

Exploratory study on diagnosed cancers and quality of life of hospitalized patients

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Abstract

Context: Cancer is one of the main causes of death and disability throughout the world and leaves different effects on various dimensions of physical, psychological, sexual, social, and economic functions of human life.

Aims: The present study was conducted in 2017 with the aim to examine the quality of life of hospitalized patients with cancer in Arak, Iran.

Setting and Design: The present cross-sectional descriptive analytical study was conducted in Khonsari Hospital in Arak (From May to October 2017).

Materials and Methods: Three hundred and twenty cancer patients selected using census sampling method. Data were collected using demographic questionnaire and the standard quality of life assessment questionnaire European Organization for Research and Treatment of Cancer-Quality of Life Questionnaire-C30. Inclusion criteria were hospitalization, 3 months after diagnosis, and patients have no metastasis.

Statistical Analysis Used: Statistical tests such as Chi-square test, Fisher's exact test, and *t*-test were used. Significant level was considered as $\alpha = 0.5$.

Results: Types of cancer included 31.3% (100 patients) leukemia, 20.9% (67 patients) gastrointestinal cancer, 14.1% (45 patients) breast and ovarian cancer, 8.8% (28 patients) lymphoma, 6.3% (20 patients) lung cancer, 5.3% (17 patients) skeletal cancer, 4.4% (14 patients) renal cancer, 4.7% (15 patients) skin cancer, and 4.4% (14 patients) head-and-neck cancer. Mean quality of life of participating patients was 64.46 ± 14.48 . The highest (73.21 ± 21.57) and the lowest (55.4 ± 12.56) mean score of quality of life belonged to patients with head-and-neck cancer and skin cancer, respectively. In general, patients performed better in physical dimension and poorer in social dimension. Patients' quality of life was found significantly related to age, place of residence, marital status, and education level ($P = 0.0001$). Fatigue was the most common nagging symptom in both sexes, with slightly higher level in men compared to women ($P = 0.8$).

Conclusion: The mean quality of life of the patients was good. However, patients performed poorly in social dimension. To enhance their social performance, plans will, therefore, need to be developed and implemented.

Keywords: Cancer, Iran, Quality of life

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Received: 18 June 2018; **Accepted:** 03 October 2018; **Published:** 10 December 2018.

Access this article online	
Quick Response Code:	Website: www.jnmsjournal.org
	DOI: 10.4103/JNMS.JNMS_15_18

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How to cite this article: Hekmatpou D, Mehrabi F. Exploratory study on diagnosed cancers and quality of life of hospitalized patients. *J Nurs Midwifery Sci* 2018;5:109-15.

INTRODUCTION

Cancer is one of the main causes of disorders, death, and disability in the world. It is common and increasing and demands huge amount of efforts from the health-care system.^[1] The increasing prevalence of cancer in recent years and its effects on various physical, psychological, and social dimensions of human life have made cancer to be known as the main health problem of the century.^[2] After cardiovascular diseases and accidents, cancer is the third leading cause of death.^[3,4] Diagnosis of cancer is a highly unpleasant and unbelievable experience for any person. Cancer affects social, economic, and family life of the patient through psychological, psychiatric, and sexual functioning aspects.^[5]

Despite medical advances, development of cancer therapies, and increasing number of survivors, cancer is a unique disease in terms of the profound feelings of hopelessness and fear that it generates in patients.^[6] Cancer threatens autonomy and ability of the patient for participation in family and society, leads him toward feelings of incompetence and lack of confidence, and consequently affects his quality of life.^[7] Quality of life is nowadays part of the evaluation criteria for cancer treatment. Increasing attention to the concept of quality of life emphasizes the quality of life versus the quantity of life.

Cancer is not merely an event with a specific ending, but a permanently vague situation that is identified with its belated effects induced by the disease, treatment, and associated psychological problems.^[8]

The quality of life is a “feel good factor” that is induced by satisfaction or dissatisfaction with various aspects of life which are important to the individual. The quality of life included health, work, economic, social, psychological, degree of autonomy, and social development dimensions.^[9] Some studies conducted on cancer patients indicate that severity of illness and psychological pressures affect quality of life of patients.^[10] The results from GLOBOCAN (The new version of the International Agency for Research on Cancer’s online database, Global of Cancer = GLOBOCAN) (2012) showed that 14.1 million new patients were diagnosed with cancer and 8.2 million deaths were due to cancer.^[11]

The average quality of life in Iran is 42 which means good level, and various statistics are available in other parts of Iran.^[11]

A systematic review has reported quality of life of patients with cancer in the range of 17 up to 78 in Iran.^[12]

The subject of quality of life in different domains of health cares provided for cancer patients is important.^[13] Based on

the local authorities’ statements, Arak is an industrial with air polluted city with different population who come from throughout the country with various cultural values. The fact that cultural values are among decisive factors in people’s perception of quality of life is also important.^[14] Hence, it is clear that determining the quality of life in these patients can provide new solutions for health-care professionals (especially physicians and nurses) and help patients to independently be able to manage their livelihoods in critical and noncritical situations. In addition, the study has not been conducted to determine the quality of life of patients with cancer who are hospitalized. Therefore, the aim of this study was to determine the quality of life of cancer patients hospitalized in Ayatollah Khansari Hospital in Arak, 2017.

MATERIALS AND METHODS

The present cross-sectional analytical study was conducted on 320 cancer patients in Ayatollah Khansari Cancer Educational Hospital in Arak selected according to census sampling method from May to October 2017. During 6 months based on the admission time to the oncology and hematology wards, all new hospitalized patients ($n = 320$) were recruited. Inclusion criteria were hospitalization, at least 3 months after diagnosis, and patients have no metastasis.

The exclusion criteria included patient dissatisfaction with the company continue research, the fate of the patient’s family in the last 6 months, and outpatient patients or transfer to other departments such as the intensive care unit.

Detection of cancer was based on clinical tests, imaging, biopsy, and final diagnosis of the doctor.

Data were collected using the self-reporting standard quality of life assessment European Organization for Research and Treatment of Cancer-Quality of Life Questionnaire (EORTC-QLQ-C30) and demographic questionnaire. Demographic questionnaire dealt with personal and social details, including 10 questions on age, gender, marital status, number of children, occupation, education, duration of illness, and history of particular diseases and therapies. EORTC tool is a standard questionnaire.^[15]

The EORTC QLQ-C30 is a questionnaire developed to assess the quality of life of cancer patients. It is a copyrighted instrument, which has been translated and validated in over 100 languages and is used in more than 3000 studies worldwide. At present, QLQ-C30 Version 3.0 is the most recent version and should be used for all new studies. It is supplemented by disease-specific modules,

e.g., breast, lung, head and neck, esophageal, ovarian, gastric, cervical cancer, multiple myeloma, esophagogastric, prostate, colorectal liver metastases, and colorectal and brain cancer which are distributed by the EORTC Quality of Life Department.^[16]

EORTC contained 30 items in 5 functional scales, including physical state (5 items), role play (2 items), emotional (2 items), cognitive (4 items) and social (2 items) states, 9 domains of symptoms (fatigue, nausea, vomiting, pain, shortness of breath, sleep disturbance, loss of appetite, constipation, diarrhea, and financial problems), and the general domain of quality of life.

The questionnaire scoring according to which all scoring areas fall between 0 and 100.^[17]

Following analysis of data, quality of life was divided into three classes, including good (scores in excess of 75%), relatively good (50% to 75%), and poor (under 50%). Higher scores in functional domains and overall quality of life indicate better status of the patient but show greater number of symptoms and problems of the patient in the domain of symptoms.^[15-18] This questionnaire has been confirmed as valid and reliable by the EORTC.^[16]

Based on Farsi version, QLQ-C30 with confirmed face validity and with Cronbach's alpha reliability varying between 76% and 93% can be used in epidemiological and clinical cancer studies. The third version of this questionnaire was validated in Iran by Safaei *et al.*^[18,19]

After greetings with the patient and communicate with him/her and explaining study objectives, researcher obtained written consent of cancer patients. The questionnaire was completed by the researcher and patient at coordinated times with patients who have a better situation and the least interference with care provision. Demographic and medical information was collected from a patient's medical records, self-reported, and hospital information system. Voluntary participation in the study, confidentiality of data, and unlimited possibility to withdraw were fully explained to all participants. Data were analyzed using SPSS-21 (IBM) at significant level of $\alpha = 0.5$. Descriptive statistics of mean and standard deviation and frequency have been used. Statistical tests such as Chi-square test, Fisher's exact test, and *t*-test were used.

This study was approved in the Medical Ethics Committee of Arak University of Medical Sciences with code no: IR.ARAKMU.REC.1393.175.18.

RESULTS

Participants in the present study included 320 hospitalized cancer patients, with a mean age of 51.83 ± 16 years. The demographic characteristics of patients are shown in Table 1.

In assessing dimensions of gender-based quality of life, fatigue was the most common nagging symptom in both sexes, with higher prevalence in men than women. Statistical tests showed that significant relationships were found between mean overall quality of life of hospitalized patients and age, marital status, place of residence, and insurance but not gender [Table 1].

In this study, the most common leukemia and head-and-neck malignancy were the smallest cancer cases. No significant relationship was found between diagnosis of different types of cancer and various domains of quality of life ($P > 0.05$).

Table 1: Frequency of the hospitalized patients with cancer based on demographic variables in hospitalized patients, Arak, 2017

Variable	n (%)	Total QOL score, mean \pm SD	P
Sex			
Female	171 (53.4)	65.35 \pm 14.96	0.167
Male	149 (46.6)	63.44 \pm 13.90	
Marriage status			
Married	268 (83.7)	64.67 \pm 14.30	0.05
Single	52 (16.3)	63.25 \pm 16.54	
Nonhereditary cancers			
Yes	117 (36.6)	65.69 \pm 14.71	0.366
No	203 (93.4)	63.75 \pm 14.34	
Residency			
City	175 (54.7)	64.29 \pm 14.82	0.013
Village	145 (45.3)	64.67 \pm 14.12	
Job			
Homemakers	140 (43.8)	65.63 \pm 14.87	0.674
Clerk	24 (7.5)	62.95 \pm 15.68	
Worker	51 (15.9)	64.05 \pm 15.21	
Farmer	27 (17.8)	64.80 \pm 13.91	
Business	36 (11.3)	61.11 \pm 11.40	
Student	12 (8.3)	64.00 \pm 11.03	
Duration of diagnosis of cancer (years)			
Below 1	85 (26.6)	62.05 \pm 11.66	0.024
1	82 (25.6)	65.37 \pm 16.45	
1.5	61 (19.1)	67.18 \pm 13.91	
2	53 (16.6)	67.32 \pm 16.68	
3	10 (31.1)	50.10 \pm 8.14	
Above 3	29 (9.1)	62.96 \pm 10.93	
Literacy level			
Illiterate	79 (24.7)	63.08 \pm 14.03	0.051
Primary school	94 (29.4)	63.58 \pm 12.58	
Secondary school	69 (21.6)	65.27 \pm 16.15	
Diploma	59 (18.4)	63.74 \pm 15.82	
Graduated	19 (5.9)	10.51 \pm 73.84	
Insurance			
Is insured	297 (92.81)	66.91 \pm 14.65	0.47
Is not insured	23 (7.19)	64.27 \pm 14.48	

SD: Standard deviation, QOL: Quality of life

Score of quality of life of participating patients was 64.46 ± 14.48 . The highest and the lowest mean score of quality of life belonged to patients with head-and-neck cancer and skin cancer, respectively [Table 2].

Statistical tests showed that education was significantly related to physical ($P < 0.05$), role ($P < 0.05$), and social ($P < 0.003$) performances and diarrhea control ($P < 0.023$).

Table 2: Frequency of type of cancer and mean of quality of life of among hospitalized patients in Arak, Iran, 2017

Type of cancer	n (%)	Mean±SD	P
Leukemia	100 (31.1)	62.20±12.59	0.028
GI system	67 (20.9)	64.88±15.99	
Breast and ovarian	45 (14.1)	67.66±12.41	
Lymphatic system	28 (8.8)	63.35±12.05	
Lung	20 (6.3)	67.55±11.86	
Skeletal system	17 (5.3)	65.74±22.79	
Skin	15 (4.7)	55.40±12.56	
Urinary system	14 (4.4)	65.92±8.07	
Head and neck	14 (4.4)	73.21±21.57	

GI: Gastrointestinal, SD: Standard deviation

Table 3 shows the quality of life score in different functional areas based on the diagnosis of the type of cancer. There was no significant correlation between the type of cancer diagnosis and different areas of quality of life ($P > 0.05$). This means that the diagnosis of cancer type is not related to physical, emotional, cognitive, social, financial, or social function [Table 3].

DISCUSSION

In the present study, mean age of the 320 participating cancer patients was 51.83 years, while according to the World Health Organization report in 2014, mean age of cancer is 66 years,^[19] and this shows that younger age of cancer in Arak city is related to industrial area and its carcinogen pollutions. Mean overall quality of life score in these patients was 64.46 ± 14.48 , which is fairly good based on QLQ-C30 classification, and agrees with the other results^[20] and better compared to some previous studies.^[21-24] Researchers attribute this to the physical and mental support and care provided by families in Iran.^[22]

Table 3: The means of dimensions of quality of life of the hospitalized patients based on diagnosed cancer in Arak, 2017

Item	Diagnosis, mean±SD				
	GI cancer	Urinary system	Breast and ovarian	Skin	Skeletal system
Physical function	12.44±4.15	10.42±3.95	11.53±3.99	10.53±3.60	10.11±4.22
Role function	3.34±1.95	3.28±2.12	3.48±1.85	3.06±1.03	2.70±1.40
Emotional function	8.97±3.52	8.57±2.47	9.33±2.91	7.26±2.34	8.00±2.44
Cognitive function	3.43±1.44	3.21±1.57	3.95±1.58	2.93±1.22	2.94±0.74
Social function	2.65±1.28	3.42±1.74	2.68±1.04	3.33±2.16	6.05±9.80
Global health status	8.28±2.12	9.42±1.91	9.60±2.08	8.33±2.91	12.58±12.44
Fatigue	7.19±2.23	7.21±1.92	7.20±1.72	5.26±2.08	6.52±2.12
Nausea and vomiting	3.37±1.63	3.42±1.45	4.71±0.39	2.86±0.99	2.58±1.37
Pain	3.68±1.36	4.28±1.68	4.15±1.70	3.33±1.63	3.70±2.17
Dyspnea	1.43±0.70	1.57±0.75	1.40±0.53	2.10±0.70	1.23±0.43
Insomnia	1.92±1.09	2.00±0.877	2.088±1.29	1.2±0.414	2.11±1.45
Appetite loss	2.46±1.04	2.035±1.08	2.177±1.093	1.733±0.457	1.58±0.50
Constipation	1.74±0.95	2.00±0.67	1.73±0.65	1.66±0.72	1.70±0.84
Diarrhea	1.94±1.55	1.92±0.99	1.26±0.57	1.13±0.35	1.17±0.39
Financial difficulties	2.43±1.07	2.78±0.80	2.33±0.92	1.73±0.96	2.41±1.27

Item	Diagnosis, mean±SD			
	Head and neck	Lung	Lymphatic system Leukemia	Lymphatic system
Physical function	13.14±4.68	14.20±4.12	11.52±6.43	9.60±3.28
Role function	4.64±2.30	3.70±2.25	3.28±1.68	3.60±1.85
Emotional function	9.64±3.89	8.50±2.56	8.23±2.40	8.67±2.69
Cognitive function	4.21±1.76	3.50±1.31	3.39±1.26	3.96±1.42
Social function	3.78±1.92	2.80±1.85	3.17±1.58	3.25±1.53
Global health status	8.21±2.19	7.70±2.05	8.39±3.11	8.46±3.01
Fatigue	8.35±3.05	7.60±1.60	6.49±1.96	6.71±1.65
Nausea and vomiting	3.71±2.16	3.60±1.95	3.13±1.63	3.14±1.580
Pain	4.85±2.28	4.20±1.70	3.88±2.14	3.92±1.86
Dyspnea	1.50±0.65	1.21±1.03	1.44±0.75	1.67±0.61
Insomnia	2.42±1.34	2.30±1.03	2.010±1.02	2.14±0.84
Appetite loss	2.26±1.02	2.20±1.10	1.82±0.936	2.07±1.05
Constipation	2.071±0.73	1.50±0.68	1.76±0.78	2.035±1.07
Diarrhea	1.428±0.513	1.80±1.0	1.44±0.59	1.428±0.74
Financial difficulties	2.35±1.27	2.25±1.01	2.25±0.91	2.64±0.35

SD: Standard deviation

Accordingly, good-to-fairly good qualities of life were found in patients with head and neck, breast, lung, renal, skeletal, gastrointestinal (GI), lymphoma, leukemia, and skin cancers, respectively. This shows that greater attention should be paid to patients with skin cancer and leukemia. In a study in Iran, it is stated that quality of life was good among patients with breast, GI system, respiratory system, reproductive, and bone cancers.^[25]

Furthermore, in terms of GI cancer, patients with esophageal cancer have better quality of life and those with colorectal cancer have worse, and this agrees with the results obtained in other studies conducted in Iran.^[26,27] Colorectal cancer is the second leading cancer in men and the third in women worldwide and the fourth in Iran^[28,29] but claimed the second ranking in the present study in the city of Arak. The poor quality of life in patients with colorectal cancer compared to patients with other GI cancers can be explained by the use of colostomy, prolonged pain, loss of functional and social well-being, and severe weight loss.^[26]

In the present study, patients living in rural areas had a better quality of life than the city dwellers. This may be due to the fact that rural people are better supported in sickness by the family and community because of their cultural background and greater dependability on the family and friends.^[30] Moreover, the results from several studies indicate that rural people are less concerned with their own health problems and accept illness less than urban people do.^[31]

According to the assessment of different dimensions of quality of life, social dimension was showed the weakest performance, and this agrees with the results obtained in Iran.^[26,32] On the other hand, in the present study, the best performance was in the physical dimension, which disagrees with the results obtained by studies which found the highest performance in the cognitive dimension.^[26,33,34] In other studies, except for cognitive function, the social function of patients with cancer in Arak is similar to that of other cities in Iran but is weaker than Europe.^[11] This finding may be due to the lack of supportive care and relief care centers and the type of community culture template.

No significant relationship is observed between diagnosis of type of cancer and various dimensions of quality of life; this means that diagnosis of type of cancer has no relationship with physical, emotional, cognitive, role, social, or financial performance of the patient, which disagrees with the results obtained in other studies.^[35-38] Other findings in the present study included the significant

relationship of duration of diagnosis with cancer with physical, cognitive, and social performances, which concur with the results obtained in one study,^[39] but disagree with another study.^[40] This difference may be due to various factors including study unit, sampling method, and geographical region.

In the present study, a significant relationship was observed between quality of life and severity of fatigue, which concurs with the results obtained in other studies,^[41-46] whose results showed that patients with higher fatigue feelings had poorer quality of life. However, in one study, it is showed the opposite of this result. It is stated that there is no relation between fatigue and quality of life.^[39]

Fatigue is the most common abnormal symptom in both sexes, which is slightly higher in men in this study than in women. This unpleasant experience affects all aspects of their lives. Fatigue leads to poor compliance with cancer and can lead to mood disorders, anxiety and depression, and affect self-care and interpersonal communication. It also reduces one's ability to do homework, spending leisure time, and job responsibilities.^[47] Today, a study on the fatigue in cancer patients is considered as a global issue.^[48] The factors involved in it include individual experiences, treatment stages, and compliance with the disease.^[49]

Given the limited scope of this research, including its focus on a geographic region, it is likely that some results cannot be generalized to the whole country. Hence, it is necessary to do other studies with wider geographic scope and sample size.

CONCLUSION

The overall mean quality of life of patients with various types of cancers was good. However, patients performed poorly in social dimension. To enhance their social performance, plans will, therefore, need to be developed and implemented.

Conflicts of interest

There are no conflicts of interest.

Author contribution

DH and FM participated in the study design and carried out the experiments. They analyzed and interpreted the patient data. FM wrote the manuscript. DH critically revised the manuscript. All authors read and approved the final manuscript for submission.

Financial support and sponsorship

This work was supported by Arak University of Medical Sciences.

Acknowledgments

The authors gratefully acknowledge the Research council of Arak University of Medical Sciences for financial support. Special thanks to all colleagues and patients who took part in this study.

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