

Investigating the Quality of Life of Patients with Cervical Cancer in Iran

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ABSTRACT

Background & Objective: Cervical cancer is one of the most common cancers in women. One of the most important indicators that deal with all aspects of the patients' health is the Health-related quality of life (QOL). In this study, the QOL of women with cervical cancer in Iran was investigated.

Materials & Methods: The present cross-sectional study examined the QOL of 139 patients with cervical cancer referred to Imam Khomeini hospital, affiliated with the Tehran University of Medical Sciences. For this study, a specific questionnaire of QOL in patients with cervical cancer was used. To determine the predictors of cervical cancer patients, the QOL linear regression model was used.

Results: Findings of this study showed that the total score of QOL of patients was 20.97 ± 1.29 . Moreover, in the regression model, a significant relationship was observed between the type of treatment and patients' QOL scores and those patients who had neoadjuvant therapy plus surgery ($\beta = -17.45$, $P = 0.02$) and those who received brachytherapy ($\beta = -14.86$ and $P = 0.09$) had a significantly lower QOL score.

Conclusion: Overall, the QOL of people with cervical cancer was moderate. Implementing educational programs for service providers and choosing the appropriate type of treatment according to the stage of the disease and the patient's age can help control this type of disease and its complications and improve the QOL of patients.

Keywords: Cancer, Cervical cancer, Females, Iran, Quality of Life



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Introduction

Cervical cancer occurs when cervical cells multiply rapidly. This type of cancer occurs in the cervix, the lower part of the uterus, where the uterus connects to the vagina (1). Failure to diagnose or treat this type of cancer can lead to the patient's death. However, there are appropriate strategies, such as the human papillomavirus vaccine, to control this type of cancer (2, 3). According to the World Health Organization reports, cervical cancer was the fourth most common cancer in women in 2018. About 99% of cervical cancers are caused by a virus called human papillomavirus (HPV). Histopathologically, 69% of cervical cancers contain squamous carcinoma cells, and 25% of them contain adenocarcinoma cells (4). Cervical cancer is most commonly diagnosed in women between the ages of 35 and 44, and the average age of diagnosis for this type of cancer in the United States is 50 years old. Early detection of this type of cancer is very easy and very important; Even in the United States, however, more than 20 percent of cases

are diagnosed over the age of 65, when the cancer is advanced (5, 6).

Over the past decade, various indicators have been calculated for patients' health output. Indicators such as death rate, survival rate, or pain rate are among these indicators (3). However, one of the most important indicators that deal with all aspects of the patients' health is the Health-related quality of life. Health-related QOL seeks to examine all aspects of health, including physical and mental health. Over the past two decades, mental status and QOL have been the most important issues in clinical research and have been emphasized as one of the effective aspects of patient care. Chronic diseases such as cancer are among the disorders that severely affect people's health and consequently their QOL (7, 8). Diagnosing cancer is a very unpleasant and unbelievable experience for any person. Cancer affects the patient's economic, social, and family life in terms of mental, psychological, and sexual function (9). Cancer severely affects a person's

mental health which is not seen in calculating indicators such as survival.

On the other hand, according to the stage of cervical cancer, different treatments can be selected for patients, including various surgical methods, chemoradiation, or a combination of these methods. Each of these methods may have different effects on QOL and the survival of patients (10). Due to the importance of the subject, this study was conducted to investigate the QOL of patients with cervical cancer and determine its relationship with different treatment modalities.

Methods

The present study is a descriptive cross-sectional study examining the QOL in cervical cancer patients. In this study, 139 patients with cervical cancer attended who were referred to Imam Khomeini hospital, affiliated with the Tehran University of Medical Sciences. The Ethics Committee of Tehran University Medical of Sciences approved the study (IR.TUMS.IKHC.REC.1399.108). After obtaining informed consent from patients, a questionnaire was provided, and information was completed. The questionnaire used in this study was a specific QOL questionnaire for patients with cervical cancer called Cervix 24. This questionnaire consists of 24 questions that have the dimensions of experiencing symptoms (including 11 questions), mental image (including 3 questions), vaginal/sexual dysfunction (including 4 questions), and 6 one-word scales that were measured on the Likert Scale. For all questions except questions related to sexual activity and sexual pleasure, a higher score indicates that there are more problems for that person. The score range after each questionnaire was calculated and adjusted between zero and one hundred (11). For example, the experience of the symptoms of

the disease indicates the history of experience of each of the symptoms of the disease and the number of times patients have experienced it. The mental image dimension indicates the type of mental image the patient has of her disease and vaginal disorders and indicates the frequency and types of common vaginal disorders in patients. The sexual status also indicates the amount and quality of sexual intercourse. In order to calculate the total score, the total scores of each dimension were added together and divided into 4 dimensions to obtain a score between zero and 100. The reliability and validity of this questionnaire had previously been assessed by Turkzahrani et al. in Zanjan city. Internal consistency and retest were used to determine the reliability of the QOL questionnaire. Cronbach's alpha coefficient of 0.74 was confirmed. In addition, the result of the retest test was 0.88. In addition to quality-of-life questions, the patient was asked questions about the demographic status, including age, sex, occupation, date of diagnosis and treatment, type of treatment, menopausal status, and the patient's hormone status. In order to analyze the data, descriptive statistics, including mean and standard deviation, and analytical statistics, including regression model were used. Data were analyzed using Stata version 14 software. The significant level was considered less than 0.05.

Results

Table 1 shows the descriptive findings of the study. As shown in the table, 24 (25.5%) of the 94 people who responded to their education status were illiterate, and 16 (17%) had an academic degree. Moreover, out of 120 people who answered their occupation status, 102 (85%) were housewives. Regarding marital status, 30 people were single (25%), and 86 people lived with their families (71.7%).

Table 1. Descriptive statistics of the study population (n=139)

Variable	Frequency	Percent	
Education	Illiterate	24	25.5
	High school	28	29.8
	Diploma	26	27.7
	University	16	17.0
	Total respondents	94	100.0
Occupational status	Unknown: 45		
	Housewife	102	85.0
	Employee	8	6.7
	Free	10	8.3
	Total respondents	120	100.0
Marital status	Unknown: 19		
	Single	30	25.0
	With family	86	71.7
	With partner	4	3.3
	Total respondents	120	100.0
	Unknown: 19		

[Table 2](#) shows the clinical characteristics of the patients. As shown, most patients were in stage 2 of the disease (50 patients, (39%)). In terms of pathology, 94 patients (71%) were SCC; in terms of the type of treatment, chemoradiation treatment with 51 patients

(37%), and in terms of type, menopause with 50 people (65%) had the highest frequency. In addition, 71 patients (95%) of the 74 patients who answered the question did not use HRT, and 65 patients (46.8%) used topical hormones.

Table 2. Clinical findings of the studied patients

Variable	Dimension	Frequency	Percentage	Variable	Dimension	Frequency	Percentage
Figo staging	No Stage	13	10.0	Menopausal status	Pre-menopause	18.0	23.0
	III	23	16.0		Menopause	50.0	65.0
	II	50	39.0		Menopause seeking treatment	7.0	9.0
	I	41	32.0		Unknown	1.0	1.0
	Total	127	100.0		Total	76.0	100.0
Type of pathology	SCC	94	71.0	HRT Status	Yes	3.0	2.0
	Adenocarcinoma	27	20.0		No	71.0	95.0
	Other	10	6.1		Total	74.0	100.0
	Total	131	100.0		Yes	65.0	46.8
Type of treatment	Radical Hysterectomy	16	11.0	Taking topical hormones	No	74.0	53.2
	Neoadjuvant + Surgery	6	4.0		Total	139.0	100.0
	Chemotherapy	2	1.0		Yes	11.0	7.9
	Chemoradiation	51	37.0		No	128.0	92.1
	Brachytherapy	3	2.0		Total	139.0	100.0
	Hybrid	58	42.6	Death status	Yes	11.0	7.9
					No	128.0	92.1
				Total	139.0	100.0	

SCC: Squamous cell carcinoma, HRT: Hormone Replacement Therapy

[Table 3](#) shows the findings of the study on the dimensions and overall score of the QOL for patients with cervical cancer. As shown in the table, the next score for experiencing symptoms is 15.45 ± 1.48 ; the next score of the mental image has a mean of 22.03 ± 2.12 , the mean score of the dimension of vaginal

disorders is equal to 15.11 ± 2.54 , and the mean score of the next dimension of sexual status is equal to 31.2 ± 3.67 . In addition, the total score of patients' QOL was 20.97 ± 1.29 . As shown in the table, patients' sexual status is more inappropriate than other dimensions.

Table 3. Dimensions and an overall score of the QOL Questionnaire for patients with cervical cancer

Dimension	Mean	Standard Deviation	Lower Limit	Upper Limit
Experience the symptoms of the disease	15.46	1.49	12.48	18.44
Mental image	22.03	2.12	17.78	26.28
Vaginal disorders	15.11	2.54	10.02	20.21
Sexual status	31.28	3.68	23.92	38.65
Total score	20.97	1.29	18.37	23.57

[Table 4](#) shows the relationship between different variables and patients' quality of life. As shown in the table, except for the variable of treatment type, none of the variables had a significant relationship with the QOL of patients. Regarding the type of treatment, those

patients who had neoadjuvant therapy plus surgery ($\beta = -17.45$, $P = 0.02$) and those who received brachytherapy ($\beta = -14.86$ and $P = 0.09$) had a significantly lower QOL score.

Table 4. Predictors of Cervix cancer patients' quality of life

Variable	Coefficient	Standard Deviation	Significance Level	Lower Limit	Upper Limit
Age	-0.25	0.18	0.17	-0.60	0.11
Type of Pathology			Other (Reference)		
ScC	-6.64	4.20	0.12	-15.11	1.83
Adenocarcinoma	-16.44	10.14	0.11	-36.88	4.01
Menopausal Status			Pre-Menopause (Reference)		
Menopause	2.58	4.066	0.53	-5.62	10.78
Menopause Seeking Treatment	-0.9	5.213	0.86	-11.41	9.62
Type of Radical Hysterectomy Treatment (Reference)					
Neoadjuvant + surgery	-17.45	6.97	0.02	-31.51	-3.40
Chemotherapy	2.38	11.09	0.83	-19.98	24.73
Chemoradiation	-7.08	5.09	0.17	-17.35	3.19
Brachytherapy	-14.86	8.55	0.09	-32.1	2.38
Hybrid	-5.45	5.00	0.28	-15.53	4.64

SCC: Squamous cell carcinoma

Discussion

The present study showed that health-related QOL status in patients with cervical cancer is moderate. In this regard, the sexual status of patients was more inappropriate than other dimensions and that the type of treatment affected the QOL of patients so that neoadjuvant treatment and surgery were significantly better than other methods. In a systematic review study conducted by Wiltnik et al. in 2020, a similar study found that the sexual status of these patients was more unsatisfactory in terms of QOL than other indicators. However, the findings showed that the amount of sexual activity increased with the increase of mental and physical therapies one or more years after treatment (12). Another study conducted in India by Rahman *et al.* confirmed the effects of treatment on the QOL of patients with cervical cancer. In this study, a statistically significant improvement was observed in the participants' physical, emotional, pain, fatigue, and vaginal symptoms (13). However, no significant improvement in social, cognitive, or role function, body image, sexual activity, or sexual pleasure was observed. Vaginal and sexual function also deteriorated significantly (13). Another study by Misan in South Korea found that the stage of cancer, distress symptoms, mood disorders, social support (family), and optimistic outlook on life were factors affecting the QOL of patients with cervical cancer (2). In a study conducted by Tork Zahrani et al. in Iran, it was found that the physical dimension is more affected by cervical cancer than the other dimensions (14). In addition, in another study by this researcher and colleagues, the QOL scores of patients with cervical cancer were calculated as moderate; also, no relationship was observed between the QOL of individuals in physical,

psychological, and social dimensions with their social support (15). Unlike the present study, which did not show a significant relationship between demographic variables and patients' quality of life, in Rahman's study in India, multivariate analysis showed that young women and those with higher education had better QOL (13). In other studies, household income was a predictor of QOL in these patients (16-19).

In the present study, neoadjuvant treatment and surgery were significantly better than other methods. Therefore, patients who are properly selected for neoadjuvant treatment and surgery may experience a better QOL without the need for adjuvant radiotherapy. It will be very important in young women with cervical cancer. Another study in the United States suggested that gynecological oncologists should recommend open radical hysterectomy for patients with early-stage cervical cancer and that minimally invasive procedures are not recommended (20). In another study in India, the QOL of patients with cervical cancer improved after concomitant use of radiotherapy and chemotherapy (21). The effect of radiotherapy on improving QOL in cancer patients has been proven in previous studies (22-24).

Given that health personnel in the community can provide valuable services to solve clients' problems, it is necessary to provide the necessary training on QOL and its effective factors in patients with newly diagnosed cancer in university courses. In addition, the managers of national macro programs in the field of health, treatment, and medical education, by establishing health centers in different regions of the country, can study different aspects of patients' QOL

and provide the necessary services to improve their quality of life.

The present study had some limitations. The first limitation is related to the relatively small sample size and considerable missing data for some variables, which can affect the findings' generalizability. Secondly, although our questioners were females, however, there may still be avoided answering of sexual questions due to the shame and shyness of many women.

Conclusion

Overall, the QOL of people with cervical cancer was moderate. Implementing educational programs for service providers and choosing the appropriate type of treatment according to the stage of the disease and the patient's age can help control this type of disease and its complications and improve the QOL of patients.

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Authors' Contributions

MMG, ASM, and SS developed the original idea and the protocol, abstracted, and prepared the manuscript. FR and RM participated in the study design and analyzed the data. MMG, SA, and SS contributed to the data gathering. All authors read and approved the final manuscript.

Conflict of Interest

The authors declared no conflict of interests.

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