

# HEALTH-RELATED QUALITY OF LIFE AND ITS SOCIO-DEMOGRAPHIC PREDICTORS IN CANCER PATIENTS

PANKAJ MANDALE\*, NILESH PATEL

Texila American University, Department of Clinical Research, Ebene 72201, Mauritius. Email: [dr.mandalepankaj@gmail.com](mailto:dr.mandalepankaj@gmail.com)

Received 2022.03.02-Accepted 2022.04.05

## ABSTRACT

**Objective:** Health-related quality of life is a multidomain evaluation that analyses how the therapy and illness progression is impacting the patient's well-being and general functioning. The present work assessed the health-related quality of life (HRQoL) of cancer individuals and its association with the socio-demographic parameters among advanced cancer patients. A total of 500 patients were included in this study. The data were collected systematically via the use of standardised instruments. A standardised questionnaire, EORTC-QLQ-C30 (version 3.0), was used as the effective data collecting method in this research. After the data collection was completed, the data were analysed using standard statistical software. Means and standard deviations (SD) were used as summary statistics for numerical data, and then ANOVA was used to compare the results. Because parametric tests assume that data are normally distributed, they were not applied.

**Results:** A P-value less than 0.05 was taken as statistically significant. This study reported that 40.4% (n = 500) of cancer patients belonged to the 40–60 age group. This study also found that 30.2% of cancer patients are not involved in any income-generating activity. According to the findings of this research, more family income is connected to a higher quality of life. It has been shown that a higher socio-economic position is associated with several characteristics of better patient care, including having less anxiety about financial challenges and being away from work. A maximum of the patients reported that their quality of life impacted their economic condition. The performance status of the participants was also observed to have a statistically significant association with HRQoL [ $p < 0.05$ ]. According to the findings, cancer patients in the present study had a significant frequency of low to very low HRQoL.

**Key words:** Health-related quality of life, cancer patients, age, gender, socio-demographic parameters.

## INTRODUCTION

In the era of advancements in medical treatments and personalised medicine, the cure is the only hope for individuals with cancer and the care providers. However, for many people, maintaining their quality of life during and after treatment is just as crucial as the therapy itself. Therefore, the quality of life (QoL) connected to health is a multidimensional evaluation of the individual's feeling of well-being and general function under the consequences of the illness and the management and treatment of the condition [1].

Cancer is a significant economic and public health issue, and its costs are expected to rise. According to recent estimates, cancer fatalities have increased to 9.6 million. In addition, a rising trend in cancer mortality has been documented, which is thought to be affected by current demographic and epidemiological shifts [2].

Monitoring symptoms and HRQoL is critical in advanced cancer care. It raises awareness among healthcare services, enabling them to expect growing patient requirements and improved medical results. These include fewer emergency room visits, fewer hospitalisations, longer palliative chemotherapy duration, and superior quality-adjusted survival. In India, palliative care has existed for almost three decades. However, because of low awareness and several other factors, there is a concern regarding the poor HRQoL in India among advanced cancer patients [3].

The present study evaluated the HRQoL among advanced cancer patients regarding their physiological and psychological well-being and pain experiences from a cross-sectional survey. We had also accessed this association with the different socio-demographic parameters. For example, people from lower economic backgrounds and lower education often experience HRQoL [2,4]. However, no such studies were conducted from the Indian perspective that evaluated this association.

We believe that the findings of this study would help identify individuals who have poorer HRQoL outcomes and shortcomings in health services to

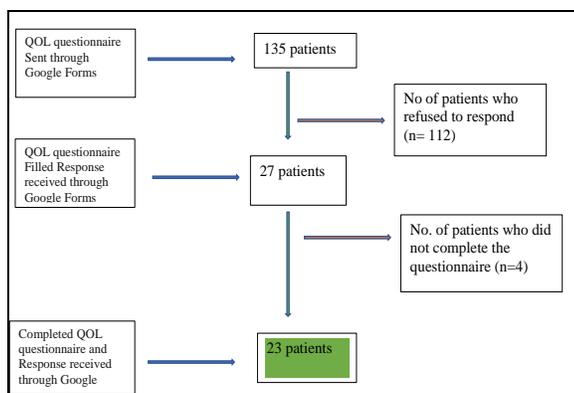
patients with advanced cancer. We also expect that the results of this study would be of use to other cancer centres across the country and other developing nations.

## MATERIAL AND METHODS

### Setting and Participants

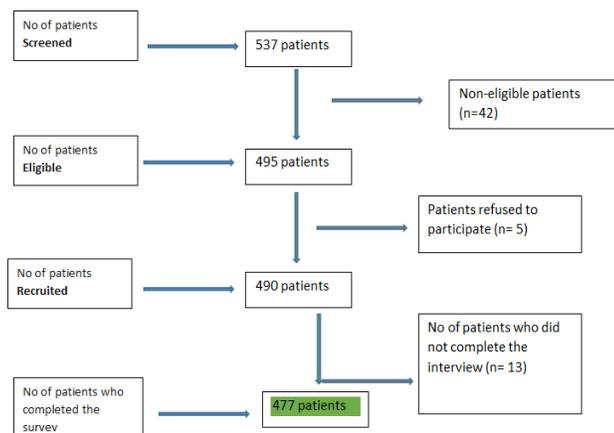
This study was conducted by targeting a sample size of 525 patients. Patients have given written consent for the data to be gathered. Therefore, no patient identification information was collected. For the patients, we used a questionnaire that had been carefully translated into their local language (Marathi, Hindi, and English) by the EORTC for consistency of the response. The surveys were delivered to the patients after establishing a connection with them and assuring them that they were comfortable submitting physical and mental information.

The research was started during the COVID times, and it was considered enrolling the patients through Google Forms online interview/survey questionnaire. One hundred thirty-five patients were sent the questionnaire through Google forms. The consent form was also provided to the patients. The same QoL forms were sent twice a month, 15 days apart, to increase their response rate. Clear instructions were mentioned to not respond to the questionnaire if the forms were filled and submitted previously. This was done to avoid repeating and to lower the bias. Out of the 135 QoL questionnaires sent to 135 patients, only 27 responded. Out of the 27 patient respondents, only 23 patients completed the QoL questionnaire (Figure 1). The overall patient response in completing the questionnaire was far less than expected. As the COVID restrictions were relaxed, it was decided to have a one-on-one interview approach method with the patients visiting the hospital to achieve a statistically significant sample size. Ethical permission from the respective hospitals was obtained before the start of the study.



**Fig. 1: Patient recruitment through Google form**

Based on the eligibility criteria, 537 patients were screened, and 42 were ineligible to participate because of cognitive impairment and could not participate in the survey. Of 495 patients, five refused to be a part of the survey. Of 490 patients who agreed to be a part of the study, 13 patients did not complete the interview stating they felt stressed and tired. [Figure 2]



**Fig. 2: Patient recruitment through personal interview**

The total number of patients recruited in the survey was 500 [23 patients through Google forms and 477 patients from the personal interview].

The formulae used for the response rate were  $100 \times \frac{\text{patients who completed the survey}}{\text{Google Forms and person meeting/number of patients approached}}$  [Google Forms and person meeting]

$$= 100 \times \frac{500}{522}$$

Thus, the response rate for the interview was 95%.

### THE INSTRUMENT FOR DATA COLLECTION

A standard questionnaire was used as the effective data collecting method in this research on cancer patients' quality of life. The European Organization for Research and Treatment of Cancer (EORTC) produced questionnaires to collect and analyse the quality-of-life data (EORTC). Permission from the EORTC was given to use their questionnaire for the study. EORTC-QLQ-C30 (version 3.0) was utilised to generalise cancer and breast cancer. A new questionnaire was devised to gather data on the social well-being of patients. Patients' clinical and medical [including gynaecological] histories were collected via a standardised questionnaire.

### INCLUSION CRITERIA

To participate in the research, respondents who have cancer of any kind or stage and were outpatients or inpatients at a hospital were eligible. The study was open to all cancer patients above 18, regardless of their marital status. In addition, to participate in this research, patients who had or were

currently receiving any curative treatment, such as radiation, chemotherapy, or surgery (Mastectomy, Lumpectomy.) and any combination of these therapies, were eligible.

### STATISTICAL ANALYSIS

Descriptive analysis and ANOVA have been utilised. Means and standard deviations [SD] were employed as summary statistics for numerical data, and then ANOVA was used to compare the results. Because parametric tests assume that data are normally distributed, they were not applied. It was decided to apply non-parametric tests in this investigation because of the wide variation in the distribution of numerical data.

### RESULTS AND INTERPRETATION

Five hundred patients were included in this study. We found that 40.4% [n = 500] of cancer patients belonged to the 40–60 age group regarding age distribution. This study also found that 30.2% of cancer patients are not involved in any income-generating activity. This study may hint at patients' physical and mental inability to get involved in work/contact employment because of the disease condition. Our study observed a high percentage of educated people [55.4%]. One of the primary reasons could be that educated people are more aware and concerned and opt to take medical advice early and start the medical intervention.

Most of the patients in this study are at stage III and above, which might put the patients on frequent hospital visits, leading to poor QOL. Besides, most of the patients in this study travelled a long distance to the hospital and waited for long periods to get treatment. The long queue of patients waiting for treatment causes psychological and economic stress and poor QOL.

The Association of a better QOL to household income is seen in our study. Higher socioeconomic status has been linked to many aspects of better care of patients, such as having less worry about financial difficulties and being absent from work. Similarly, it is well established that patients who experience economic hardship are at risk of developing distress. Poor QOL is associated with the patient having financial problems. This result aligns with previous Iran, Pakistan, Nigeria, and Ethiopia studies. [5] The finding is not surprising because chemotherapy is a prolonged and expensive treatment that creates a financial burden among cancer patients. Besides, this is even worse in developing countries. There are only a few facilities available for chemotherapy treatment, causing all the patients to travel a long distance to get the treatment, adding to the already elevated financial burden on the patients. We have observed that only 40% of patients have average HRQoL.

### DISCUSSION

It was reported that cancer patients often experience sleep disturbances and depression after being diagnosed with cancer. Even the treatment modalities can also cause depression because of the pain and suffering they cause. Hence, the determination of QoL in cancer patients is required to design interventions that can help their mental well-being [6]. This study pointed out that patients with advanced stages of cancer have a lower quality of life. In the past, several studies have reported poor quality of life among patients with advanced cancer. Age, family income, marital status, kind of surgery, radiation, hormone treatment, and unmet sexual needs are all connected to poor overall health status or well-being. It was also noted that appropriate social support and satisfying the needs of patients might result in the improvement of HRQL. [7].

In line with the previous studies, the present study reported a worse HRQoL [8–10]. We have observed that only 40% of participants average HRQoL, 27% have deficient, and 30% have a low quality of life.

It has been shown that a college degree is related to a higher quality of life, as reported in earlier research. This may be because educated individuals may have more opportunities for various paid work positions, greater access to economic resources, greater engagement with other people, and a more incredible feeling of self-control.

According to the findings of this research, more family income relates to a higher quality of life. In addition, it has been shown that a higher socioeconomic position is associated with several characteristics of better patient care, including having less anxiety about financial challenges and

being away from work. In a similar vein, it is widely recognised that patients experiencing financial difficulties are at increased risk of experiencing distress. According to the findings of this research, patients who are experiencing economic challenges have a low quality of life.

Kokkonen et al. [11] further highlighted pain in 56% of the individuals in their investigation, among which 65% of them were in advanced stages and 47% were in local ailment. A comparison was performed with a Norwegian inquiry, and the prevalence was observed to be 53% and 5% in local or advanced stages of the disease [12]. The appearance of pain with moderate-to-severe nature was observed in 16% of the individuals at advanced stages and 5% with local ailment.

In the recent past, the cancer individual's survival has enhanced mainly because of modern therapies specific to cancer type [13,14]. In addition,

many individuals are managed using intensive care protocols extending over long periods. Meanwhile, the betterment of the survival rate is going on, and the enhancement and maintenance of life quality are equally important field [15].

## CONCLUSION

In summary, this study could conclude that, according to the findings of this research, more family income relates to a higher quality of life. In addition, it has been shown that a higher socio-economic position is associated with several characteristics of better patient care, including having less anxiety about financial challenges and being away from work.

## TABLES AND FIGURES

**Table 1. Frequency distribution of cancer**

Variable	Category	Frequency	Percentage
Cancer localization	Breast	124	24.8
	GIT	103	20.6
	Lung	98	19.6
	Head and Neck	61	12.2
	Reproductive system	85	17
	Others	29	5.8
Stage	Stage 0	78	15.6
	Stage I	122	24.4
	Stage II	143	28.6
	Stage III	107	21.4
	Stage IV	50	10
	Less than six months	100	20
	6-12 months	250	50
	More than 12 months	50	10
Treatment	Radiation therapy	175	35
	Chemotherapy	200	40
	Palliative therapy	125	25

**Table 2: Socio-demographic parameters and association with HRQoL**

Variables	Category	Frequency	QOL Score	F-value	
Age	Less than 40	199	1.250+/-28.717	8.706	0.003
	40-60	202			
	Above 60	99			
Income	<40,000	151	1.646+/-13.503	21.122	0.002
	40,000-80,000	185			
	Above 80,000	164			
Education	Illiterate	170	2.22+/-182.24	2.442	0.092
	Primary	138			
	Secondary	85			
Types of Cancer	Head & Neck	61	1.04+/-10.98	21.330	0.000
	Lung	98			
	Breast	124			
	GIT	103			
	Cervical	85			
	Others	29			
Duration of Illness	<6 months	100	93.75+/-20.99	8.929	0.003
	6-12 months	250			
	>12	50			
Treatment	Radiation Therapy	147	1.66+/-49.81	4.795	0.029
	Chemotherapy	132			
	Surgery	120			
	Palliative therapy	101			
Stage of Cancer	0	78	1.25+/-51.98	4.809	0.017
	I	122			
	II	143			
	III	107			
	IV	50			

**Table 3: HRQoL status among the study participants**

HRQoL Status	No of Respondents	Percentage
Very high	0	0
High	15	3
Average	200	40
Low	150	30
Very low	135	27

**CONFLICT OF INTEREST**

There is no conflict of interest among the authors.

**AUTHORS CONTRIBUTION**

Data collection, analysis, and writing by Dr Pankaj Mandale and Guidance provided by Dr Nilesh Patel

**AUTHORS FUNDING**

No external funding.

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