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# *The Relationship Between Family Functioning and Quality of Life in Patients With Gastric Cancer*

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## Abstract

***Background:*** Cancer can affect the quality of life of patients. Family support is essential in this disease.
***Objectives:*** This study aimed to determine the relationship between family functioning and quality of life in patients with gastric cancer.
***Methods:*** This cross-sectional study was performed on patients with gastric cancer at the Valiasr Medical Center in Zanjan, Iran, in 2018 using the census method. A specific standard questionnaire for the quality of life of cancer patients and a McMaster family assessment device were used to collect information. The descriptive analysis and Pearson's correlation coefficient were used to analyze data by SPSS software version16.
***Results*:** In total, 108 patients were assessed. The family functioning of the patients was assessed in the normal range and was partially good in all dimensions. The mean of general function (2.97 of 4) and affective responsiveness dimensions (2.31 of 4) was the weakest and the best, respectively. The overall quality of life, symptoms, and function [42.20 (2.65), 69.77 (7.23), 43.43 (7.38)] were at an unfavorable level. There was a significant inverse relationship (P<0.001) between the overall quality of life and the dimensions of family functioning: problem solving (r=-0.623), communication (r=-0.74), roles (r=-0.588), and behavior control (r=-0.718). A significant inverse relationship was also found between the overall quality of life and general family function (r=-0.577) (P<0.001).
***Conclusion:*** The study showed the association between quality of life and family function in patients with cancer. Improving family function in these patients using different methods is recommended.

***Keywords: family function, quality of life, gastric cancer***

## Introduction

Today, chronic diseases are an important part of health problems such that they impose high health costs on societies, even in developing countries [1]. Chronic diseases affect people's quality of life, and therefore, it is essential to measure the quality of life of patients to understand the effects of chronic diseases [2]. Cancer is one of the chronic diseases that severely affects people's quality of life [3]. The results of a 25-year systematic study of cancer registrations in 195 countries showed 17.5 million cases of cancer and 8.7 million mortality resulting from it in the world in 2015 [4]. According to the World Health

Organization, the number of mortality resulting from cancer in the world will increase by 45% (from 7.9 million to 11.5 million death) from 2007 to 2030. About 60% of all cancers occur annually in African, Asian, and South American countries [5]. In Iran, about 100,000 people have been diagnosed with cancer annually [6]. In this regard, it is estimated that cancer incidence (excluding non-melanoma skin cancer) will increase from 84,800 in 2012 to 129,700 in 2025, indicating a 35% increase in the incidence of this disease [7].

With a prevalence of 15.8%, gastric cancer is the second most common cancer after skin cancer, with a prevalence of 27.6% [6]. With increasing life expectancy, the incidence and mortality of this fatal disease are expected to increase rapidly in Iran [7].

Cancer is a vital stressor and reduces the quality of life by causing symptoms [8]. Therefore, in patients with cancer, it is important to pay attention to the quality of life [9]. Quality of life is a multidimensional concept that encompasses at least three physical, mental, and social functions, and this concept is affected by disease and treatment [10]. The quality of life review in cancer-related research has become an important variable related to clinical care and has been proposed as part of the evaluation criteria for cancer treatment [11]. In recent years, the quality of life assessment of patients with cancer has increased significantly, and improving these patients' daily functioning and quality of life has become a major goal [9]. However, the results of various studies indicate the unfavorable quality of life of these patients [3,9].

In addition to involving the patient, cancer also causes stress in other family members [12]. Today, with the promotion of cancer treatment methods, efforts are being made to take more care of patients at home, and family members take on more responsibility [13]. Accordingly, researchers believe that the fight against cancer is a challenge involving all family members [14]. The family is considered as the first source of support and care for a patient [15]. Family functioning assessment measures the family's ability to adapt and judge in different situations [16].

A study conducted by Modanloo et al. on children with cancer showed that the function of these families is not at the desired level [17]. Also, Atri et al. found the function of these families unfavorable in all functional dimensions [18]. Also, Rogers Sanchez et al. found that the quality of life of patients with cancer could be related to family functioning [19].

Due to the increasing incidence and prevalence of cancer, especially gastric cancer as the second most common cancer in Iran [20], it is crucial to pay attention to the concept of quality of life of these patients and its possible influencing factors, including the performance of their families. The reason is that the fight against cancer is a family challenge [14].

Studies conducted in this field are limited, and the performance of families varies from culture to culture [21]. Therefore, this study aimed to determine the relationship between family functioning and quality of life in patients with gastric cancer in Zanjan, Iran, in 2018.

## Methods

In this cross-sectional study, all patients with gastric cancer (N=127) who had a record and were referred to the Valiasr Hospital, Zanjan, for follow-up treatment were considered the study population. They were included in the study through the census. Data collection was performed in three months. Nineteen samples were excluded from the study due to lack of qualifications or accurate answers to the questionnaires, and finally, 108 samples completed the questionnaires. The inclusion criteria were the definitive diagnosis of gastric cancer, passing at least three months from diagnosis, and awareness of the patient and their family about the disease. Incomplete questionnaires were excluded from the analysis.

The respondents filled up both questionnaires after receiving elaborate explanations on the aim of the study and endorsing the informed consent either verbally or in a written form. The researcher filled up the questionnaires for illiterate or less literate participants (having a primary level of education). Data were collected in three months.

There were three data collection tools: a demographic information questionnaire, the European Organization for Research and Treatment of Cancer Quality of Life-Cancer 30, and the Family Assessment Device. The demographic information questionnaire included

questions on age, sex, education level, income, marital status, age at diagnosis, and duration of diagnosis.

**Specific standard questionnaire for quality of life of patients with cancer (EORTC QLQ-C30.V.3):**

This questionnaire was designed by the European Organization for Research and Treatment of Cancer [21] and is completed using the self-reporting method. It has 30 questions, of which 28 are scored based on a 4-point Likert scale, from 1 to 4 (at all, slightly, somewhat, and mostly), to examine the two functional and symptom domains. Two other questions are based on a 7-point Likert scale from 1 to 7, including very poor to excellent, to assess the overall quality of life. The functioning domain includes 15 questions about physical, role, emotional, cognitive, and social functioning. Also, 13 questions in nine scales are related to symptoms (fatigue, nausea and vomiting, dyspnea, sleep disorder, loss of appetite, pain, constipation, diarrhea, and financial problems). The sum of scores in each dimension is between 0 and 100. Thus, in the functioning and overall quality of life domains, a closer mean score to 100 leads to a more favorable quality of life. However, in the symptoms domain, a higher score signifies more symptoms and problems related to the disease and a more unfavorable quality of life [22]. After collecting the data, the items of the QLQ-C30 questionnaire were scored between 0-100 according to the EORTC questionnaire design organization guidelines [23]. Each domain has a separate score, and the scores of each domain are not added to the other domain. The data were divided into three categories: good (the score more than 75%), relatively good (50-75%), and poor (less than 50%) to determine the status of quality of life [24]. This tool has been translated into several languages and has been used in various countries. Montazeri (1999) and Safaei (2007) confirmed the validity and reliability of the questionnaire in the Iranian society to be 93% and 76%, respectively [25,26]. This study estimated the tools' reliability at 87% for FAD and 89% for EORTC QLQ-C30.V.3 using Cronbach's alpha coefficient. Also, as the questionnaires were standard, their face validity was determined.

**Family Assessment Device (FAD):** This standard 60-item questionnaire was developed by Epstein et al. (1963) to measure family functioning based on the McMaster model. The device measures family functioning in seven dimensions of problem-solving (six items), communication (seven items), roles (nine items), affective responsiveness (eight items), affective involvement (eight items), behavior control (nine items), and general functioning (13 items). Each item is designed based on a 4-point Likert scale (from strongly disagree to strongly agree) from 1 to 4, respectively. Since the number of questions in each dimension varies with other dimensions, scores are calculated in two ways: zero to hundred scale and zero to four scale. This tool has an answer key that makes the process of scoring and specifying the items of each subscale relatively easy [27]. In Yousefi's research (2012), the cut-off point for this tool was calculated to be 3.43 (out of 4). This means that if an individual's performance exceeds 3.43, it has dysfunction, and if it receives less than this score, it has a healthy performance [28]. In this questionnaire, lower scores signify better performance. After its development by Epstein et al. (1983), the questionnaire's validity and reliability were assessed after its distribution among a sample of 503 subjects. The alpha coefficients fell within the range of 72% to 92%, indicating high internal consistency [29]. The questionnaire was then standardized in Iran by Zadeh Mohammadi et al. (2006) after its distribution among 494 subjects. The reliability of the whole test, estimated by Cronbach's alpha, stood at 82%, and the alpha of the subscales ranged between 66% and 73%. Also, the test-retest reliability of the whole test was estimated to be between 57% and 80% [30]. This study used Cronbach's alpha coefficient to estimate the tool's reliability standing at 87%.

In this study, the face validity method was used to obtain the validity of the two quality of life questionnaires for cancer patients and assess family performance. For this purpose, the questionnaires were provided to 10 Zanjan and Rasht Nursing and Midwifery Schools faculty members, and corrective comments were applied.

The data were put into the SPSS software version 16. The Kolmogorov-Smirnov test was used to see whether the data distribution was normal. The researcher used descriptive and inferential

statistics, Pearson's correlation coefficient, to decide the degree of correlation. In this study, the P-value level of significance was also set at less than 0.05.

## Results

The results showed that the data were normally distributed, and the patients were in the age group of 31-70 years 51.92 (8.779), while the majority of the patients were 77 (71.3%) males and 85 (78.7%) married (Table 1).

***Table 1: The Distribution of the Absolute and Relative Frequencies of the Study Samples***

| Demographic | Information | Frequency | Percentage |
|---|---|---|---|
| **Age** | 31_40 | 12 | 11.1 |
| | 41_ 50 | 36 | 33.3 |
| | 51_ 60 | 39 | 36.1 |
| | 61_ 70 | 21 | 19.4 |
| **Mean ± Standard deviation** | 51.92± 8.77 | | |
| **Duration of diagnosis** | 2_6 | 11 | 10.1 |
| | 7_ 11 | 43 | 39.8 |
| | 12_ 16 | 37 | 34.2 |
| | 17_ 21 | 17 | 15.7 |
| **Mean ± Standard deviation** | 11.71±4.39 | | |
| **Gender** | Male | 77 | 71.3 |
| | female | 31 | 28.7 |
| **Marital status** | Single | 2 | 1.9 |
| | Married | 85 | 78.7 |
| | Widow | 15 | 13.9 |
| | divorced | 6 | 5.6 |
| **Residence** | City | 77 | 71.3 |
| | Village | 31 | 28.7 |
| **Housing** | Personal | 100 | 92.6 |
| | Rent | 8 | 7.4 |
| **Education level** | illiterate | 13 | 12.0 |
| | High school | 41 | 38.0 |
| | Diploma | 34 | 31.5 |
| | College education | 20 | 18.5 |
| **Income** | Low | 8 | 7.4 |
| | medium | 97 | 89.8 |
| | Much | 3 | 2.8 |

The mean scores of all the three domains of quality of life were in the poor range. The mean functioning and overall domain of quality of life were less than 50, indicating that the research samples in these dimensions were not in good condition. The participants also had a mean score above 50 in the symptom domain, which indicated the unfavorable condition of patients in this domain (Table 2).

***Table 2: The Mean and Standard Deviation of the Quality of Life Dimensions in the Study Samples***

| Quality of life dimensions | Mean | Standard Deviation | Confidence Interval of %95 | |
|---|---|---|---|---|
| | | | High | Low |
| **Functional** | 43.43 | 7.38 | 60.00 | 28.89 |
| **Symptoms** | 69.77 | 7.23 | 84.62 | 53.85 |
| **Overall** | 42.20 | 21.6 | 100.00 | 0.00 |

In the study of family functioning, the findings showed that the mean score of family functioning was in the normal range. The score of affective responsiveness was lower than the scores of the

other dimensions (in the range of 0-4, equal to 2.31), which indicated better family functioning in this dimension (Table 3).

***Table 3: The Mean and Standard Deviation of the Family Functioning Dimensions in the Study Samples***

| Dimensions | Mean | Standard Deviation | Mean in 0-4 Range | Confidence Interval of 0.95 | |
|---|---|---|---|---|---|
| | | | | upper limit | Low limit |
| **Problem Solving** | 16.68 | 2.7 | 2.78 | 17.20 | 16.16 |
| **Communications** | 18.56 | 2.74 | 2.65 | 19.08 | 18.04 |
| **Roles** | 24.69 | 2.72 | 2.74 | 25.21 | 24.17 |
| **Affective Responsiveness** | 18.48 | 2.76 | 2.31 | 19.00 | 17.95 |
| **Affective Involvement** | 19.51 | 2.77 | 2.43 | 20.04 | 18.98 |
| **Behavior control** | 24.59 | 2.87 | 2.73 | 25.14 | 24.04 |
| **General function** | 38.70 | 2.74 | 2.97 | 39.22 | 38.18 |

Regarding family functioning, there was a significant inverse relationship between the dimensions of problem-solving (r= -0.623 and P < 0.001), communication (r =-0.774 and P < 0.001), roles (r = -0.588 and P <0.001), behavior control (r= -0.718 and P< 0.001), and general functioning (r = -0.577 and P< 0.001) with the overall quality of life (Table 4).

***Table 4: The Relationship between the Family Functioning Dimensions and the Quality of Life Dimensions***

| Family functioning dimensions | Quality of life dimensions | | | | | |
|---|---|---|---|---|---|---|
| | Functional | | Symptoms | | Overall | |
| | P-value | r | P-value | r | P-value* | r |
| **Problem Solving** | 0.949 | -0.006 | 0.679 | 0.040 | < 0.001 | -0.623 |
| **Communications** | 0.205 | 0.123 | 0.020 | 0.223 | < 0.001 | -0.74 |
| **Roles** | 0.713 | -0.036 | 0.128 | 0.147 | < 0.001 | -0.588 |
| **Affective Responsiveness** | 0.801 | 0.025 | 0.657 | -0.043 | 0.241 | -0.114 |
| **Affective Involvement** | 0.112 | 0.154 | 0.095 | 0.161 | 0.080 | -0.169 |
| **Behavior control** | 0.217 | 0.120 | 0.051 | 0.188 | < 0.001 | -0.718 |
| **General function** | 0.931 | -0.008 | 0.280 | 0.105 | < 0.001 | -0.577 |

*Pearson's correlation coefficient

In FAD, lower scores indicate better performance. Therefore, the findings indicated that by improving family functioning in these dimensions, the overall quality of life improved in the patients. Also, the communication dimension of family functioning had a significant relationship with the domain of symptoms of quality of life (r=0.223 and P=0.020). It can be concluded that the symptoms of the disease intensify with decreasing family functioning in the communication dimension

## Discussion

This study aimed to determine the relationship between family functioning and quality of life in patients with gastric cancer. The results showed that the dimensions of family functioning, problem-solving, communication, roles, behavior control, and general function had a statistically significant relationship with the overall quality of life. The findings also indicated that the overall quality of life in the patients improved by improving family functioning. In this regard,

Sanchez (2011) showed a significant relationship between the quality of life of caregivers and family performance [31]. Ghamari et al. showed that disorder in the family function would follow the undesirable quality of life [32]. Chronic disease affects everyday life and causes a decline in quality of life. Proper family functioning plays a decisive role in a healthy life, especially when a family member needs more help to adapt to the environment [33]. It is worth noting that if the family can feel empowered in times of crisis, it can also support the patient and make it possible for the patient to improve the treatment process by increasing their quality of life. Therefore, improving family functioning can lead to improving the quality of life of patients.

The findings also revealed that all aspects of family functioning well fell within the expected normal range. These findings are consistent with the results of a study conducted in six European countries (Switzerland, Germany, Austria, Denmark, Britain, and Finland) on cancer patients and their children [34]. Based on the evidence, when experiencing an illness or crisis, if the family can maintain family links and function as a whole, it can gain the ability to withstand crisis [35]. The effect of diagnosing a threatening disease, such as cancer, on the functioning of families highly depends on the culture and social relations that govern society [36]. It seems that Iranian families' strategies to adapt to the disease have probably been effective and efficient due to the close ties between family members, helping them have a proper general functioning.

Also, in the present study, the mean score in the overall quality of life was poor. Consistent with the results of this study, Nayak et al. reported that the quality of life of most cancer patients was poor [3]. Also, Monfared et al. obtained similar results [37]. These findings underscore the need to pay more attention to the quality of life of these patients. In this study, the mean score in the functioning domain was poor. Consistent with the results of this study, Hatam et al. reported similar results in the physical functioning dimension [38]. In the present study, the mean score in the symptom domain of quality of life was unfavorable. The present study's findings are consistent with the findings of Safaee, showing the patient's decreased quality of life in case of experiencing more side effects and disturbing symptoms during treatment [26]. It can be stated that cancer and its treatment methods reduce patients' quality of life by causing annoying symptoms.

## Conclusion

The findings of this study showed that different aspects of patients' quality of life were at an unfavorable level. Therefore, it is recommended to pay double attention to these patients' quality of life and examine factors related to their current situation. Also, the study of the relationship between family performance and patients' quality of life showed a relationship between general family function and patients' overall quality of life. This means that improving the performance of families' patients with cancer improves their quality of life. Thus, improving the performance of these patients' families in various ways, including providing various education, social, and financial support for families, is recommended.

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## Limitations

Questionnaires were the instruments for collecting data in this study. Thus, it was expected to come across with limitations in terms of personal information delivery. Also, since the study population was limited to patients with gastric cancer in Zanjan, the study results could not be generalized.

## Conflict of interest

There is no conflict of interest in publishing this article.

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