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Assessment of Quality of Life of Cancer Survivors in Tertiary Care Hospital at Karachi

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ABSTRACT

Background: Cancer is the driving source of deaths and this mortality is quickly expanding day by day. Individuals with tumor experience physical and psychological complications such as anxiety, depression, and emotional distress, which have undesirable impacts on patients' quality of life.

Objective: This study aimed to observe the quality of life of cancer survivors.

Methods: This cross-sectional study was conducted from 25th February to 25th April 2022 by using a consecutive sampling technique. Data were collected by using the FACT-G questionnaire on 320 admitted and OPD cancer survivors in the Department of Clinical Oncology, JPMC. Data were analyzed through SPSS. Descriptive statistics and the Mann-Whitney test was run for demographic variables with two categories and the Kruskal-Wallis test for a variable with more than two categories.

Results: Findings of this study showed that most of the study participants (60.9%) were male and married (73.4%). Most were in the age group of 18-30 years (47.5%) Majority of participants were suffering from terminal stages of liquid and solid cancer and on chemo-radiotherapy. Qualification was significantly associated with all four domains. The FWB, SWB, and PWB had a significant association with gender. The residence and cancer stages were associated with the SWB domain and overall FACT-G. The employment status was significantly associated with SWB, PWB, EWB, and FACT-G scores.

Conclusion: The quality of life of cancer survivors was influenced by qualification, gender, residence, cancer stage, and employment status. It is essential to initiate suitable programs for cancer patients to enhance their quality of life.

Keywords: Assessment, cancer, chemotherapy, quality of life, radiotherapy, survivors.

INTRODUCTION

The Quality of life is a person's view regarding his/her position in life, by their cultural and societal contexts and it is also an essential developmental benchmark among cancer patients [1]. Cancer is the driving source of death, and this mortality is quickly expanding day by day. The World Health Organization (WHO) indicated that 91 countries all over the world evidenced that tumor is the main reason for mortality [2]. The five most common cancers are cervix, lung, mouth, breast, and colorectal cancer [3]. Individuals with tumor experience physical, social, and psychological complications such as nausea, vomiting anxiety, depression, and emotional distress, which have undesirable consequences on patients' quality of life [4]. The complex disease process and its symptoms often overlay the signs of depression such as insomnia, weight loss, loss of appetite, lack of energy, and loss of interest, and in this way; it additionally modifies the quality of clients' life [5].

Cancer survivors are those individuals who cope-up well with their life due to cancer even after long-term hospitalization, pain, physical symptoms, stress, anxiety, anemia, depression, and social support which contribute to affect their quality of life [6]. Among other factors, pain

is known as the major cause. The incidence of severe pain among cancer survivors is 90% during their whole disease which also negatively affects their quality of life [7]. It is also recognized that the cancer patient's quality of life is deprived using anxiety that is aggravated by chemotherapy and radiotherapy. The reason for this exacerbated anxiety is altered body image, poor self-esteem, poor relationship, and limited social interactions [8]. Other factors like gender, age, tumor location, and treatment regimen also have significant effects on the quality of the patient's life [9].

Malnutrition which is due to numerous symptoms like lack of appetite, cachexia, nausea, vomiting, and diarrhea are imperative cause of morbidity, and low quality of life and is responsible for 20% mortality among cancer patients [10]. It is well recognized that anemia, neutropenia, and thrombocytopenia are induced by chemo-radiotherapy and are associated with lessened quality of life in cancer survivors [11]. The life quality of malignancy patients can be enhanced by addressing the factors which are contributing to poor prognosis. Exercise and a higher level of satisfaction with the care received indicated an improvement in a patient's improved quality of life [12].

The concerns of cancer survivors are considered valuable in multiple studies even in the context of Pakistan, but they are focused on specific cancer or tumors such as leukemia, oral cancer, and breast cancer. Generally,

less attention has been paid to all types of patients with cancer and their quality of life. No previous study in the public sector in Pakistan was found regarding the life quality of malignancy survivors. Therefore, this study aimed to observe the quality of life of all cancer survivors.

MATERIALS AND METHODS

This cross-sectional study with consecutive sampling technique was conducted from 25th February to 25th April 2022 on all inclined admitted and OPD adult male and female cancer patients in the Department of Clinical Oncology, Jinnah Post Graduate Medical Centre (JPMC), Karachi. Patients under 18 years of age and with other morbidity such as hypertension, asthma, ischemic heart disease, cognitive impairment, or other neurological/ psychological disorders and substance abuse patients were excluded. Approval was obtained from Institutional Review Board, Jinnah Postgraduate Medical Centre (No. F.2-18/2022-GENL/116/JPMC). By using Slovin's formula i.e. $n = N / (1 + Ne^2)$ where n is the sample size, N is population (1400), and e is the margin of error (0.05) and 95% level of confidence, we estimated the sample size which was 311 but we took 320 as round figure [13]. Written informed consent forms were signed by all participants. Demographic information was taken, and patients were asked to fill out the Functional Assessment of Cancer Therapy-General (FACT-G) questionnaire for data collection. FACT-G questionnaire /scale comprised 27 items consisting of general questions divided into four domains of quality of life: Physical Well-being (PWB), Social/ Family well-being (SWB), Emotional Well-being (EWB), and Functional well-being (FWB). All the items in the scale respond to a 5-point Likert- scale from 0 to 4 (not at all - very much). Higher scores indicated better Quality of life. The total score ranges from 0–108 points, with higher scores indicating better quality of life. The FACT-G total and subscale scores have excellent reliability, with Cronbach's alpha values ranging from 0.71-0.88 [3].

The SPSS version-23 was used for data analysis. Simple descriptive statistics were performed on demographic variables to assess the quality of life of cancer patients.

The normality of the data was checked through the Shapiro-Wilk test and found non-normal. Moreover, the Mann-Whitney test was run for demographic variables with two categories, and the Kruskal-Wallis test for variables with more than two categories. Significant differences in all domains including SWB, FWB, PWB, EWB, and FACT-G concerning all demographic variables were checked. Post-hoc analysis was done after finding significant differences in the Kruskal-Wallis test. $P \leq 0.05$ was considered statistically significant.

RESULTS

Table **1** displays the Socio-Demographic characteristics of the participants. A total of 320 patients (admitted 200:62.5% and OPD 120:37.5%) were approached,

Table 1: Demographic characteristics of participants (N=320).

Variables		Frequency	Percentage
Gender	Male	195	60.9
	Female	125	39.1
Marital Status	Married	235	73.4
	Unmarried	85	26.6
Age Group	18- 30 Years	152	47.5
	31-50 Years	133	41.6
	> 50 Years	35	10.9
Qualification	Illiterate	113	35.3
	Up to Metric	135	42.2
	Above Metric	72	22.5
Residence	Rural	137	42.8
	Urban	183	57.2
Stages of Cancer	Stage 1 or 2	84	26.3
	Stage 3 or 4	236	73.8
Type of Treatment	Chemotherapy/ Radiotherapy	201	62.8
	Palliative Care	119	37.2
Employment Status	Employed	89	27.8
	Unemployed	231	72.2

and only 20 denied responding. We had 195 (60.9%) study participants male and married 235 (73.4%). The majority of the participants in this study were in the age group of 18-30 years 152 (47.5%) and had an education till Matric 135 (42.2%). The majority of the study participants lived in urban areas 137 (57.2%) and were unemployed 231 (72.2%). In addition, in this study, 236 (73.8%) of participants were suffering from terminal stages of cancer and 201 (62.8%) were taking chemo-radiotherapy for their treatment.

Table **2** shows that the median and range scores on the FACT-G scale varied among age groups. One domain i.e. FWB, was significantly associated with age group (p=0.002). Furthermore, all domains of the FACT-G scale including, FWB (p=0.001), SWB (p=0.001), PWB (p=0.009), and EWB (p=0.003) were significantly associated with gender.

Study results highlighted that qualification was significantly associated with two domains, including PWB and EWB with P-value 0.001 each. In contrast, marital status and residence showed insignificant associations with all the domains.

This study proved that cancer stages and type of treatment were the variables, which highlighted the association with FWB, SWB domain, and overall FACT-G score with P-values 0.002, 0.034, 0.008, and 0.016, 0.001, and 0.006 respectively. Moreover, employment status was significantly associated with FWB, SWB, PWB, and EWB with P-values P=0.001, 0.001, 0.001, and 0.020 respectively.

DISCUSSION

In this study, we found age was significantly associated with only the PWB domain, but some former studies revealed an association of age with PWB, SWB, and

Table 2: Sample Characteristics and quality of life score (median and interquartile range).

Characteristics	FWB		SWB		PWB		EWB		FACT-G	
Age Group										
18-30 years	12.50 (28.00)		13.00 (43.00)		16.00 (22.00)		13.00 (20.00)		55.00(59.00)	
31-50 years	11.00 (28.00)	P=0.218	11.00 (26.00)	P=0.649	16.00(23.00)	P=0.002*	13.00 (22.00)	P=0.135	53.00 (63.00	P=0.068
> 50 years	13.00 (24.00)		13.00 (21.00)		22.00 (12.00)		15.00 (9.00)		62.00 (47.00)	
Marital Status										
Married	12.00 (28.00)	P=0.065	12.00 (27.00)	P=0.901	17.00 (23.00)	P=0.067	13.00 (22.00)	P=0.105	54.00 (63.00)	P=0.680
Unmarried	13.00 (26.00)		13.00 (42.00)		16.00 (18.00)		13.00 (17.00)		54.00 (51.00)	
Gender										
Male	13.00 (28.00)	P=<0.001*	13.00 (27.00)	P=<0.001*	16.00 (21.00)	P=0.009*	13.00 (21.00)	P=0.003*	55.00 (59.00)	P=<0.47
Female	10.00 (25.00)		10.00 (43.00)		18.00 (23.00)		15.00 (20.00)		53.00 (63.00)	
Qualification										
Illiterate	11.00 (28.00)		12.00 (42.00)		17.00 (21.00)		14.00 (20.00)		53.00 (59.00)	
Up to metric	13.00 (28.00)	P=0.217	13.00 (27.00)	P=0.321	18.00 (23.00)	P=<0.001*	14.00 (21.00)	P=0.001*	55.00 (63.00)	P=0.374
Above metric	12.00 (26.00)		13.00 (26.00)		15.00 (19.00)		11.50 (17.00)		53.00 (48.00)	
Residence										
Rural	12.00 (28.00)	P=0.810	12.00 (42.00)	P=0.858	17.00 (21.00)	P=0.858	13.00 (20.00)	P=0.491	53.00 (59.00)	P=0.815
Urban	12.00 (28.00)		13.00 (24.00)		17.00 (23.00)		13.00 (21.00)		54.00 (63.00)	
Cancer Stages										
Stage 1 or 2	14.00 (24.00)	P=0.002*	14.00 (43.00)	P=0.034*	16.50 (18.00)	P=0.578	14.00 (19.00)	P=0.704	57.50 (57.00)	P=0.008*
Stage 3 or 4	11.00 (28.00)		11.50 (24.00)		17.00 (23.00)		13.00 (22.00)		53.00 (63.00)	
Type of Treatment										
Chemo / Radiotherapy	13.00 (28.00)	P=0.016*	13.00 (43.00)	P=<0.001*	17.00 (22.00)	P=0.680	13.00 (19.00)	P=0.139	55.00 (63.00)	P=0.006*
Palliative	10.00 (24.00)		10.00 (24.00)		17.00 (22.00)		14.00 (22.00)		52.00 (59.00)	
Employment Status										
Employed	13.00 (28.00)	P=<0.001*	14.00 (27.00)	P=<0.001*	16.00 (19.00)	P=0.001*	12.00 (19.00)	P=0.020*	58.00 (48.00)	P=0.025
Unemployed	10.00 (25.00)		11.00 (43.00)		17.00 (23.00)		14.00 (22.00)		53.00 (63.00)	

P-Value≤ 0.05 is considered significant*

total QOL score [14, 15] and they also stated that age group 30-40 has the worse quality of life might be due to financial issues, matrimonial and job responsibilities. In contrast, a past study did not find age significantly associated with any of the domains [14].

All domains of the FACT-G scale including, FWB, SWB, PWB, and EWB were found significantly associated with gender. These all domains were also found associated with gender in a past study [16]. Similarly, some earlier research papers exposed the association of age with quality of life domains and indicated the poorer quality of life among women survivors because of less social support, single parenting, and disturbed body image [14, 15, 17]. Varied observations were made in former studies in which gender was not found associated with any of the subscales of the FACT-G scale [12, 18]. A lesser mean FACT-G score was assessed among females in past research [15, 19]. This may be due to less threshold among females to counter physical and psycho-social stressors. Another study revealed contradictory results as women have a better quality of life due to less muscle loss secondary to less physical workload [19]. On the other hand, a few past studies did not observe any association of gender with quality of life [4, 20].

The results of this study found a significant association between education level and two domains: PWB (p=0.001) and EWB (p=0.001). Comparatively, some previous studies found it significantly associated with all domains [21], with SWB and FWB [21], and with total Fact-G score [14, 22]. Those studies also intimated that higher education can upgrade life quality by having awareness, positive health practices, healthy lifestyles, and coping strategies. Oppositely, qualification was not significantly associated with any of the domains in an earlier study [23]. Moreover, the qualification was observed as significantly associated with the PWB domain [18] and with the SWB domain [15]. Nipp, et al. found the bad influence of higher education on the quality of cancer survivors' life, and the reason behind is stress by having more awareness and information [23]. The need for future studies was also felt to clarify the influence of literacy on quality of life. In contrast, marital status and residence showed insignificant associations with all the domains.

In contrast, marital status and residence showed insignificant associations with all the domains.

This study demonstrated that cancer stages and type of treatment were the variables, which highlighted the association with FWB, SWB domain, and overall quality of life. In some former studies, cancer stage was revealed significantly associated with total quality of life score and declared that advanced stages negatively influence the life quality and cancer survivors suffer due to this advancement [5, 14, 16] except a study by Edianto et al. who found cancer stages' association with SWB domain might be due to less social interaction, isolation,

and physical changes [20]. On the other hand, two past studies did not observe any association between the cancer stage with quality of life [15, 19, 21]. Further studies can help to establish a genuine relationship between disease stages and life quality.

Additionally, the treatment type was found significantly associated with PWB [11, 21] EWB [17, 21], and SWB [17]. The treatment type *i.e.* hormone therapy with FACT-G score [4], surgery with PWB [11], and chemotherapy with PWB [17, 18, 24] discovered significantly associated. These studies also affirmed that chemotherapy minimized the level of life quality and that hormonal therapy as well as surgery promote survivors' health. It was also indicated that chemotherapy and radiotherapy cause fatigue among the survivors and consequently this fatigue reduced the quality of life [25]. Previous research observed a positive association of radiotherapy with quality of life, which might be due to fewer complications as compared to surgery and chemotherapy [20].

Poor outcomes of surgical intervention were also noticed by Valdez and Brennan and they affirmed that surgery made changes in the body image, thus causing psychological and emotional trauma and social stigma [25]. This was contrasted with a past study that revealed a negative association of chemo-radio therapy with quality-of-life scores [19, 22]. The author argued that chemo-radiation had multiple adverse effects like nausea, vomiting, anemia, diarrhea, respiratory and cardiac problems and immunosuppression, and so on [22].

Moreover, employment status was significantly associated with FWB, SWB, PWB, and EWB. Dissimilarly, the employment status was only found significant with SWB and FWB [17, 20]. The reason behind deprivation in quality of life could be a lack of resources, tension, socioeconomic status, *etc.*

Some earlier studies observed the association of employment status with FWB [9, 15], SWB [9], and PWB [14]. The unemployment effect on life quality was also observed by past research, which noted the poor quality of life of housewives and retired or unemployed participants [20]. This might be due to the financial burden of cancer, not having any health insurance, and psychological stress [19]. Employment of cancer survivors also acts for self-esteem, safety, and better life quality [26]. Unequally, an earlier study did not reveal any significant association of employment status with all the domains [21]. Hence, there is also a need for further research to draw trustworthy conclusions.

The current study has its limitations. Since it was a cross-sectional analytical study, it depicted the experience of only those patients who were present at the time of assessment; therefore, a contributory relationship cannot be established between the quality of life of cancer survivors and its variables. Moreover, the data were obtained from cancer patients admitted to the oncology department of one public sector hospital only and the findings must be tested in other health facilities in Karachi.

CONCLUSION

The results of this study revealed that the quality of life of cancer survivors was influenced by the cancer stage, type of treatment, and employment status. The median and range score on the FACT-G scale was nearly the same among all variables such as age groups, gender, marital status, residence, qualification, cancer stage, and type of treatment except employment status. It is essential to initiate suitable programs for cancer survivors to enhance their quality of life, especially in public sector organizations.

ETHICS APPROVAL

This research is approved by Institutional Review Board Committee, Jinnah Postgraduate Medical Centre (No. F.2-18/2022-GENL/116/JPMC dated 24-02-2022). All procedures performed in studies involving human participants were by the ethical standards of the institutional and/ or national research committee and with the Helsinki Declaration.

CONSENT FOR PUBLICATION

Written informed consent was taken from the participants.

AVAILABILITY OF THE DATA

The data are not available to the public due to privacy, confidentiality, and ethical restrictions but can be presented on request from the corresponding author.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHORS' CONTRIBUTION

Khalid Hussain: Concept and research design. Did literature search and data collection. Drafted the manuscript.

Ghulam Haider: Finalized the drafting, supervised the whole study, and revised intellectual content critically.

Amjad Ali: Did data entry, data analysis, and statistical interpretation.

Tanseer Ahmed: Developed research design, critical analysis of the manuscript, and final approval of the manuscript.

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