

# Effect of Faye Glenn Abdellah's Nursing Theory on Quality of Life in Cancer Patients: A Randomized Controlled Trial

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## ABSTRACT

**Aims** Cancer disrupts the quality of life of patients, as well as increases the care burden of the patients' families. The current study aimed to determine the effect of Glenn Abdellah's nursing theory on quality of life of patients with cancer.

**Materials & Methods** In this randomized control trial, 60 patients with cancer were selected by purposive sampling method in Shahid Modarres Hospital, Saveh city in 2020. Then the samples were divided into intervention and control groups using random allocation. Then the samples were divided into intervention (n=30) and control (n=30) groups using random allocation. The intervention related to ten steps in Faye Glenn Abdellah's Nursing Theory was implemented for intervention group, but there was no intervention in the control group. Information was collected before, after the intervention, and one month after the intervention through World Health Organization Quality-of-Life Scale (WHOQOL-BREF). Data were analyzed by SPSS 22 software, using descriptive statistics methods and inferential analysis tests.

**Findings** In the intervention group, the mean score of patients' quality of life increased significantly after intervention and one month after intervention (p<0.001). After intervention and the follow-up period, the quality of life in the intervention group was better than that of the control group (p<0.001).

**Conclusion** The use of nursing care theories, such as Faye Glenn Abdellah's nursing theory, can improve the quality of life in cancer patients.

**Keywords** Cancer; Quality of Life; Nursing Theory

## CITATION LINKS

[1] Toward a national initiative in cancer rehabilitation ... [2] Disparities by sexual orientation in frequent ... [3] Intraoperative cell salvage in metastatic spine tumour ... [4] Epidemiology, incidence and mortality of oral ... [5] The global burden of women's cancers ... [6] Nuclear energy and ... [7] Incidence trends of colorectal cancer in Iran during ... [8] Outdoor adventure therapy to increase physical ... [9] Personality disorders, but not cancer severity ... [10] Hormone replacement therapy after ... [11] The social determinants of chronic ... [12] From a death sentence to a disrupted life ... [13] Early normalization of quality ... [14] Self-reported financial burden of cancer ... [15] A roadmap to improve the quality of ... [16] Impact of xerostomia and dysphagia ... [17] The longitudinal relation between patterns ... [18] Distance caregiving a family member ... [19] Caring for caregivers and patients ... [20] Hormone replacement therapy in ... [21] Integrated palliative care in Europe ... [22] Nursing theory, social theory, and philosophy ... [23] Knowledge practice and outcome of quality ... [24] The World Health Organization quality of Life ... [25] Faye Abdellah: 21 Nursing Problems ... [26] The effect of hope-based group therapy ... [27] The relationship between disease features ... [28] Effect of a patient-centered communication ... [29] Rasch analysis of the Herth Hope Index ... [30] Patients are dissatisfied with information provision ... [31] Health related quality of life during cancer ... [32] The effect of self-care program based on Orem's ... [33] Effect of Orem self-care pattern on quality ... [34] The impact of a multidisciplinary self-care ... [35] Self-efficacy for coping moderates the ... [36] Preoperative Pain Neuroscience Education Combined ... [37] Does depression treatment improve the survival ...

## Introduction

Cancer is a general term that can affect various organs of the body. Change of the body cells to metastasis and even the mortality of the patient can be different levels of cancer. The leading cause of death is metastatic cancer <sup>[1]</sup>. Lifestyle, age, sex, and race are the most critical factors affecting the development of cancer <sup>[2]</sup>.

Lung and breast cancers are the most common cancers that involve men and women worldwide <sup>[3]</sup>. About 454 per 100,000 people have cancer in the world every year <sup>[4]</sup>. Cancer is one of the major causes of mortality in developed and developing countries <sup>[5]</sup>. Annually, 1.6 million people in the United States are diagnosed with cancer, of which about 500,000 people die <sup>[6]</sup>. About 10,000 cases of cancer are reported in Iran, every year <sup>[7]</sup>.

Cancer treatment can improve the Quality of Life (QOL) and the physical and mental status of patients <sup>[8]</sup>. These treatments are different depending on the type of cancer, the degree of body involvement and even the economic conditions of the patients <sup>[9]</sup>.

Various therapies are used to treat cancer, including surgery, hormone therapy, radiotherapy and chemotherapy <sup>[10]</sup>. The chronic course of cancer is a major factor influencing the economic situation, social and individual life, and the QOL of these patients <sup>[11]</sup>. Treatment conditions in cancer patients can also disrupt the lifestyle and the QOL of patients <sup>[12]</sup>.

QOL is the patients' satisfaction and happiness in their personal life during the period of illness and treatment, which can help the rapid improvement of the patient's condition and the experience of healthy life <sup>[13]</sup>. The quality of life of cancer patients is related to their physical, mental and therapeutic status <sup>[14]</sup>. Improving the quality of life can influence enhancing the ability and power of the body in the therapeutic process and the safety of patients <sup>[15]</sup>. A healthy and quality lifestyle is important to survive and increase the patient's longevity <sup>[16]</sup>.

Studies have shown that there is a significant difference in life dimensions and life purpose between cancer patients and normal people <sup>[17]</sup>. Due to the nature of the disease in cancer patients at different stages of treatment and life, they need caregivers to take care of and perform daily tasks <sup>[18]</sup>. The support of family-based caregivers is effective in creating the proper conditions for cancer patients <sup>[19]</sup>. Since taking care of a cancer patient is time-consuming and difficult, patients undergo physical, psychological and economic pressures and even lose their normal life conditions <sup>[20]</sup>. The use of nursing theories, which is an important care indicator in improving the status and quality of life of cancer patients, can have a good effect <sup>[21]</sup>.

One of the important theories for patients' health is Faye Glenn Abdellah's Nursing Theory (FGANT).

Unfortunately, no study has used this theory for cancer patients. FGANT emphasizes on identifying patients' hidden problems and solving problems quickly, taking into account the nurses, environment, health, and patient as well as focusing on nursing diagnoses. Therefore, the theory considers 21 needs as the basic problems of the patients and argues that the main purpose to reduce these problems is the establishment of the patient's performance <sup>[22]</sup>.

No study has been conducted on the implementation of Faye Glenn Abdellah's Nursing Theory in the nursing care of patients with cancer. Also, there is a gap between knowledge and practice of nursing to implement Faye Glenn Abdellah's Nursing Theory. In addition, understanding the patient's generality and the continuity of care from admission to discharge is fundamental in this nursing theory <sup>[23]</sup>.

Therefore, the present study was conducted with the aim of determining the effect of Faye Glenn Abdellah's Nursing Theory on the quality of life in patients with cancer.

## Materials and Methods

This study was conducted as a randomized control trial and was registered in the Iranian Registry of Clinical Trials (IRCT) with the code IRCT20170422033576N1.

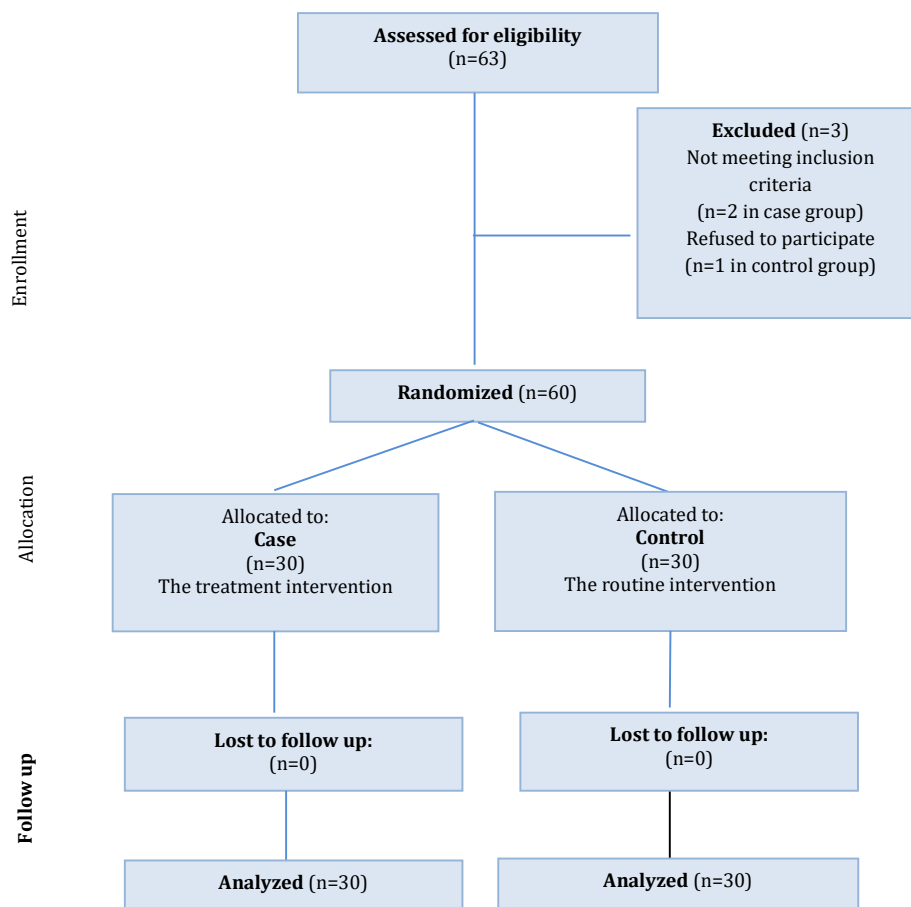
In this clinical trial study, 60 patients with cancer were selected by purposive sampling method in Shahid Modarres Hospital, Saveh city in 2020.

Considering the confidence level of 95%, the test power of 80% and the number of patients who reached the desired standard of living after the intervention, the sample size in the intervention and control group was estimated to be 30 people in terms of the dropout level. The quantitative sample size determination formula was used to calculate the sample size.

The inclusion criteria included age 18 to 60 years, cancer stages 1 to 3 based on the clinical course, having a pathological diagnosis, patient's awareness of the diagnosis, reading and writing literacy, starting chemotherapy and radiotherapy, and psychological and physical ability to participate in the study. Exclusion criteria included the patients in the end stage of the disease, passing similar care courses in the past, the unwillingness to continue the study and the loss of samples for any reason, including the death of the patients.

Then the samples were divided into intervention and control groups using random allocation and random numbers obtained by Excel. Our strategy in the study was to attract people, explain the objectives of the study and point out its safety.

The CONSORT checklist was used as a template to measure overall compliance (Figure 1).



**Figure 1)** CONSORT diagram

After obtaining the necessary permissions and informed consent of the patients, a questionnaire including demographic information and the patient's QOL was used to collect information.

The World Health Organization Quality-of-Life Scale (WHOQOL-BREF) includes 26 items to assess the QOL and general conditions of the patients, which evaluates the patient's physical health, mental health, social relationships, environmental health, and general QOL. The questionnaire consists of four parts: the first part examines the patient's condition in the last week, the second part includes the patient's experience in the last four weeks, and the third part includes the ability and experience of doing specific tasks during the last four weeks, and the fourth part includes feelings and experiences of specific things in the last four weeks. The items were scored based on a Likert scale from 1 to 5. Items 3, 4, and 26 were scored reversely.

The QOL score in the physical health subscale is between 7 and 35, and the mean score is 28. The QOL score in the mental health subscale is between 6 and 30, and the mean score is 24. The QOL score in the social relationship subscale is between 3 and 15,

and the mean score is 12. The QOL score in the environmental health subscale is between 8 and 40, and the mean score is 32. Finally, the score of general QOL is between 2 and 10, and the mean score is considered to be 8.

**Table 1)** The process and steps of identifying patients' problems in FGANT

Steps Processes	
1	Identifying patients' problems
2	Carrying out activities based on the nursing skills
3	Continuous care designed to relieve discomfort, pain relief and patient comfort
4	Adjustment between nursing design and presentation
5	Nursing care based on patient needs
6	Helping the patient to maintain physical and mental health and self-care as much as possible
7	Helping the patient to minimize limitations and emotional problems
8	Training the patient's family to help the patient, as well as training nursing staff, to take nursing measures according to the limitations
9	Continued collaboration with health care professionals to design and promote hygiene at the regional and international levels
10	Continuous assessment and research to develop and improve the efficiency of nursing services and the application of measures

After calculating the raw score of the subscales for each patient, the questionnaire's specific formula was used to convert the obtained score into a standard score from 0 to 100.

Nejat *et al.* reported that the internal consistency of the questionnaire in all subscales in Iran was higher than 0.7, but only the internal consistency of the social relationship score was reported as 0.55. The reliability of the questionnaire in subscales of physical health, mental health, social relationship, and environmental health was reported as 0.77, 0.77, 0.75 and 0.84, respectively [24].

Information was collected before, after and one month after the intervention as a follow-up period.

The intervention had ten steps in FGANT (Table 1) and was implemented by nurses as researchers [25].

The optimal physical, mental, environmental and care conditions for patients were considered in every aspect of the problems. The training program was extracted based on the 21 needs of the FGANT. In each problem, specific plans with related purposes were considered to meet patients' needs. With the presence of the researcher, the necessary measures were optimally provided in each of these dimensions and the patients were placed in these conditions. The range of care provided includes complete self-care by the patient, full nursing care and relative and quantitative nursing care (Table 2).

**Table 2)** Patient care program based on 21 nursing problems in the FGANT

Problems	Plan
1. Maintaining good hygiene and physical comfort	Changing the daily cloth, daily and safe bath, ironing the clothes
2. Promoting optimal activity: exercise, rest, sleep	Regular exercise, regular sleep and short rest in per day, in a relaxed and stress-free environment
3. Safety promotion	Use of seat belt, use of a cane, use of socks, proper use of nail clipper and electric shaver and regular hand washing
4. Creating good physical condition and preventing and correcting deformity	Picking objects correctly, regular exercise of limbs in normal joints area, and having a balanced weight and daily weighing
5. Facilitating the maintenance of a supply of oxygen to all body cells	Training pursed-lip breathing, effective cough, use of fluids, walking daily, use of masks and cannula, and correct position of the head, neck, and bed
6. Facilitating the maintenance of nutrition for all body cells	Dietary regimen based on the condition of the kidneys, heart and comorbidity, diverse daily diet (fruits, vegetables, cereals, meat and dairy), high fat, starch and fiber restriction, weight balance, low food consumption in several meals, intake of enough fluids and paying attention to the drug program, the complications and effects of prescribed drugs
7. Facilitating the maintenance of elimination	Mobility, intake of fluids, Kegel exercise, using fibers, using skin softeners
8. Facilitating the maintenance of fluid and electrolyte balance	Checking fluid intake and output, monitoring tests, creatinine, electrolytes, and dry skin
9. Recognizing the physiologic responses of the body to disease conditions-pathologic, physiologic and compensatory	Attention to conditions such as headache, diarrhea, colds, and the elimination of these conditions by medicinal and non-pharmaceutical treatments in light of limitations
10. Facilitating the maintenance of regulatory mechanisms and functions	Continuous monitoring of vital signs (patient's pulse, blood pressure, respiration, and temperature) and control of oxygen saturation
11. Facilitating the maintenance of sensory function	Daily check of olfaction, gustation, tactile, visual and hearing senses in the patient, adjusting the light, the noise during sleep and rest
12. Identifying and accepting positive and negative expressions, feelings and reactions	Communicating correctly and paying attention to the wishes and conversations of the patient and increasing life expectancy
13. Identifying and accepting the interrelatedness between emotions and organic disease	Training to reduce anxiety, about disease and symptoms, and distracting the patient's mind from despair and negative thoughts
14. Facilitating the maintenance of effective verbal and non-verbal communication	Paying attention to the patient's body language during interview and speaking and understanding his current condition
15. Promoting the development of productive interpersonal relationships	Considering parties, participation of the patient in daily routines
16. Facilitating progress towards achievement and personal spiritual goals	Specific religious programs based on the patient's interests throughout the day with an appropriate environment
17. Creating or maintaining a therapeutic environment	Continuous communication between the nurse and the patient, maintaining the therapeutic environment alongside the living environment, not only an absolute therapeutic environment for the comfort of the patient
18. Facilitating self-awareness as an individual with different physical, emotional and developmental needs	Daily interview, patient's participation in tasks, assignment of some affairs to him, and use of encouragement to motivate the patient
19. Acceptance of optimal possible goals in light of physical and emotional limitations	Training the use of auxiliary equipment such as wheelchairs, crutches, and walkers as a complementary device, not a limitation and helping the patient to achieve a suitable environment with the least stress based on his interests (film, music, special activity, reading books)
20. Using community resources to help solve problems caused by the disease	Providing a specific environment such as the isolated room and treatment room, and receiving medication in case of the patient's complicated condition
21. Understanding the role of social problems as effective factors in causing disease	Patients' involvement in the patient-based meetings and support institutions, engagement of patients in group discussions and group leadership with an emphasis on respect for interpersonal rights and respect for others' rights and helping them as someone who understands others.

The treatment period for the intervention group lasted four months for 5 hours per day for 4 sessions per week with the presence of the researcher. There was no intervention in the control group.

Data were analyzed by SPSS 22 software, using descriptive statistics methods (mean, standard deviation, percentage) and inferential analysis tests (Independent t-test, Chi-square test, repeated measures ANOVA and Bonferroni post hoc test).

## Findings

There was no significant difference in demographic characteristics between the intervention and control groups (Table 3).

In the intervention group, the mean QOL score of patients increased significantly after intervention and one month after intervention, in different physical, mental, social, and environmental dimensions as well as general QOL ( $p < 0.001$ ), whereas in the control group, the mean QOL score in patients showed a significant difference in all aspects of QOL with decreasing trend ( $p < 0.001$ ). The general QOL score also decreased significantly in the control group ( $p = 0.004$ ; Table 4).

**Table 3)** Comparison of demographic characteristics of patients in two intervention ( $n=30$ ) and control ( $n=30$ )

Demographic variables	Intervention group	Control group	P-value
Descriptive characteristics, mean±SD			
Age, years	46.63±13.65	47.03±14.21	0.912*
Duration of disease, months	9.50±2.66	9.67±3.48	0.836*
Gender, No. (%)			
Female	20 (66.7)	22 (73.3)	0.779*
Male	10 (33.3)	8 (26.7)	
Marital status, No. (%)			
Married	23 (76.7)	22 (73.3)	1.00**
Single/widowed	7 (23.3)	8 (26.7)	
Educational level, No. (%)			
Illiterate	4 (13.3)	3 (10.0)	1.00**
Literate and above	26 (86.7)	27 (90.0)	
Employment status, No. (%)			
Unemployed	9 (30.0)	7 (23.3)	0.584*
Freelancer	8 (26.7)	6 (20.0)	
Housewife	7 (23.3)	12 (40.0)	
Employed	6 (20.0)	5 (16.7)	
Location, No. (%)			
City	16 (53.3)	9 (30.0)	0.115*
Village	14 (46.7)	21 (70.0)	
Surgical history, No. (%)			
Yes	21 (70.0)	23 (76.7)	0.386*
No	9 (30.0)	7 (23.3)	

\*Independent t-test; \*\*Chi-square test

**Table 4)** Comparison of different dimensions of the QOL between two Intervention and control groups

QOL subscales	Pre-test	Post-test	Follow up	F	P-value*
<b>Intervention group</b>					
Physical health	35.28 $\pm$ 20.60	46.86 $\pm$ 16.71	50.99 $\pm$ 14.97	62.085	<0.001
Mental health	35.20 $\pm$ 18.29	48.43 $\pm$ 14.86	54.22 $\pm$ 12.08	101.362	<0.001
Social relationship	35.16 $\pm$ 14.43	48.15 $\pm$ 15.20	55.86 $\pm$ 14.35	193.524	<0.001
Environmental health	40.70 $\pm$ 8.92	49.28 $\pm$ 11.41	54.17 $\pm$ 11.36	92.599	<0.001
Total	34.38 $\pm$ 14.82	55.22 $\pm$ 18.73	65.63 $\pm$ 15.57	20.724	<0.001
<b>Control group</b>					
Physical health	50.36 $\pm$ 17.44	47.04 $\pm$ 15.74	44.38 $\pm$ 16.87	34.647	<0.001
Mental health	48.39 $\pm$ 15.75	45.43 $\pm$ 13.74	44.74 $\pm$ 13.45	14.649	<0.001
Social relationship	56.27 $\pm$ 14.75	48.43 $\pm$ 13.37	47.32 $\pm$ 14.15	31.035	<0.001
Environmental health	52.52 $\pm$ 11.10	49.92 $\pm$ 10.28	49.09 $\pm$ 10.62	18.552	<0.001
Total	54.72 $\pm$ 20.73	51.38 $\pm$ 20.19	49.30 $\pm$ 19.53	7.072	0.004

\*Repeated measures ANOVA

**Table 5)** Within-subject effects on quality of life over three times

Source	Type III sum of squares	df	Mean square	F	P	Partial eta squared
Time	Greenhouse-Geisser 3947.534	1.642	2404.485	38.182	0.0001	0.405
Time * Group	Greenhouse-Geisser 8441.727	1.642	5141.947	81.651	0.0001	0.593

**Table 6)** Bonferroni post hoc test to determine the effect of the intervention on the quality of life of cancer patients

Stage I	Stage J	Mean difference (I-J)	Std. error	P-value*
<b>Pre-test</b>	Post-test	-5.049	1.730	0.015
	Follow up	-12.917	1.509	0.0001
<b>Post-test</b>	Pre-test	5.049	1.730	0.015
	Follow up	-7.867	1.811	0.0001
<b>Follow up</b>	Pre-test	12.917	1.509	0.0001
	Post-test	7.867	1.811	0.0001

A significant difference was shown in the quality of life of cancer patients between the study times ( $p < 0.001$ ). Although the interaction effect of time and group was significant, using the post-hoc test, there was a significant difference in the quality of life of cancer patients between pre-intervention and follow-up time and between post-intervention and follow-up time ( $p < 0.001$ ). Moreover, there was no

significant difference between the QOL of cancer patients before and after the intervention (Tables 5 and 6).

## Discussion

The present study was conducted with the aim of determining the effect of Faye Glenn Abdellah's Nursing Theory on the quality of life in patients with cancer.

The results of this study indicated that there is no significant difference between the two groups in terms of demographic information, which is related to the homogeneity of individuals and sampling [26].

The results showed that the QOL of cancer patients before the intervention was low in the two groups, which is the result of the negative impact of the

cancer disease process on the QOL of people. In the study of Isikhan *et al.*, cancer patients had a low QOL [27]. Epstein *et al.*, also concluded that various cancers can affect the QOL of patients [28]. However, Rustøen *et al.* reported in their study that different types of cancer can have different effects on the QOL of cancer patients [29]. The QOL of cancer patients can influence the patient's perception of their ability to take care of themselves [30]. Given the importance and impact of the cancer disease process on the QOL of cancer patients, the focus should be on this area to enhance individual and care skills [31].

The results of the current study showed that the FGANT can have a good effect on improving the QOL of patients with cancer. Based on the results of this study, the QOL of patients in the intervention group increased after intervention in all aspects of the QOL, whereas patients' QOL decreased in the control group, who did not receive any intervention. Kerbaschi *et al.* concluded in their research that the self-care nursing model improves the quality of life of cancer patients undergoing chemotherapy [32].

The results showed that providing useful nursing care significantly improves the inappropriate QOL of cancer patients. The study by Jiang *et al.* showed that the self-care model significantly increases the QOL of cancer patients undergoing radiotherapy in the experimental group compared to the control group [33].

In the current study, the results showed that the QOL of patients in the intervention group increased in all dimensions of QOL after the intervention, while in the control group, the QOL score of patients decreased significantly after the intervention. Helou *et al.* showed in their research that the QOL of patients in the experimental group increased in all dimensions after the intervention [34]. Chirico *et al.* also achieved the same result in their study on cancer patients [35]. Coleman *et al.* found that self-care programs have an impact on the QOL of patients [36]. Also, Mulick *et al.* concluded that a phone call based- nursing care program can improve the different dimensions of the QOL of patients [37].

One of the limitations of this study was the reluctance of patients to participate in the study. Although the FGANT can improve the QOL of cancer patients, previous studies on the direct impact of this theory on the QOL of patients with cancer are not available; therefore, this is a new study. Another limitation of this study was the lack of available evidence, which forced the researcher to search carefully and scientifically for evidence. The third limitation of this research was the time interval of intervention, which should be considered longer. However, quality of life is a subjective concept; A more objective concept is thought to be used to conduct research on patients with cancer.

It is suggested that the findings of this research be used in the future to plan the care of cancer patients.

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It is also recommended to develop, implement and apply other practical research for the future in the field of quality of life of cancer patients.

According to the final result of this study, the role of nurses in determining the quality of life of cancer patients has a direct impact on the physical, mental, social and environmental levels. The lack of a care plan for chronic diseases such as cancer, which significantly affects the quality of life, can worsen the quality of life and the quality of care. It should be noted that not only the survival of cancer patients is important, but the concept of quality of life and quality of care is also the focus of nursing care. The findings of the present study provide a detailed report on the application of nursing theories in the clinic, as well as the results, showing that if theories are implemented in the nursing clinic, it can help to improve the quality of safe care for cancer patients. Nursing care, support, and training can help improve the QOL of cancer patients. Therefore, it is recommended to use programs and theories of nursing care such as FGANT for more effective care and to improve the quality of life of patients.

## Conclusion

After receiving effective nursing care based on FGANT, patients can achieve a high sense of self-care and improve their quality of life.

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**Ethical Permissions:** Ethical approval was obtained from the Ethics Committee of Save University of Medical Sciences (IR.SAVEHUMS.REC139517). All nurses were informed that their participation was voluntary and that the method used had no potential risks and that their identity would be completely confidential. Prior to participation, written informed consent forms were obtained from all participants.

**Conflicts of Interests:** The authors declare that there is no conflict of interest.

**Authors' Contribution:** Mahmoudi Z (First Author), Main Researcher/Methodologist/Introduction Writer/Discussion Writer (25%); Rahimi Dolat Abad F (Second Author), Assistant Researcher/Discussion Writer, Statistical Analyst (15%); Gholami L (Third Author), Assistant Researcher/Introduction Writer/Discussion Writer (10%); Bayat AH (Forth Author), Assistant Researcher/Introduction Writer/Discussion Writer (10%); Mirzaee MS (Fifth Author), Assistant Researcher/Discussion Writer (15%); Alishapour M (Sixth Author) Main Researcher/Introduction Writer/Methodologist/Discussion Writer (25%)

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