of this questionnaire in the current study was also measured by Cronbach's alpha calculation method. This value was equal to 0.86, indicating the questionnaire's acceptable reliability. The McGill Pain Questionnaire (MPQ) was used to measure the severity of pain in the present study. This questionnaire has four dimensions: sensory perception of pain in sets 1 to 10, emotional perception of pain in sets 11 to 15, perception of pain evaluation in set 16, and various pains in sets 16 to 20. The range of painless = zero, the range of mild pain = 1, the range of uncomfortable pain = 2, the range of excruciating pain = 3, the range of terrible pain = 4, and the range of agonizing pain = 5. The total score of the patient's pain is equal to that obtained from all sections in different dimensions of pain. If the respondent does not find any statements corresponding to the description of his pain, that group is given a score of zero. The total scores of that dimension are added together to obtain the score for each dimension. The sum of the scores of each question is calculated to obtain the overall score of the questionnaire. A higher score indicates a higher perception of pain in the respondent and vice versa.

The MPQ was localized by Khosravi et al It has high validity and reliability. In this way, the questionnaire was translated using the method of cross-cultural adaptation and keeping the original structure of the MPQ. A total of 84 patients were questioned, and after 24 hours, the questionnaire for 30 patients whose conditions they had kept constant was completed again. According to their report, Cronbach's alpha coefficient of the questionnaire was calculated as 0.85, and the reliability coefficient was above 0.8 in all areas (26). The reliability of this questionnaire in the present study was also measured using Cronbach's alpha method. This value was estimated as 0.85, which had acceptable reliability.

Demographic, pain, and body image questionnaires were distributed among both groups and collected at a certain period. Then, the communication program was conducted according to the protocol in the case group. In the first stage, therapeutic communication (acquaintance) was held individually with the patient and his family in the hospital and at home in person and remotely through the phone during three sessions of 20 to 30 minutes, depending on the location and needs of the patient. In the second stage (identification), during seven sessions of 30 to 40 minutes for each patient, the patients were encouraged to express their feelings, and the patients' physical-psychological problems were collected through questions and answers. In order to get a better evaluation of mental and physical problems, in cases where there was ambiguity or the need for psychological support, the help of a psychologist was taken, and the most appropriate way to help the patient was determined. In the third stage (operation), the care program was conducted according to each patient's problems, using educational pamphlets, video clips, WhatsApp, and relevant questions and answers during seven sessions of 30-40 minutes based on the needs of each patient. In the fourth (final) stage, three sessions of 20 to 30 minutes were conducted, and all the training given was evaluated, and ambiguous points were resolved. Immediately after completing the training sessions, the questionnaires were given to the subjects again, and after enough time (48 hours) to complete them, they were collected. The final data collection was

done three months after the intervention. In both test and control groups, evaluation and measurement were done using the listed questionnaire. Finally, after collecting the data of the two groups immediately after the intervention and three months after the intervention, it was analyzed using SPSS 24 software. Demographic characteristics were measured using Fisher's exact test, and body image and pain were measured using an independent t-test.

Results

Finally, 64 patients aged 32 to 67 years with an average of 47.97 ± 8.93 years. The average age of patients in the control group was 47.59 ± 8.21 years; in the intervention, it was 48.34 ± 9.70 years. The Independent t-test showed no difference in age between the two groups ($P \geq 0.740$). In addition, other demographic characteristics such as marital status ($P \geq 0.509$), education degree ($P \geq 0.580$), gender ($P \geq 0.219$), residence status ($P \geq 0.301$), Family history of cancer ($P \geq 1.00$), economic status ($P \geq 0.749$) and History of systemic disease ($P \geq 0.105$) of the two study groups were homogeneous. The statistical tests of chi-square and independent samples t-test showed no significant difference between the two groups ($P > 0.05$) (Table 1).

The results show no significant difference between the test and control groups' average body image scores before the intervention ($P \geq 0.568$). That is, the two groups were homogeneous (Table 2). However, this difference was significant in the measurement immediately after the intervention and the three-month follow-up, based on the independent t-test ($P < 0.001$).

The results show that there is no significant difference between the average pain scores of the test and control groups before the intervention ($P \geq 0.248$) meaning the two groups were homogeneous (Table 3). However, this difference was significant in the measurement immediately after the intervention and the three-month follow-up, based on the independent t-test ($P < 0.001$).

Table 1. Distribution of demographic characteristics of patients in test and control group

Variable	Description	control group No. (%)	Intervention group No. (%)	*P* value[a]
Marital status	Married	28 (5.87)	25 (78.12)	0.509
	Single	4 (12.5)	7 (21.87)	
Degree	Under Diploma	8 (25)	8 (25)	0.580
	Diploma	7 (21.87)	8 (25)	
	Associate Degree	11 (34.37)	6 (18.75)	
	Bachelor's degree	5 (15.62)	7 (21.87)	
	Master's Degree and above	1 (3.12)	3 (9.37)	
Gender	Male	18 (56.25)	22 (68.75)	0.219
	Female	14 (43.75)	10 (31.25)	
Type of residence	Urban	22 (68.75)	19 (59.37)	0.301
	Rural	10 (31.25)	13 (40.62)	
Family history of cancer	Yes	15 (46.87)	16 (50)	1.00
	No	17 (53.12)	16 (50)	
Economic status	Excellent	6 (18.75)	7 (21.87)	0.749
	Good	8 (25)	11 (34.37)	
	Average	13 (40.62)	11 (34.37)	
	Poor	5 (15.62)	3 (9.37)	
History of systemic disease	Yes	18 (56.25)	12 (37.5)	0.105
	No	14 (43.75)	20 (62.5)	

Based on Fisher's exact test.

Table 2. Mean and Standard deviation of body image score of patients in control and intervention groups during the study

Phase		Group		*P* value
		Control group	Intervention group	
		Mean ± SD	Mean ± SD	
Body image	Before intervention	204.81 ± 2.79	206.21 ± 3.71	0.568
	Immediately after the intervention	204.78 ± 2.47	267.09 ± 2.22	< 0.001
	Three months after the intervention	202.81 ± 2.70	266.25 ± 2.71	< 0.001
	Intragroup *P* value	0.292	< 0.001	< 0.001
	Changes during the study	2.00 ± 1.00	-64.53 ± 3.01	< 0.001

Based on the independent t-test.

Table 3. Mean and Standard deviation of pain score of patients in two control and intervention groups during the study

	Phase	Control group	Intervention group	*P* value[a]
		Mean ± SD	Mean ± SD	
Pain	Before intervention	59.56 ± 0.793	58.25 ± 0.627	0.248
	Immediately after the intervention	61.59 ± 1.25	42.81 ± 0.441	<0.001
	Three months after the intervention	60.50 ± 0.573	41.06 ± 0.411	<0.001
	Intragroup p-value	0.086	<0.001	<0.001
	Changes during the study	-0.937 ± 0.777	17.21 ± 0.745	<0.001

Based on the independent t-test.

Discussion

This research was conducted to investigate the effect of Peplau's Therapeutic communication model on body image and pain among cancer patients. Nursing theories are a suitable tool to improve the quality of care. Peplau's theory acts as a communication model to provide patients' problems in the role of an educator after identifying patients individually (27). One of the common psychological problems of cancer patients is the changes in body image, which was discussed in the Hosseinzadeh et al study to investigate the effect of interventions in improving self-esteem and body image in cancer patients. They reported that educational and counseling interventions can effectively promote and improve these complications (28). Interventions play a positive role in improving the image score in cancer patients. Hsu et al, in research titled The Effectiveness of Informational and Emotional Counseling on the Psychological Impact of Women with Breast Cancer Undergoing Surgery (29). A similar study by Izadi and colleagues (2013) showed the effect of group cognitive-behavioral intervention in improving body image and increasing self-confidence in women with breast cancer after mastectomy surgery (30). Acquainting and preparing nurses is one of the challenges of the clinical environment, where nurses play an important role as nurse educators (31). Ghafari et al investigated the role of communication between patients and nurses in the body image of 275 breast cancer patients in the oncology departments of two hospitals in Tabriz. The study's results showed how communication skills between patients and nurses improve body image (32). The complications of chemotherapy and treatment of cancer patients raise the need for informational and emotional counseling (33). The results of research by Pintado and Andrade in 2017 showed that the image of a person's body is a mental representation of his physical and appearance characteristics. In other words, cultural, social, individual, and biological factors affect this image and our self-confidence. Self-concept is formed through interaction with others. Therefore, negative self-image affects how these women face their self-image (34).

One of the stressful factors for cancer patients is physical changes and reduced communication and self-confidence. The study by Richard et al shows that supportive interventions and appearance changes can work effectively (35), and the study on relaxation skills and sedation by Harorani et al also shows positive results (36). Ghorbani et al concluded supportive nursing care through strengthening interpersonal relationships, increasing positive thoughts, and identifying strengths and abilities in reducing negative emotions, and the results detected that the relationship is effective, which is in line with the current study (37). It seems that nurses can use this theory by following a suitable pattern and performing different stages of Peplau communication, including familiarization, identification, exploitation, and dissolution. In a study to determine the effect of communication therapy based on Peplau's theory on the anxiety and depression of patients who volunteered for coronary artery bypass surgery, Zare et al concluded that the average anxiety scores in the test group decreased after communication therapy. A statistically significant difference was observed between the two test and control groups in terms of the average level of anxiety; the results are consistent with the present study (38). Based on the current study, the same results were obtained in Manzari and colleagues' study on anxiety and pain in burn patients before and after the implementation of Peplau's nursing theory, which shows a statistically significant difference in the test group before and after the implementation of the communication therapy program. It shows the effect of Peplau's intervention on reducing anxiety and pain in patients, which is consistent with this study (39). Nurses play a predominant role in the patient's educational process. Patient education could support cancer patients to support the patient's self-efficacy and self-care skills for chronic pain (40). Mistiaen et al showed that interpersonal communication between patient and nurse can reduce pain in patients to a great extent in research aimed at investigating the effect of patient-medical staff communication on pain (41). Kim-Soon et al reported the intervention can cause effective communication between patients and treatment staff, in research aimed at investigating the role of interpersonal communication between oncology department patients and treatment staff and its role in palliative care, which can mobilize the best skills and human abilities to deal with the complications of the disease. The results of this study indicated reducing stressful situations and maintaining the independence and dignity of the people under care can improve their resilience against the disease and relieve the complications of the disease, such as pain (42). One of the challenges of using communication tools is their ability to be used in

different stages and degrees of cancer. In research, Canivet et al reported that a training program based on general communication skills is useful for Optimal management of cancer pain and can include a number of strategies (43). However, the results of the research by Bahrami et al on the pain of cancer patients after surgery showed that nursing pain management programs, including counseling, training, and pain assessment, were not statistically significant. Therefore, they needed to be consistent with the results of the present study. In general, nursing pain management may have a clinical effect on the pain intensity of cancer patients after surgery. However, these results were not statistically significant, possibly due to the limited sample size and the program's implementation in a short period. It is recommended that the effects of such a program on pain intensity be investigated with a larger sample and over a longer period (44).

Conclusion

The results showed that using Peplau's theory, the patient's body image improved immediately and three months after, and the patient's pain decreased. Considering the effectiveness of intervention programs based on communication therapy on body image and pain intensity, this intervention should be performed for all patients referring to hospitals due to its low cost and greater effectiveness. It is also suggested that nurses and supervisors help clients learn ways to achieve the maximum level of health and maintain it and reduce side effects and physical and mental problems.

Acknowledgments

This article has the ethics code number IR.SKUMS.REC.1399.275 results from a nursing master's thesis in Medical-Surgical at Shahrekord Medical University. In this way, the research team thanks and appreciates the cooperation of the honorable vice president of Shahrekord Medical University, all the patients who sincerely cooperated despite the existing problems and special disabilities of the disease, and all the people who helped to conduct this research.

Authors' Contribution

Conceptualization: Shekoufeh Naderi Samani, Ali Hassanpour Dehkordi, Shahriar Salehi Tali.
Data curation: Shekoufeh Naderi Samani, Ali Hassanpour Dehkordi, Shahriar Salehi Tali.
Formal analysis: Shahriar Salehi Tali.
Funding acquisition: Ali Hassanpour Dehkordi.
Investigation: Shekoufeh Naderi Samani.
Methodology: Shekoufeh Naderi Samani, Ali Hassanpour Dehkordi.
Project administration: Ali Hassanpour Dehkordi.
Resources: Shekoufeh Naderi Samani, Ali Hassanpour Dehkordi, Shahriar Salehi Tali.
Software: Shekoufeh Naderi Samani.
Supervision: Shahriar Salehi Tali.
Validation: Shekoufeh Naderi Samani, Shahriar Salehi Tali.
Visualization: Shekoufeh Naderi Samani, Shahriar Salehi Tali.
Writing–original draft: Shekoufeh Naderi Samani.
Writing–review & editing: Shekoufeh Naderi Samani, Ali Hassanpour Dehkordi, Shahriar Salehi Tali.

Competing Interests

None to report.

Ethical Approval

This article presents the results of nursing master's thesis entitled the effect of Therapeutic communication based on Peplau's model on body image and pain among cancer patients undergoing Radiotherapy in the Parsian hospital of Shahrekord approved by Shahrekord University of Medical Science with ethics code number IR.SKUMS.REC.1399.275.

Funding

Shahrekord University of Medical Science, Shahrekord, Iran

References

1. Jokar M, Namavari N, Moshiri SA, Kargar Jahromi H, Rahmanian V. The incidence of oral cavity cancer in Iran: a systematic review and meta-analysis. Cancer Rep (Hoboken). 2023;6(6):e1836. doi: 10.1002/cnr2.1836.
2. Shafiee G, Mousavian AH, Sheidaei A, Ebrahimi M, Khatami F, Gohari K, et al. The 15-year national trends of genital cancer incidence among Iranian men and women; 2005-2020. BMC Public Health. 2023;23(1):495. doi: 10.1186/s12889-023-15417-0.
3. Siegel RL, Miller KD, Wagle NS, Jemal A. Cancer statistics, 2023. CA Cancer J Clin. 2023;73(1):17-48. doi: 10.3322/caac.21763.
4. Balzanelli MG, Distratis P, Lazzaro R, Pham VH, Del Prete R, Mosca A, et al. From pathogens to cancer: are cancer cells evolved mitochondrial super cells? Diagnostics (Basel). 2023;13(4):813. doi: 10.3390/diagnostics13040813.
5. Saini A, Kumar M, Bhatt S, Saini V, Malik A. Cancer causes and treatments. Int J Pharm Sci Res. 2020;11(7):3121-34.
6. Falzone L, Salomone S, Libra M. Evolution of cancer pharmacological treatments at the turn of the third millennium. Front Pharmacol. 2018;9:1300. doi: 10.3389/fphar.2018.01300.
7. Gelband H, Jha P, Sankaranarayanan R, Horton S. Disease Control Priorities, (Volume 3): Cancer. World Bank Publications; 2015.
8. Lutz ST, Jones J, Chow E. Role of radiation therapy in palliative care of the patient with cancer. J Clin Oncol. 2014;32(26):2913-9. doi: 10.1200/jco.2014.55.1143.
9. Fan SY, Eiser C. Body image of children and adolescents with cancer: a systematic review. Body Image. 2009;6(4):247-56. doi: 10.1016/j.bodyim.2009.06.002.
10. Bahrami M, Mohamadirizi M, Mohamadirizi S, Hosseini SA. Evaluation of body image in cancer patients and its association with clinical variables. J Educ Health Promot. 2017;6:81. doi: 10.4103/jehp.jehp_4_15.
11. Hung TM, Lin CR, Chi YC, Lin CY, Chen EY, Kang CJ, et al. Body image in head and neck cancer patients treated with radiotherapy: the impact of surgical procedures. Health Qual Life Outcomes. 2017;15(1):165. doi: 10.1186/s12955-017-0740-7.
12. Brederecke J, Heise A, Zimmermann T. Body image in patients with different types of cancer. PLoS One. 2021;16(11):e0260602. doi: 10.1371/journal.pone.0260602.
13. Brodie DA, Bagley K, Slade PD. Body-image perception in pre- and postadolescent females. Percept Mot Skills. 1994;78(1):147-54. doi: 10.2466/pms.1994.78.1.147.
14. Wiech K, Ploner M, Tracey I. Neurocognitive aspects of pain perception. Trends Cogn Sci. 2008;12(8):306-13. doi: 10.1016/j.tics.2008.05.005.
15. Chapman CR, Gavrin J. Suffering: the contributions of persistent pain. Lancet. 1999;353(9171):2233-7. doi: 10.1016/s0140-6736(99)01308-2.
16. Pereira CF, de Vargas D, Beeber LS. An anxiety management intervention for people with substance use disorders (ITASUD): an intervention mapping approach based on Peplau's theory. Front Public Health. 2023;11:1124295. doi: 10.3389/

fpubh.2023.1124295.
17. Mersha A, Abera A, Tesfaye T, Abera T, Belay A, Melaku T, et al. Therapeutic communication and its associated factors among nurses working in public hospitals of Gamo zone, southern Ethiopia: application of Hildegard Peplau's nursing theory of interpersonal relations. BMC Nurs. 2023;22(1):381. doi: 10.1186/s12912-023-01526-z.
18. Reed PG. The force of nursing theory-guided practice. Nurs Sci Q. 2006;19(3):225. doi: 10.1177/0894318406289489.
19. Belay W, Kaba M, Labisso WL, Tigeneh W, Sahile Z, Zergaw A, et al. The effect of interpersonal psychotherapy on quality of life among breast cancer patients with common mental health disorder: a randomized control trial at Tikur Anbessa Specialized Hospital. Support Care Cancer. 2022;30(1):965-72. doi: 10.1007/s00520-021-06508-y.
20. Cacayan EB, Alvarado AE, Esmundo OA, Cruz AD, Felix FC, Franco D, et al. Nursing therapy in dealing with anxiety of COVID-19 patients based on the model of interspersonal relations of Hildegard Peplau. Health Notions. 2021;5(7):232-341. doi: 10.33846/hn50702.
21. Galvão MI, da Silva Borges M, Pinho DL. [Interpersonal communication with oncological patients in palliative care]. Revista Baiana Enferm. 2017;31(3):e22290. doi: 10.18471/rbe.v31i3.22290.
22. Wild CP, Stewart BW, Wild C. World Cancer Report 2014. Geneva, Switzerland: World Health Organization; 2014.
23. Clark G. A history of the concept of interpersonal relations in nursing based on the psychiatric nursing textbook literature. Issues Ment Health Nurs. 2023;44(1):48-54. doi: 10.1080/01612840.2022.2108948.
24. Salehi S, Tajvidi M, Ghasemi V, Raee Z. Investigating the effect of nurse›s supportive and educative care on the quality of life in breast cancer patients referred for radiotherapy in Seyedoshohada hospitals in Isfahan in 2013. Journal of Multidisciplinary Care. 2016;5(2):9-18. [Persian].
25. Rajabi G, Kaveh Farsani Z, Fadaei Dehcheshmeh H, Jelodari A. Psychometric properties of the Persian version scale of body image among patients with breast cancer. Iran J Breast Dis. 2015;8(2):66-74. [Persian].
26. Khosravi M, Sadighi S, Moradi S, Zendehdel K. Translation, adaptation and reliability of Persian-McGill Pain Questionnaire (P-MPQ) in Iranian cancer patients. Basic Clin Cancer Res. 2014;6(3):12-7.
27. Meleis AI. Theoretical Nursing: Development and Progress. Lippincott Williams & Wilkins; 2011.
28. Hosseinzadeh A, Kohestani D, Masror D. The effect of interventions on improving and improving self-esteem and body image in cancer patients: a systematic review. Iran J Cancer Care. 2023;1(4):48-58. [Persian].
29. Hsu SC, Wang HH, Chu SY, Yen HF. Effectiveness of informational and emotional consultation on the psychological impact on women with breast cancer who underwent modified radical mastectomy. J Nurs Res. 2010;18(3):215-26. doi: 10.1097/JNR.0b013e3181ed57d0.
30. Izadi-Ajirlo A, Bahmani B, Ghanbari-Motlagh A. Effectiveness of cognitive behavioral group intervention on body image improving and increasing self-esteem in women with breast cancer after mastectomy. Archives of Rehabilitation. 2013;13(4):72-83. [Persian].
31. Chesnutt BM, Everhart B. Meeting the needs of graduate nurses in critical care orientation: staged orientation program in surgical intensive care. Crit Care Nurse. 2007;27(3):36-51.
32. Ghaffari F, Ghahramanian A, Zamanzadeh V, Onyeka TC, Davoodi A, Mazaheri E, et al. Patient-centred communication for women with breast cancer: relation to body image perception. J Clin Nurs. 2020;29(23-24):4674-84. doi: 10.1111/jocn.15508.
33. Moradi AM, Azadi M. Effectiveness of the solution focused group intervention on body image after mastectomy. Razi J Med Sci. 2018;25(5):38-45. [Persian].
34. Pintado S, Andrade S. Randomized controlled trial of mindfulness program to enhance body image in patients with breast cancer. Eur J Integr Med. 2017;12:147-52. doi: 10.1016/j.eujim.2017.05.009.
35. Richard A, Harbeck N, Wuerstlein R, Wilhelm FH. Recover your smile: effects of a beauty care intervention on depressive symptoms, quality of life, and self-esteem in patients with early breast cancer. Psychooncology. 2019;28(2):401-7. doi: 10.1002/pon.4957.
36. Harorani M, Noruzi Zamenjani M, Golitaleb M, Davodabady F, Zahedi S, Jadidi A, et al. Effects of relaxation on self-esteem of patients with cancer: a randomized clinical trial. Support Care Cancer. 2020;28(1):405-11. doi: 10.1007/s00520-019-05025-3.
37. Ghorbani M, Alipour A, Aliakbari Dehkordi M. The effectiveness of interventions of positive approach on depression, self-esteem, life expectancy and body image of mastectomized women. J Health Psychol. 2017;6(23):151-67. [Persian].
38. Zarea K, Maghsoudi S, Dashtebozorgi B, Hghighizadeh MH, Javadi M. The impact of Peplau›s therapeutic communication model on anxiety and depression in patients candidate for coronary artery bypass. Clin Pract Epidemiol Ment Health. 2014;10:159-65. doi: 10.2174/1745017901410010159.
39. Manzari Z.S, Memariyan R., Vanaki Z. Effect of therapeutic communication on pain anxiety and burn wounds healing status. Intern Med Today. 2013;19(2):59-65. [Persian].
40. Iacorossi L, Petrone F, Gambalunga F, Bolgeo T, Lavalle T, Cacciato D, et al. Patient education in oncology: training project for nurses of the "Regina Elena" National Cancer Institute of Rome (Italy). Teach Learn Nurs. 2023;18(3):e13-8. doi: 10.1016/j.teln.2023.02.003.
41. Mistiaen P, van Osch M, van Vliet L, Howick J, Bishop FL, Di Blasi Z, et al. The effect of patient-practitioner communication on pain: a systematic review. Eur J Pain. 2016;20(5):675-88. doi: 10.1002/ejp.797.
42. Kim-Soon N, Musbah FA, Ahmad AR. Enhancing of nurse interpersonal skill boosts cancer patient satisfaction. Adv Sci Lett. 2017;23(1):326-9. doi: 10.1166/asl.2017.7173.
43. Canivet D, Delvaux N, Gibon AS, Brancart C, Slachmuylder JL, Razavi D. Improving communication in cancer pain management nursing: a randomized controlled study assessing the efficacy of a communication skills training program. Support Care Cancer. 2014;22(12):3311-20. doi: 10.1007/s00520-014-2357-2.
44. Bahrami M, Dehgani S, Eghbali M, Daryabeigi R. The effect of a care program on pain intensity of cancer patients who underwent surgery and hospitalized in Sayyed-Al-Shohada hospital of Isfahan University of Medical Sciences in 2011. Iran J Nurs Midwifery Res. 2012;17(6):408-13.

Cite this article as: Naderi Samani S, Hasanpour Dehkordi A, Salehi Tali S. The effect of therapeutic communication based on Peplau's model on body image and pain among cancer patients undergoing radiotherapy in the Parsian hospital of Shahrekord. Journal of Multidisciplinary Care. 2023;12(4):159–165. doi: 10.34172/jmdc.1245.