



The Role of the Collaborative Care Model in Enhancing Resilience of Cancer Patients: Nursing Interventions in Educational Hospitals of Shahr-e-Kord

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ABSTRACT

Background and Objectives: The collaborative care model facilitates effective communication between nurses and patients, improving the quality of care and ultimately leading to better patient outcomes. This study aimed to evaluate the effect of nursing interventions based on the collaborative care model on the resilience of cancer patients in educational hospitals in Shahr-e-Kord.

Materials and Methods: This semi-experimental study was conducted in 2021 with 60 cancer patients in educational hospitals of Shahr-e-Kord. Participants were initially selected using purposive sampling and then randomly assigned to either the intervention or control group. The educational intervention, grounded in the collaborative care model, was delivered individually in four stages: motivation, preparation, engagement, and evaluation. Data were collected using a demographic questionnaire and the Connor-Davidson Resilience Scale (CD-RISC). Mean resilience scores were measured before, immediately after, and two months following the intervention. Statistical analyses, including independent t-tests, chi-square tests, and repeated measures ANOVA, were performed using SPSS version 24.

Results: Before the intervention, no significant difference in mean resilience scores was observed between the intervention and control groups ($p > 0.05$). However, immediately after the intervention and two months later, the intervention group showed a statistically significant increase in resilience compared to the control group ($p < 0.05$).

Conclusion: The findings suggest that nursing interventions based on the collaborative care model can effectively enhance resilience in cancer patients. Given its effectiveness, safety, and cost-efficiency, it is recommended that hospital administrators implement this approach to improve patient health outcomes and increase patients' knowledge and awareness.

Introduction

Cancer is a disease that originates from changes in the normal structure of cells due to genetic mutations. These abnormal cells proliferate uncontrollably, ignoring the usual rules of cell division, and through their aggressive behavior, they affect and alter body tissues (1). Approximately one-third of cancer-related deaths linked to five key lifestyle and dietary factors: high body mass index,

insufficient consumption of fruits and vegetables, lack of physical activity, tobacco use, and alcohol consumption. Among these, tobacco is particularly significant, accounting for roughly 22% of cancer-related deaths. Infections contribute to 7% of cancer cases in developed countries, whereas in developing countries including Iran and other regions of the Eastern Mediterranean this figure rises to 29%. Moreover, lifestyle factors such as physical activity

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levels, diet type, and exposure to environmental chemicals also significantly influence cancer risk (2). Cancer is one of the major challenges facing healthcare systems worldwide and is recognized as the third leading cause of death and the second most common non-communicable chronic disease. Globally, it accounts for 12% of all deaths, and the increasing trend emphasizes the need for focused attention on prevention, early detection, and effective treatment (3). In Iran, cancer ranks as the third leading cause of death, with projections indicating a rising incidence rate. Studies suggest that over the next decade, the number of cancer cases may double. Among men, stomach cancer is most prevalent, followed by bladder and colorectal cancers, while among women, breast cancer is most common, followed by skin and stomach cancers. Nonetheless, stomach cancer remains the leading cause of cancer-related mortality in both sexes (4). According to statistics from the Iranian Ministry of Health and the World Health Organization, approximately 112,000 new cancer cases are diagnosed annually in Iran, equating to 177 cases per 100,000 men and 140 per 100,000 women. Projections indicate that within the next 15 years, cancer could account for 80% of deaths in Iran, highlighting the critical need for preventive strategies, public awareness, and improved diagnostic and therapeutic methods (5).

Resilience, defined as the ability to face adversity and adapt positively to challenging conditions, is a key psychological concept, especially relevant in the context of cancer, trauma, and complex life situations. Some approaches view resilience as a stable coping style that enables individuals to confront and overcome difficulties (6). For example, Ludolph et al. describe resilience as a stable, enduring psychological trait (7), whereas Min et al. conceptualize it as a dynamic process in which individuals demonstrate positive adaptation despite experiencing trauma or hardship (8). The concept of resilience was first introduced to nursing literature by Polk, who proposed the limited-domain resilience theory and developed a nursing model framing resilience as the ability to transform a catastrophic event into a constructive and progressive experience (9).

Masten identifies two criteria for resilience: exposure to risk, harm, or threat, and positive adaptation in response to these factors. The first criterion refers to experiences or events that can disrupt normal functioning and produce negative outcomes (10), known as risk factors (11). Miller defines risk factors as conditions that increase the likelihood of behavioral or emotional disorders compared to individuals randomly selected from the general population. Therefore, individuals not exposed to developmental disruption or not overcoming challenges are not considered resilient, even if they appear so (12).

Resilient individuals tend to have an analytical and critical perspective on their abilities and circumstances. They show flexibility when facing changing conditions and possess notable skill in generating diverse solutions to problems. They can realistically evaluate personal challenges and implement both immediate and long-term strategies for complex issues requiring time and reflection (13).

Cancer is widely regarded as one of life's most stressful experiences. Individuals facing illness often encounter psychological challenges and attempt to endure hardships to overcome adverse conditions. This capacity to cope and adapt to difficulty is referred to in social sciences as "resilience" (14). Furthermore, cancer patients who enhance their resilience are better able to manage depression and stress associated with diagnosis and treatment. Evidence indicates that targeted psychological interventions following a cancer diagnosis significantly improve patients' mental well-being. Resilience is generally defined as the ability to maintain or quickly restore mental health during or after stressful life events (15).

Macía et al. found that individuals with higher flexibility scored better in adaptive coping strategies, particularly acceptance and positive reappraisal. Regarding perceived quality of life, those with low resilience reported higher levels of pain and poorer general health, which were the most prevalent challenges in low-resilience groups. A significant relationship between resilience and adaptive coping was observed, correlating positively with the quality of life in cancer patients (16).

Lai et al. reported that higher resilience in patients reduced disease-related pain and directly affected symptoms of depression, anxiety, and sleep disturbances. Resilience also mediated the relationship between marital satisfaction and depression symptoms. It is closely linked with other psychological factors, and patients with inadequate resilience face greater difficulties (17).

Research consistently shows that patients with higher psychological resilience experience lower stress and better adapt to life-threatening challenges. They manage difficult conditions more effectively and follow treatment with a more positive attitude and consistent adherence (18). Consequently, interventions focused on relaxation and stress reduction are particularly beneficial for these patients (19).

Modern nursing emphasizes the effectiveness of care and educational interventions based on nursing models. One such model is the Collaborative Care Model, first developed by Mohammadi et al. in 2002 for managing hypertension in Babol County and later evaluated (20). In this model, the quality and nature of interaction between patients and healthcare providers are critical. Active patient participation in the treatment process is prioritized over independent

actions. Collaboration between patients and healthcare professionals improves treatment outcomes, increases patient satisfaction, and enhances care quality (21). Moreover, using models aligned with patients' cultural background significantly improves health outcomes and promotes effective patient-nurse communication (20,22).

The Collaborative Care Model represents the first application of participation theory in nursing in Iran. It integrates patient participation as a structural element, emphasizing that the effectiveness of care depends on the quality and nature of the caregiving relationship (21).

To achieve the model's objectives, four structured stages are implemented:

- ✓ Motivation.
- ✓ Preparation.
- ✓ Engagement.
- ✓ Evaluation, each with defined practical programs (20).

The model's impact on quality of life, social support, self-efficacy, and self-concept in patients has been demonstrated (20,23). However, no study has yet examined its effect on resilience in cancer patients. Therefore, the present study aims to investigate the

impact of nursing interventions based on the Collaborative Care Model on the resilience of cancer patients.

Methods

The present study is a quantitative, semi-experimental intervention with two groups: intervention and control. The study population consisted of cancer patients undergoing chemotherapy in the internal medicine and hematology-oncology wards for both men and women at Ayatollah Kashani and Hajar hospitals in Shahr-e Kord. Inclusion criteria were: diagnosis of cancer, absence of psychiatric disorders, absence of other physical illnesses, and age over 15 years. Exclusion criteria included: severe physical complications from the disease or its treatment that prevented the patient from continuing participation, and unwillingness to continue in the study. The sample size was calculated using the following formula, resulting in 25 participants per group (intervention and control). Considering a potential 20% dropout rate, the final sample size was adjusted to 30 participants per group, for a total of 60 participants.

$$n = R \left\{ \frac{2(z_{1-\alpha/2} + z_{1-\beta})^2}{\Delta^2} + \frac{z_{1-\alpha/2}^2}{4} \right\}, R = \left[\frac{1 + (w-1)\rho}{w} - \frac{v\rho^2}{1 + (v-1)\rho} \right]$$

In this study, sampling was initially performed using purposive sampling, and then participants were assigned to the intervention and control groups according to the random allocation rule. Data collection tools included a demographic questionnaire capturing information such as gender, age, occupation, marital status, educational level, and blood type. To assess resilience, the Connor-Davidson Resilience Scale (CD-RISC) was used, which was developed by Connor and Davidson. This questionnaire consists of 25 items rated on a Likert scale from 0 (not true at all) to 5 (true nearly all the time), yielding a total score range of 0 to 100. Higher scores indicate greater resilience. The questionnaire comprises five subscales: perception of personal competence, trust in instincts, tolerance of negative affect, positive acceptance of change and secure relationships, and spiritual influences (27). Connor and Davidson reported a Cronbach's alpha of 0.89 for the CD-RISC (28), and test-retest reliability over a four-week interval was 0.87. The scale was standardized for use in Iran by Mohammadi, with a reported Cronbach's alpha of 0.89 (29). In the present study, reliability was confirmed using

Cronbach's alpha, which was estimated at 0.79, indicating acceptable reliability.

The study was conducted with approval from the Research Deputy and Ethics Committee of Shahrekord University of Medical Sciences, obtaining the ethical code IR.SKUMS.REC.1400.100. Written introduction letters were provided to Hajar and Kashani teaching hospitals, and all ethical codes were strictly observed. With permission from the ward authorities, eligible patients were informed about the study objectives, procedures, and inclusion criteria. After obtaining informed consent and emphasizing confidentiality, participants were enrolled. At the pre-intervention stage, questionnaires were distributed to participants and collected after 48 hours. During the intervention, the experimental group attended nine weekly sessions, organized into groups of six to eight participants. The session content, as presented in Table 1, was delivered specifically to the intervention group.

Table 1. Content of Educational Sessions

session	Title	Specific Objectives	strategies	Educational aids or Teaching materials	Duration
1	Creating Motivation	Session 1: Explanation of patients' current condition, including information about cancer and its complications. Session 2: Discussion of psychological challenges, effects of losing morale, and consequences of not maintaining a positive mindset. Session 3: Guidance on maintaining and managing psychological states, ways to preserve morale, emotional rehabilitation, and strategies to foster hope in patients.	Role-playing and Q&A Group Discussions	Video clip, PowerPoint, Pamphlet, Voice, Social Media	Three 60-minute sessions
2	Preparation	Session 1: Discussion of disease-related topics, including the effects of cancer, treatment methods, patient statistics and recovery rates, as well as psychological challenges and consequences of mental health issues. Session 2: Stress and anxiety management, introduction to resilience programs and sense of coherence, and training in therapeutic hope techniques. Session 3: Guidance on medication use, the impact of treatment regimens on patient recovery, comparison of conditions before and after stress, characteristics of hopeful patients, and strategies for maintaining psychological coherence.	Role-playing, Q&A, and Group Discussions	Video clip, PowerPoint, Pamphlet, and Voice messages via social media	Three 70-minute sessions
3	Engagement	This stage is considered one of the most important and sensitive strategic objectives of the model. The content of these sessions focuses on the final assessment and evaluation of the model's implementation, providing necessary feedback to the patient, and understanding the extent of their participation. During these sessions, patients' challenges are reviewed, and both the positive and negative outcomes of previous trainings and interventions are examined and reassessed. Additionally, guidance is provided to address and correct any identified shortcomings.	Q&A and Group Discussions	Voice messages via social media	Two 90-minute sessions
4	Evaluation	Re-administration of questionnaires by patients	Q&A	Social Media, Email	One session

At the end of the educational sessions, an instructional booklet was provided to participants in the intervention group. The booklet was developed by the researcher based on a review of existing

books and resources and was validated by a psychologist. The control group, however, did not receive any training and were only monitored in the research units. Immediately after the completion of

the sessions, the questionnaires were redistributed to participants in both groups and collected after a sufficient period (48 hours) to allow completion. Final data collection occurred two months after the intervention, at which point resilience levels in both the intervention and control groups were reassessed using the same questionnaire. To uphold ethical considerations, the educational booklet was provided to the control group at the conclusion of the study.

Data from the two groups, collected before, immediately after, and two months' post-intervention, were analyzed using SPSS 24. Descriptive statistics (mean, standard deviation, interquartile range, etc.) and inferential statistics including independent t-tests, Fisher's exact test, Mann-Whitney test, and Friedman test were applied for analysis.

Results

A total of 60 participants were enrolled in the study and randomly assigned to two groups of 30 each (intervention and control). No participants were lost to follow-up, and all completed the educational sessions and questionnaires in full. The participants' ages ranged from 33 to 65 years, with a mean of 49.45 ± 8.45 years. The mean age in the control group was 47.40 ± 1.27 years, and in the intervention group, it was 51.50 ± 1.71 years. An independent t-test revealed no significant difference in age between the two groups ($P=0.060$).

Other demographic characteristics, including marital status, educational level, gender, blood type, and occupation, were also comparable between the two groups prior to the intervention. Chi-square and independent t-tests indicated no significant differences ($P<0.05$) (Table 2).

Table 2. Distribution of Patients' Demographic Characteristics in the Intervention and Control Groups

Variable	Subgroup	Control Group	Intervention Group	P-value
		Frequency (%)	Frequency (%)	
Marital Status (Married)	Married	26 (86.66)	26 (86.66)	0.99>
	Single	4 (13.33)	4 (13.33)	
Educational Level (Bachelor's Degree)	Below Diploma	8 (26.66)	10 (33.33)	*0.31
	Diploma	6 (20)	10 (33.33)	
	Associate Degree	11 (36.66)	4 (13.33)	
	Bachelor's Degree	4 (13.33)	4 (13.33)	
	Master's Degree and above	1 (3.33)	2 (66.6)	
Gender	Male	17 (56.66)	16 (53.33)	0.79
	Female	13 (43.33)	14 (46.66)	
Occupation	Self-employed	13 (43.33)	12 (40)	0.68
	Housewife	9 (30)	6 (20)	
	Employee	5 (16.66)	7 (23.33)	
	Retired	3 (10)	5 (16.66)	

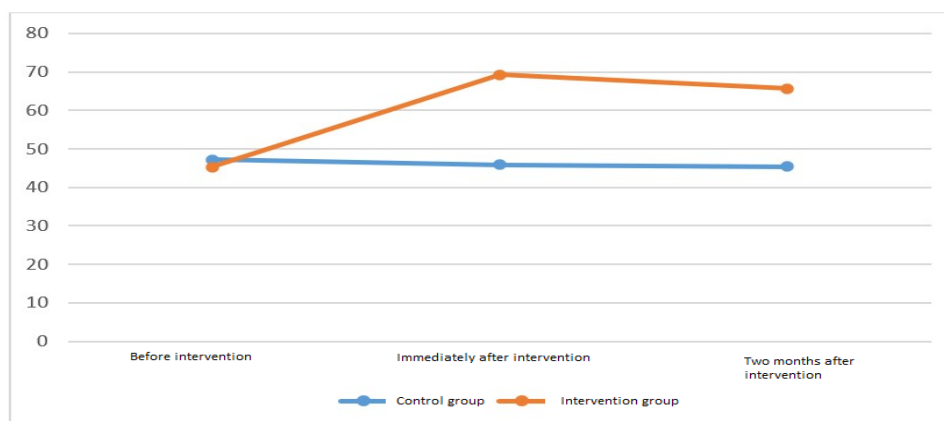
* Based on the Fisher Exact Test

The results of the resilience variable in cancer patients in the control and intervention groups during the study are presented in Table 3.

Table 3. Mean and Standard Deviation of Resilience Scores in Cancer Patients in the Control and Intervention Groups During the Study

	Group stage	Control Group	Intervention Group	Between-group p-value
		Mean $\pm$ SD	Mean $\pm$ SD	
Resilience	Before the intervention	47.23 ± 0.87	45.30 ± 0.698	0.070
	Immediately after the intervention	45.86 ± 1.049	69.20 ± 1.26	<0.001
	Two months after the intervention	45.36 ± 0.84	65.70 ± 1.13	<0.001
	Within-group p-value	0.631	$p < 0.001$	
	Changes during the study	1.86 ± 1.45	-20.40 ± 1.59	<0.001

* Significance of the interaction effect of group and variable over time



Resilience Scores in Intervention and Control Groups

Between-group comparisons using independent t-tests indicated no significant difference in total resilience scores between the intervention and control groups at baseline ($P=0.070$). Similarly, no significant differences were observed in the resilience subcomponents before the intervention ($P>0.05$). However, immediately after the educational intervention and at the two-month follow-up, resilience scores were significantly higher in the intervention group compared to the control group ($P<0.05$). Repeated measures ANOVA further confirmed a significant upward trend in resilience scores over time in the intervention group ($P<0.05$), whereas the control group showed no significant changes across the three measurement points ($P>0.05$).

Discussion

The findings indicate that resilience levels were comparable between groups before the intervention, but significant improvements were observed in the intervention group immediately and two months after the program ($P<0.05$).

Previous studies support these findings. Shimada et al. (2021) reported that nursing interventions designed to support cancer patients during chemotherapy through self-affirmation, family engagement, maintenance of routine lifestyle, patient interactions, and information provision (participatory care) effectively enhance resilience, consistent with the present results (30). Similarly, Molaei et al. (2022) found that nursing interventions can increase resilience and improve psychological well-being by providing patients with new coping strategies and opportunities for interaction (31). Wang et al. (2021) demonstrated that structured educational nursing interventions help breast cancer patients manage emotions, cope with setbacks, and increase flexibility, aligning with the current study (32).

Lee et al. (2018) highlighted that active patient participation in daily nursing goal management improves resilience by allowing patient-centered care, shared goal-setting, and ongoing evaluation support. Although the study population differed, their results corroborate the effectiveness of participatory care in enhancing resilience (33). Zoladl et al. (2020) also confirmed that participatory care models improve resilience in patients with psychiatric disorders by providing quality care, strengthening family support, and promoting social functioning, consistent with the present findings (34). Resilience functions as a protective factor, buffering the physical and psychological effects of chronic illnesses such as cancer. Research indicates that resilience is not fixed and can be strengthened. Participatory care interventions provide patients with the tools to manage their illness, cope with future challenges, improve self-care, and reduce psychological and physical burdens, thereby enhancing resilience (35). Ludolph et al. (2019) similarly reported that interventions grounded in positive psychology, supportive-expressive group therapy, behavioral therapy, and participatory approaches effectively increase resilience in cancer patients, supporting the current study's results (36). Participatory nursing consultations increase patients' knowledge about managing disease complications and effective coping strategies. This approach strengthens resilience by fostering a supportive relationship with healthcare staff, which enhances motivation, treatment adherence, and overall hope. While Savaş et al. (2022) found no effect of nursing interventions on resilience or quality of life, this discrepancy may be attributed to differences in intervention type and duration compared to the present study (37). Conversely, Hu et al. (2018) found that social support positively affects resilience in cancer patients, aligning with the current findings (38).

Repeated measures analysis showed that resilience scores in the control group did not significantly change over the three time points ($P=0.631$), whereas the intervention group demonstrated

significant improvements immediately and two months' post-intervention ($P < 0.001$). Active patient involvement allows for shared management of disease between patients and healthcare providers. In participatory care programs, patients play a central role, with all care activities focused on their needs. This model promotes relative independence, self-decision-making, health improvement based on personal abilities and lifestyle, and enhanced quality of life. Encouraging patients to express concerns and participate in goal-setting fosters collaboration, keeps them informed about their treatment, increases hope, and improves their outlook on life. The results of this study indicate that educational interventions based on participatory care models can significantly enhance hope and resilience in cancer patients. Given the effectiveness, low cost, and safety of this approach, hospital administrators are encouraged to adopt and implement this nursing model to improve patient health, knowledge, and engagement.

Conclusion

The findings of this study demonstrated that nursing interventions based on the collaborative care model significantly enhance the resilience of patients with cancer. By establishing a foundation for effective communication between nurses and patients, this approach not only improves the quality of care but also promotes better health outcomes. Considering its effectiveness, safety, and cost-efficiency, the implementation of the collaborative care model can be recommended as a practical strategy within the healthcare system, fostering increased awareness, empowerment, and improved quality of life among cancer patients.

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Authors' Contributions

All authors contributed to data analysis, drafting, and revising of the paper and agreed to be responsible for all the aspects of this work.

References

- [1] Gholamian A, Divsalar A. [Dual molecular mechanism of catalase in cancer and resistance to chemotherapy](#). Journal of Gorgan University of Medical Sciences. 2016;18(2):1-11.
- [2] Golabi F, Agayari Hir T, Saei M. [Study of the Media's Role in Feeding Behavior and Its Social Context \(Case Study: Citizens Over 15 Years in Tabriz\)](#). 10.22108/jas.2016.20479.
- [3] National Cancer Institute: Comprehensive Cancer Information: from A: www.cancer.gov, Accurate, up-to-date, comprehensive cancer information from the U.S. government's principal agency for cancer research. 2018.
- [4] Sites, A. [SEER cancer statistics review 1975-2011](#). Bethesda, MD: National Cancer Institute. 2014.
- [5] Beiranvand S, Zarea K, Ghanbari S, Tuveson H, & Keikhaei B. [Ten years' incidence of cancer in Iran; a systematic review and meta-analysis](#). Clinical Epidemiol Glob Health, 2018; 6(2), 94-102.
- [6] Syriopoulou E, Bower H, Andersson TM, Lambert PC, & Rutherford MJ. [Estimating the impact of a cancer diagnosis on life expectancy by socio-economic group for a range of cancer types in England](#). Brit j cancer, 2017;117(9): 1419-1426.
- [7] Seiler A, & Jenewein J. [Resilience in cancer patients](#). Front psych. 2019; 10: 208.
- [8] Ludolph P, Kunzler AM, Stoffers-Winterling J, Helmreich I, & Lieb K. [Interventions to promote resilience in cancer patients](#). Dtsch Arztebl Int. 2019; 116(51-52): 865.
- [9] Pourafzal F, Seyedfatemi N, Inanloo M, Haghani H. [Relationship between Perceived Stress with Resilience among Undergraduate Nursing Students](#). Hayat. 2013;19(1):41-52.
- [10] Masten AS. [Resilience theory and research on children and families: Past, present, and promise](#). J Fam Theor Rev, 2018;10(1), 12-31.
- [11] Kim AW, Kaiser B, Bosire E, Shahbazian K, & Mendenhall E. [Idioms of resilience among cancer patients in urban South Africa: An anthropological heuristic for the study of culture and resilience](#). Trans psych, 2019;56(4), 720-747.
- [12] Miller, F., H. Osbahr, E. Boyd, F. Thomalla, S. Bharwani, G. Ziervogel, B. Walker, J. Birkmann, S. Van der Leeuw, J. Rockström, J. Hinkel, T. Downing, C. Folke, and D. Nelson 2010. [Resilience and vulnerability: complementary or conflicting concepts](#). Ecology and Society 15(3): 11.
- [13] Naglieri JA, LeBuffe PA, & Ross KM. [Measuring resilience in children: From theory to practice](#). In *Handbook of resilience in children* (241-259). Springer, Boston, MA. 2013.
- [14] Seiler A, & Jenewein J. [Resilience in cancer patients](#). Front psychiatry, 2019;10, 208.
- [15] Lü W, Wang Z, Liu Y, & Zhang H. [Resilience as a mediator between extraversion,](#)

- neuroticism and happiness, PA and NA. *Personal Indiv Diff*,2014; 63: 128-133.
- [16] Ludolph P, Kunzler AM, Stoffers-Winterling J, Helmreich I, & Lieb K. *Interventions to promote resilience in cancer patients*. *Dtsch Arztebl Int*, 2019;116(51-52): 865.
- [17] Zahid N, Khalid W, Ahmad K, Bhamani SS, Azam I, Asad N, & Enam A. *Resilience and quality of life (QoL) of head and neck cancer and brain tumour survivors in Pakistan: an analytical cross-sectional study protocol*. *BMJ open*, 2019; 9(9): e029084.
- [18] Lai HL, Hung CM, Chen CI, Shih ML, & Huang CY. *Resilience and coping styles as predictors of health outcomes in breast cancer patients: A structural equation modelling analysis*. *Europ j cancer care*, 2020; 29(1): e13161.
- [19] Axelsson U, Rydén L, Johnsson P, Edén P, Månsson J, Hallberg IR, & Bareback CA. *A multicenter study investigating the molecular fingerprint of psychological resilience in breast cancer patients: study protocol of the SCAN-B resilience study*. *BMC cancer*,2018; 18(1), 1-7.
- [20] Azadi F, Mohammadi E. *Effect of using partnership care model on quality of life in coronary artery disease patients*. *Iran J Nurs Res*. 2006; 1(2):23-9.
- [21] Parastoo R, Shahriari A, Moieni A, Sanei H. *Evaluation of the effect of collaborative care on depression, anxiety and stress of patients after coronary angioplasty*. *Med-Surg Nurs J*. 2016;5(2):59-66.
- [22] Sajjadi M, Tavakolizadeh J, Heidary Marghzar M. *Effect of the Intervention based on Partnership Care Model on Self-Concept Promotion in Patients with Type II Diabetes*. *Horizon Med Sci*. 2017; 23 (1):41-47.
- [23] Rakhshan, M., Ganjalivand, S., Zarshenas, L., & Majdinasab, N. (2018). *The effect of collaborative care model-based intervention on hope in caregivers and patients with multiple sclerosis: a randomized controlled clinical trial*. *International journal of community-based nursing and midwifery*, 6(3), 218.
- [24] Snyder C R, Harris C, Anderson JR, Holleran SA, Irving SA, Sigmon S. *The will and the ways: Development and validation of an individual differences measure of hope*. *J Pers Soc Psychol* 1991; 60(4): 570-85.
- [25] Snyder C, Ilardi SS, Cheavens J, Michael ST, Yamhure L, Simpson S. *The role of hope in cognitive behavior therapies*. *J Cognitive Therapy Res* 2002; 24(6): 747-62.
- [26] Zahed Babolan A, Ghasempour A, Hassanzade Sh. *The Role of Forgiveness and Psychological Hardiness in Prediction of Hope*. *Knowledge Res Appl Psychol* 2011; 12(3): 12-9.
- [27] Antonovsky A. *The structure and properties of the sense of coherence scale*. *Social Science & Medicine*. 1993; 36 (6):725-733.
- [28] Lustig DC, Rosenthal DA, Strauser DR, Haynes, K. *The relationship between sense of coherence and adjustment in persons with disabilities*. *Rehabilitation Counseling Bulletin*. 2000; 43(3):134 - 141.
- [29] Farshidfar Z, Rahimian-Boogar I, Asadi J, Izadpanahi P. *The effectiveness of group-based behavioral activation therapy on adherence to treatment of women with breast cancer*. *Feyz*. 2019; 23(5): 511-20.
- [30] Mollaei Z, Rahemi Z, Izadi Avanjani FS, Sarvizadeh M, Hosseini M, & Akbari H. *The Effect of Self-care Training by Peer Group on the Resilience of Patients with Cancer: A Randomized Clinical Trial*. *J Client-Center Nurs Care*,2022; 8(1), 41-50.
- [31] Wang Z, Liu QY, Zhao YL, Xu XY, Chen Y, Cao WJ, & Mao X. *The interventions for resilience of breast cancer patients: a systematic review and meta-analysis*. 2021.
- [32] Lee J, Seo E, Choi J, & Min J. *Effects of patient participation in the management of daily nursing goals on function recovery and resilience in surgical patients*. *J Clin Nurs*, 2018;27(13-14): 2795-2803.
- [33] Zoladl M, Afroughi S, Nooryan K, Kharamin S, Haghgoo A, & Parandvar Y. *Applying collaborative care model on intensive caregiver burden and resilient family caregivers of patients with mental disorders: A randomized controlled trial*. *Iran j psych*,2020; 15(1): 17.
- [34] Macía P, Barranco M, Gorbeña S, & Iraurgi I. *Expression of resilience, coping and quality of life in people with cancer*. *PLoS One*, 2020;15(7), e0236572.
- [35] Hu T, Xiao J, Peng J, Kuang X, & He B. *Relationship between resilience, social support as well as anxiety/depression of lung cancer patients: a cross-sectional observation study*. *J cancer res therap*,2018; 14(1), 72.
- [36] Savaş BB, Märtens B, Cramer H, Voiss P, Longolius J, Weiser A, & Steinmann, D. *Effects of an Interdisciplinary Integrative Oncology Group-Based Program to Strengthen Resilience and Improve Quality of Life in Cancer Patients: Results of a Prospective Longitudinal Single-Center Study*. *Integrat Cancer Therap*, 2022; 21: 15347354221081770.
- [37] Narimani M, Eyni S. *Relationship between Meaning of Life, Self- Compassion and sense of coherence with perceived stress in cancer patients*. *IJCA*. 2020; 1 (3):1-10.
- [38] Ludolph P, Kunzler AM, Stoffers-Winterling J, Helmreich I, & Lieb K. *Interventions to promote resilience in cancer patients*. *Dtsch Arztebl Int*. 2019; 116(51-52): 865.