Original Research Article

Quality of life among cancer patients approaching healthcare facilities in United Arab Emirates

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ABSTRACT

Background: The main aim of the study was to compare the quality of life (QOL) of cancer patients and healthy adults according to different domains.

Methods: The study was conducted in Gulf medical university, Tawam hospital, Al Ain and Thumbay hospital, Ajman from March 2018 until January 2019. In addition, our study was a cross sectional study that included 250 cancer patients and 250 healthy adults. The WHOQOL-BREF questionnaire and a self-administered questionnaire were used. The research was conducted in Tawam hospital, Gulf medical university and Thumbay hospitals/clinics over a period of 9 months. SPSS version 24 was used for analysis. F test and t test were used to assess the difference between mean QOL levels in various groups.

Results: The highest mean score for healthy subjects accounts for the social domain followed by physical, then psychological and the lowest is the environmental domain with values of (73.9, 70.7, 70.3 and 68.9 respectively). While the highest mean score of QOL for cancer patients was related to psychological domain followed by environmental, then social and lastly the lowest domain is associated with physical accounting for values of (66.6, 66.5, 66.2 and 60.6 accordingly). Over all the mean scores regarding all the domains of healthy adults with is higher than in cancer patients.

Conclusions: Healthy adults had higher mean QOL score levels than cancer patients. Moreover, cancer patients have a 1.65-fold risk of having poor QOL. It has been concluded that the highest mean score for healthy subjects accounts for the social domain (73.9) followed by physical (70.7), then psychological (70.3) and the lowest is the environmental domain (68.9).

Keywords: Quality of life, Cancer patient, Healthy adults

INTRODUCTION

According to WHO, QOL is defined as individual perception of life, values, objectives, standards and interests in the framework of culture.[1]

Cancer is the second leading cause of death. Almost 14.1 million new cases were diagnosed in 2012. Cancer was responsible for 8.8 million deaths in 2015.[2]

Cancer is followed by a set of changes that will inevitably change the way of life of the patient socially as well as physically.[3] Not only the symptoms of cancer itself alter the life of the patient, toxicities and adverse effects of

therapy play an undeniable role too.[4] Maintaining adequate QOL and comfort is one of the main pillars for a desirable treatment regimen for cancer patients all over the globe.[5]

Different instrument is available to assess the QoL which include general questionnaires and cancer-specific questionnaires.[6] The WHOQOL-BREF questionnaire is a validated questionnaire that is used by many researchers.[7]

QoL of cancer patients is assessed based on domains, the frequent domains used to measure are physical, social, psychological and environmental.[8] The physical domain is utilized to determine patients overall physical activity. Recent studies have shown that this domain is directly associated with the social domain which includes their personal relationships and social support but not related to the environmental domain reference.

QoL may be a consequence to the effect of a disease and its treatment. QoL in cancer patients is a very important aspect therefore it's important to study factors affecting it.

Cancer has been an arising issue in the UAE for the past years. According to a research done by the government of UAE in 2012, it was stated that cancer was the 3rd leading cause of death in the capital. In addition to that, cancer cases reach up to 4,500 cases annually.[18]

QoL is an increasingly important assessment used to evaluate health status in all cancer patients.

Although it is an important issue, a few research emerged discussing QoL in cancer patients in the UAE and the region. Hence, it is an important matter to be approached.

Our research will assess the QoL of cancer patients. The results collected would point to some important aspects in the management of psychosocial support that can enhance the QOL without interfering with the treatment plan.

Detect acceptable quality of life values that would indicate good social support and perceived effective treatment regimen.

Objectives

The objective of the study was to compare the QoL of cancer patients and healthy adults according to different domains and to determine the association between selected epidemiological and demographic factors and QoL.

METHODS

Research design

This research was a cross-sectional study.

Study population

Adult cancer patients and healthy adults in UAE were the study population.

Sites and duration

Sites

The sites where the study took place were Gulf medical university, Tawam hospital and Thumbay hospital, Ajman.

Duration

The study duration was from March 2018 until Jan 2019.

Inclusion criteria

Cancer patients

Both genders, aged 20 years with any type of cancer approaching Tawam hospital during period of data collection and who have accepted to sign inform consent were included in the study.

Healthy adults group

Both genders, aged 20 years, with no personal history of chronic diseases or cancer were included from the study. Faculty, staff and students in Thumbay hospitals/clinics and GMU who are available at time of data collection were also included. People who accepted to sign inform consent were included in the study

Exclusion criteria

Cancer patients

Age <20 years and cancer patients approaching other hospital during period of data collection were excluded from the study.

Healthy adults

Age <20 years ans not in Thumbay clinics/hospital and GMU were excluded from the study.

Sample size

A formula was used to calculate the sample size according to the assumption that 82% of the participants will have low QoL based on another study from India.[14]

Sample size N=$\frac{Z^2 Pq}{L^2}$,

N=$\frac{3.84 \times 0.82 \times 0.18}{(0.05)^2}$=226,

Add 10% for non-response=23,

 N=250.

We selected 250 cancer patients. For the comparative sample group, we selected similar number of healthy adults. Convenient sampling strategy will be adopted to recruit the participants.

Study instruments and validity procedure

Two questionnaires will be used in this study

WHOQOL-BREF

It's a quality of life questionnaire that includes four domains. They are physical health, psychological, social relationships and environment domains and it is a valid and reliable tool.[10] Self-administered questionnaire was prepared by the research team and included information about socio-demography, health related questions, disease related questions, psychosocial related questions. The questionnaire was validated by expert in Tawam hospital. Pilot study was done later to check clarity of questions and time required for filling the questionnaire.

Ethical issues

The study protocol was sent to IRB, GMU to get approval before starting the research. Approval from Tawam hospital (ethics committee, SEHA) were obtained before recruiting the participants. Official approval from the management in GMU and Thumbay hospital/clinics was attained. Informed consent was obtained from participants before enrolment and confidentiality of information was insured. Privacy of information was respected and insured by providing specific site of data collection. This research did not cause any physical or psychological risk to the participants.

Methodology

After getting approval from Tawam hospital and Gulf medical university, we first gained signed inform consent from the participants. Then distributed the two questionnaire included in this study to the subjects. The questionnaires were then collected ensuring completion of the questions.

Data analysis

SPSS version 24 was used to analyze the data. The data was presented in form of tables and text. F test and t test were used to assess the mean QoL scores differences between groups.

RESULTS

The study included 250 healthy participants, the highest percentage of participants was found in both ages between 25-29 and 30-34, (23.4%). With regards to gender, the percentage of females was slightly higher than males, (51.2% and 48.8% respectively). In education the higher percentage was found in participants with an undergraduate degree (56.8%) and the lowest percentage was found in participants with a high school level of education (9.2%). The number of participants that receive support is slightly higher (52. 8%) than those who do not (47.2%). Majority of healthy participants were satisfied/very satisfied with their health (75.3%), 8.5% of patients were dissatisfied, 1.2% were very dissatisfied and 15% were neither satisfied nor dissatisfied.

The highest mean QoL was found in the age group 35-39 (102.5) and the lowest mean was found between age groups 20-24 (96.4). Higher mean QoL total score value was in higher education level participants. According to marital status the mean QoL total score value was higher for ever married participants and difference between mean values was significant. According to health insurance, higher mean QoL total score value was found among participants who have health insurance. Based on receiving support, higher mean QoL total score value was found among participants who were receiving support.

Cancer subjects

Questionnaires were distributed among cancer patients and the data collected has shown that most of the participants were between the ages of 41-50, the majority of them were female and were married at some point and have either 3 or 4 children. The majority of the cancer patients receive support.

The highest mean QoL total was found in the age group 40 and less (96.57) and the lowest mean QoL total was found between age groups 71 and more (90.93).

According to gender, it was found that the mean total is higher in females (95.7) than males (88.9). According to marital status the mean total for patients ever married was lower (93.9) than the single patients (97.7).

With regards to support the mean total for people who receive support is lower (92.8) than people who don't (96.4). According to metastasis the mean total for people who have metastasis is lower (90.5) than those who don't (97.3). Whereas those with other diseases the mean total is lower (91.8) than those who don't (95.9). As for the duration of cancer the mean total for patients with cancer for 6 months or less is the lowest (91.1).

The highest mean score for healthy subjects accounts for the social domain followed by physical, then psychological and the lowest is the environmental domain with values of (73.9, 70.7, 70.3 and 68.9 respectively).

Table 1: Mean value for QoL of healthy participants and mean difference.

Variables	Sub-categories	Number	Mean total	Standard deviation	Confidence interval	t	F	P
Age (in years)	20-24	37	96.4	13.5				
	25-29	39	97.9	13.1				
	30-34	52	99.8	11.7			1.3	0.3
	40+	46	100.8	13.1				
	35-39	33	102.5	11.9				
Gender	Male	103	99.5	11.7	(-3.4)-(-3.6)	0.05		1.0
	Female	104	99.45	13.7				
Education level	School	16	96.4	12.3				
	University	114	97.6	12.8			4.6	0.01
	Postgraduate	77	102.9	11.9				
Marital status	Single	69	96.9	12.5	(-7.5)-(-0.2)	-2.1		0.04
	Ever married	137	100.8	12.7				
Having children	Yes	106	101.7	12.8	(-.6)-(9.2)	1.7		0.8
	No	31	97.5	11.7				
Number of children	3+	130	98.0	12.8				
	2	39	100.4	10.0			3.3	0.04
	1	38	103.8	13.8				
Having health insurance	Yes	139	100.2	12.6	(-1.7)-(5.7)	1.1		0.3
	No	68	98.1	12.8				
Coverage of health insurance	Full	36	105.0	13.7	(1.6)-(11.8)	2.6		0.01
	Partial	99	98.3	11.7				
Smoking	Yes	26	95.5	13.2	(-10.1)-(1.1)	-1.6		0.4
	No	181	100.1	12.5				
Consumption of alcohol	Yes	28	102.5	11.8	(-1.4)-(8.4)	1.5		0.2
	No	178	99.0	12.8				
Sleep (hours/day)	Less than 7	71	96.1	15.04				
	7-9	117	101.4	11.1		4.03		0.02
	More than 9	19	100.3	09.8				
How often do you exercise	Always	32	99.1	13.1				
	Occasionally	108	100.5	13.1	(-7.2)-(3.6)	-0.7		0.5
	Rarely	62	97.4					
BMI	Underweight	6	96.3	9.0				
	Normal	77	98.2	13.5			1.08	0.3
	Overweight and obese	106	100.7	11.6				
Appetite	Very good	49	103.9	12.3				
	Good	147	98.4	12.4	(1.4)-(9.5)	2.7		0.009
	Poor and very poor	11	94.8	13.7				

Table 2: Mean value for QoL of cancer participants and mean difference.

Variables	Sub-categories	Number	Mean total	Standard deviation	Confidence interval	F	t	P
Age	40	30	96.6	15.3				
	41-50	32	96.1	12.6				
	51-60	23	93.9	15.9		0.594		0.668
	61-70	46	92.7	16.3				
	71+	15	90.9	18.3				
Gender	Male	31	88.9	16.7	(-13.4)-(-0.1)		-2.052	0.260
	Female	113	95.7	14.5				

Continued.

Variables	Sub-categories	Number	Mean total	Standard deviation	Confidence interval	F	t	P
Education level	School	53	92.1	17.0		1.168		0.314
	University	78	95.0	14.0				
	Postgraduate	15	98.2	12.9				
Marital status	Single	7	97.7	15.4	(-10.4)-(18.1)		0.660	0.904
	Ever married	137	93.9	15.1				
Having children	Yes	130	93.5	14.8	(-22.4)-(3.6)		-1.645	0.743
	No	9	102.9	16.8				
Number of children	1-2	45	93.3	13.6		0.281		0.756
	3-4	47	93.7	15.8				
	5+	54	95.4	15.8				
Having health insurance	Yes	107	94.8	14.9	(-3.5)-(8.2)	0.790	0.695	
	No	38	92.5	15.7				
Coverage of health insurance	Full	58	95.3	15.0	(-6.9)-(7.1)		0.030	0.711
	Partial	26	95.1	14.7				
Smoking	Yes	19	89.6	13.1	(-12.1)-(1.4)		1.435	0.433
	No	127	94.9	15.3				
Alcohol consumption	Yes	2	104.0	09.9	(-68.3)-(88.1)		1.391	0.404
	No	144	94.1	15.1				
Sleeping hours/day	Less than 7	52	90.4	14.0		2.776		0.066
	7-9	63	95.8	15.3				
	More than 9	30	97.5	15.6				
Exercise	Always	22	99.5	15.4		2.019		0.137
	Occasionally	53	94.6	15.0				
	Rarely	68	92.2	14.8				
BMI	Normal and underweight	46	91.9	16.1	(-9.4)-(1.8)		-1.356	0.353
	Overweight and obese	90	95.7	14.2				
Appetite	Very Poor	7	86.3	18.1		7.715		<0.0001
	Poor	21	85.0	17.0				
	Good	80	93.5	13.6				
	Very good	35	102.4	12.2				

Table 3: Mean value for QoL of cancer participants by types of cancer.

Variables	Sub-categories	Number	Mean total	Standard deviation	P value	F
Types of cancer	Breast	73	97.4	13.2	0.040	2.185
	Colorectal	15	91.5	15.6		
	Lung	10	87.9	17.7		
	Uterus	10	91.8	16.7		
	Lymphoma	7	100.7	14.7		
	Leukemia	5	90.6	15.1		
	Ovary	5	101.6	05.4		
	Others	10	83.8	12.3		

Table 4: Mean value for QoL of cancer participants by duration of cancer.

Variables	Sub-categories	Number	Mean total	Standard deviation	P value	F
Duration of cancer	6 months or less	26	91.1	13.4	0.778	0.538
	7-12 months	39	96.8	15.9		
	13-18 months	6	94.7	14.2		
	19-24 months	16	93.4	14.0		
	25-30 months	2	92.0	24.0		
	31-36 months	13	97.8	12.4		
	More than 3 years	44	93.1	16.5		

Table 5: Comparing domains between healthy and cancer participants.

Domains	Participants	Number	Mean Score	Standard Deviation	Confidence Interval	t value	P value
Physical	Healthy	249	70.7	13.4	(7.096)-(13.13)	6.59	<0.0001
	Cancer	244	60.6	19.9			
Psychological	Healthy	250	70.3	14.3	(0.93)-(6.58)	2.61	0.009
	Cancer	245	66.6	17.5			
Social	Healthy	250	73.9	18.6	(4.13)-(11.11)	4.29	<0.0001
	Cancer	239	66.2	20.5			
Environmental	Healthy	207	68.9	14.7	(-0.28)-(5.04)	1.76	0.079
	Cancer	248	66.5	15.5			

While the highest mean score of QoL for cancer patients was related to psychological domain followed by environmental then social and lastly the lowest domain is associated with physical accounting for values of (66.6, 66.5, 66.2 and 60.6 accordingly). Over all the mean scores regarding all the domains of healthy adults with is higher than in cancer patients.

DISCUSSION

The QoL for healthy adults

Highest QoL score was found in the age group 35-39. Based on a study in US revealed that healthy subjects who are 65 years and older have higher QoL.[1] A study in Malaysia demonstrated higher score in men. Our research showed significant difference between genders as males had higher score.[2] A research in Nigeria revealed participants with university degree had better QoL which correlates with our findings. In both studies, the difference between mean values for QoL score in education level was significant.[3] A research in Nigeria revealed QoL on marital status was insignificant. Our data mean was significant.[3] In one study, the number of siblings were associated with poorer oral QoL which correlates with our study.[4]

A study in Iran revealed people with health insurance have better physical health correlating with our findings.[5] Our research suggested participants with full insurance had better QoL correlating with a study that said higher the insurance the better the QoL in Korean participants.[6,7] A research assessing impact of smoking stated that there is negative association between QoL and smoking in all dimensions. Another research in Iran indicated lower QoL found in smokers compared to nonsmokers.[8,9] A study in Taiwan revealed people who drink alcohol had lower QoL. Our study showed QoL of participants who drank alcohol was higher than who didn't. Difference in mean QoL was insignificant.[10]

A study in Spain revealed people who slept less than 5 hours and more than 10 hours were associated with lower QoL, which correlates with our study.[11] Researches showed that participants came at follow up after a decrease in the amount of exercise done resulted in lower QOL, which opposes our study.[12] A study in Iran revealed rise in BMI produced a decline in QoL, which opposes our study.[13] Our research showed participants with very good appetite had higher QoL, which correlates with study stated that better appetite promoted higher QoL.[14] Our research showed depression has negative impact on participant's QoL. A study showed people without depression had better QoL.[15]

A study in India revealed that elderly individuals who received support from family members had an improved QOL, which correlates with our study.[16] A study showed that participants QoL increased with the use of social media, correlating with our study.[17] A study revealed that financial support was significant, correlating with our study. Unlike our study, financial dependency individuals had lower mean score of 100.65 than who don't receive financial support that have a mean score of 130.[7]

The QoL for cancer patients

A study revealed cancer patients who are 55 and older had higher QoL (55.0) than who are younger than 55 (54.7). Our results showed highest QoL was in patients 40 and under. According to a study, unmarried patients had higher QoL (55.7) correlating with our study.[18]

A study revealed cancer patients who were in a family of more than 5 members had a higher QoL (63.1).[19] A study revealed patients who don't smoke had higher QoL (79.33) correlating with our result.[20] According to one study, data was collected from 973 patients, 16% screened positive for problem drinking. However, problem drinking wasn't associated with any of the quality-of-life scales.[21]

A study revealed patients who performed mild exercise during treatment had highest QoL (56.9) while patients who performed strenuous exercise had lowest QoL (6.7). This contradicts our result, which showed that the people who always exercise has highest while who rarely exercise had lowest QoL.[22]

A study revealed normal and underweight breast cancer patients had higher QoL (20.1) than overweight and obese (19.7), which opposes our results.[23] A study demonstrated male and female patients had higher percentage experiencing difficulties with anxiety and depression. While the least in females experienced no difficulties and the least in males experienced extreme difficulties.[24] A study revealed cancer patients who have a caregiver have a lower QoL (70.5) than those don't (79.6), which correlates with our research.[24] A study showed breast cancer patients who participate in peer-patients activities and communication have higher QoL (99.2) than who don't (93.7). Similarly, our result showed the QoL for patients who maintain social communication is higher (97.6) than who don't (93.7).[25]

A study revealed cancer patients who are of very good economic status have highest QoL (42.33).[26] A study showed cancer patients who undergone surgery had higher QoL (82.4) than who haven't (24.5), which contraindicates with our results.[27]

A study demonstrated cancer patients who are undergoing radiotherapy had lower QoL (51.8) than those who aren't (56.1), which contraindicates with our research.[18] Based on a study, cancer patients who have metastasis had lower QoL (22.1) than who don't (92.1), correlating with our results.[27] A research revealed cancer patients with comorbidity had lower QoL (51.5) than who don't have chronic diseases (56.7), correlating with our results.[18] One study revealed cancer patients with hypertension had lower QoL (0.62) than who don't (0.66), correlating with our results.[27] A study showed cancer patients with CHD had lower QoL (0.61) than who don't (0.65), correlating with our results.[27]

Comparing between the QoL in cancer patients and healthy participants

The highest QoL mean score for healthy adults was in the social domain (73.9) which is similar to a study conducted in Iran. However, unlike this Iranian study, our sample of cancer patients showed the highest QoL mean score in psychological domain rather than in the social domain. There was significant difference in QoL between the groups regarding the physical, psychological and social domains (<0.0001, 0.009 and <0.0001 respectively) except for the environmental (0.079). On the other hand, the Iranian study has shown that there is only a significant difference between patients and nurses in the physical domain.[28] Another study conducted in UK has presented that there is a significant difference between sick and healthy subjects in all domains (0.001), which correlates with our study, excluding the environmental domain. Unlike our research, this study has shown higher mean scores for all domains in sick group than in well group.[29]

CONCLUSION

According to our study, healthy adults had higher QoL of life than cancer patients. Cancer patients have a 1.65 fold risk of having poor QoL. It has been concluded that the highest mean score for healthy subjects was in the social domain followed by physical, then psychological and environmental domain. The highest mean score of QoL for cancer patients was related to psychological domain followed by environmental, then social and physical domain. There is significant difference among the following domains, physical, social, psychological except for environmental domain. We found out that sleeping for less than 7 hours increases the risk of having poor QoL by 1.72 fold.

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