COVER PAGE

ASSESSING QUALITY OF LIFE AMONG FEMALE CANCER PATIENTS AT BMCHRC THROUGH PATIENT REPORTED OUTCOME MEASURES (PROMS) – A PILOT STUDY

Dissertation Submitted to

The IIHMR University, Jaipur

for the partial fulfillment for the award of the degree

of

Master of Business Administration (MBA)

in

Hospital and Health Management

By

Dr. Aakanksha Yadav

Under the Supervision and Guidance of

Dr. Alok Kumar Mathur

(Associate Professor)

2022

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled **Assessing Quality of Life among Female Cancer Patients at BMCHRC through Patient Reported Outcome Measures (PROMs) – A Pilot Study** is the bonafide record of my original researchwork. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished workof others has been duly acknowledged in the text.

Aakanksha.

Dr. Aakanksha Yadav

20 June 2022

Bhagwan Mahaveer
Cancer Hospital & Research Centre
(Managed By K. G. Kothari Memorial Trust)

BMH/HRD /2022/ 640

Date: June 30th, 2022

To whomsoever it may concern

This is to certify that **Dr. Aakanksha Yadav,** in partial fulfillment of the award of the degree of MBA (Hospital and Healthcare Management) from the **IIHMR University, Jaipur** has successfully completed her internship at BMCHRC during **1st April 2022 to 30th June 2022**.

We wish her all the best for her future endeavors.

Deepika Joshi

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I had a wonderful learning experience during my internship at the Bhagwan Mahaveer Cancer Hospital and Research Center in Jaipur, where I was exposed to several opportunities for learning and growing.

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Finally, I want to express my love and admiration for my family and friends, for inspiring me every day with their kind and encouraging words and for keeping their faith in me.

Regards,

Dr. Aakanksha Yadav

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ABBREVIATION

QoL	Quality of Life
PROs	Patient-Reported Outcomes
PROMs	Patient-Reported Outcome Measures
PREMs	Patient reported Experience Measures
PSQ	Patient safety and quality improvement standard
NABH	National Accreditation Board for Hospitals & Healthcare Providers
NABL	National Accreditation Board for Testing and Calibration Laboratories
OPD	Outpatient Department.
EORTC	European Organisation for Research and Treatment of Cancer
BPL	Below Poverty Line
RGHS	Rajasthan Government Health Scheme
CGHS	Central Government Health Scheme
CHEMO	Chemotherapy
ICMR	Indian Council of Medical Research
NEURO	Neurology
HL	Hodgkin's lymphoma
NHL	Non-Hodgkin's lymphoma
BMCHRC	Bhagwan Mahaveer Cancer Hospital and Research Centre
SD	Standard deviation
HRQOL	Health related quality of life
GHS	Global health survey
CT	Chemotherapy
C	Cancer

Assessing Quality of Life among Female Cancer Patients at BMCHRC through Patient Reported Outcome Measures (PROMs) – A Pilot Study

INTRODUCTION:

A set of disorders collectively known as cancer can originate in nearly any organ or tissue of the body and spread to other organs aberrant cells proliferate out of control, infiltrate, and/or migrate to other organs. Cancer is the world's second leading cause of mortality, accounting for 9.6 million deaths in 2018, or one out of every six deaths. In 2018, India recorded 1,157,294 cancer cases and 784,821 cancer deaths [1]. The number of cancer patients in India is expected to rise to 29.8 million in 2025, up from 26.7 million in 2021. Seven malignancies accounted for more than 40 percent of the total disease burden in India, according to an ICMR report the distribution is as follows: lung cancer (10.6 percent), breast cancer (10.5 percent), esophagus cancer(5.8 percent), mouth cancer (5.7 percent), stomach cancer (5.2 percent), liver cancer (4.6 percent), and cervix uteri cancer (4.3 percent) [2].

Breast cancer and oral cavity cancer account for 25% of cancers in women, while accounting for 14% of all cancer cases in Indian women, breast cancer is the most common malignancy. Every 28th woman experiences breast cancer at some point in their lifetime. In urban regions, 1 in every 22 women will have breast cancer during her lifetime, whereas in rural areas, 1 in every 60 women will develop breast cancer throughout her lifetime, and one woman will die of breast cancer for every two newly diagnosed women in India. In India, a total of 3,71,302 women died of cancer in 2018. In India, a total of 3,71,302 women died of cancer in 2018. In India, cancer incidence rates begin to grow in the early forties and peak between the ages of 50 and 64, with a 9.42 percent chance of developing cancer before the age of 75 for women. [3]

The diagnosis of cancer comes with several unpleasant repercussions, particularly for women. One of the negatives is how a cancer diagnosis affects a patient's QoL. Patients' QoL is lowered because of the psychological repercussions of cancer diagnosis and the physical consequences of cancer therapy. Patients with cancerexperience a wide range of symptoms. Inadequate symptom management might make it difficult for a person to carry out daily responsibilities. Cancer diagnosis and treatment disrupted sleep and activity patterns, physical symptoms and decreased cognitive function, and social and individual task dysfunctions all pose a danger to one'sQoL. Apart

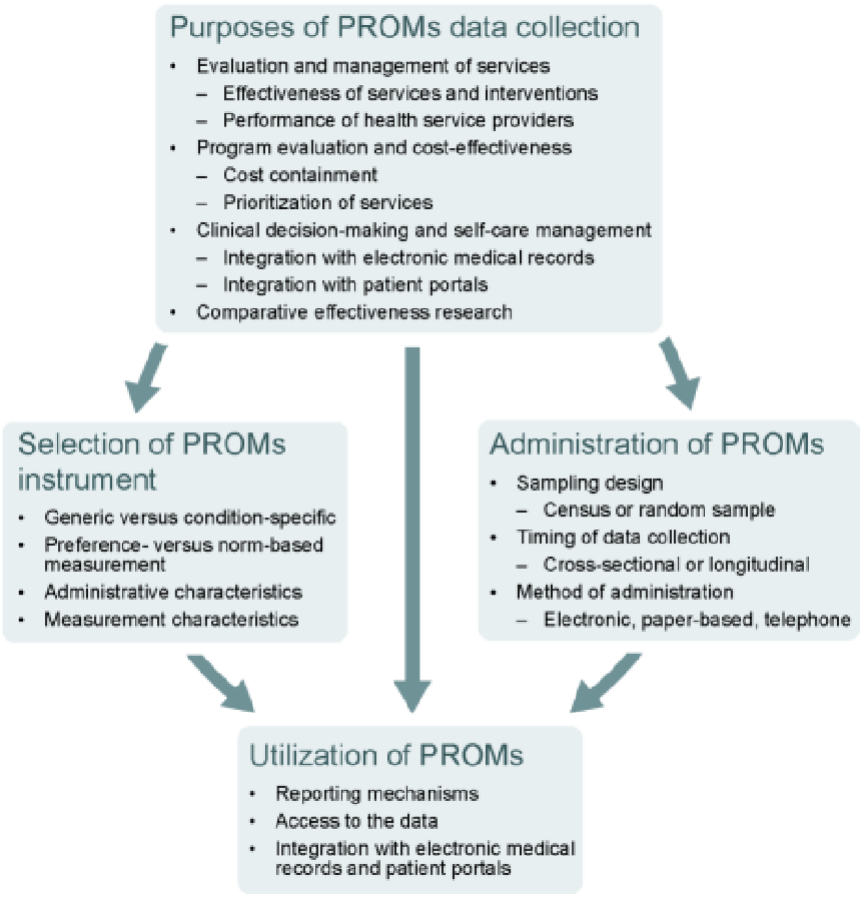
from high mortality, cancer-related morbidity is also believed to be very high, which has a significant impact on cancer patients' quality of life. This necessitates patient feedback on the health-related outcomes of the treatment they are receiving. Treatment of symptoms can help to relieve discomfort and improve one's quality of life (QoL). Input from patient's will be useful for clinical research as well as determining the influence of a specific treatment on a patient's quality of life.

Patient-reported outcome measures (PROMs) are questionnaires that patients fill out to offer information on various aspects of their health that affect their quality of life. Patient-reported outcomes are critical for determining whether health-care interventions and procedures improve patients' health and quality of life. PROMs supplement current data on the quality of treatment and services given by providing insight into the effectiveness of care from the patients' perspective. It can be used to manage health services, improve quality, and monitor performance. Given the variety of potential uses for PROMs data, a coordinated approach to PROMs data collecting, which would make this information available to doctors, health system administrators, policymakers, researchers, and the public, could provide enormous potential benefits. [4]

Table 1: Value of PROMs to Stakeholders

Stakeholder	Uses
Health System Policy-Makers/ System Managers	• Compare outcomes locally, regionally and provincially, over time, as well as with similar regions and jurisdictions. • Compare different care models and clinical pathways for outcome analysis and for the potential realignment of referral patterns to target best outcome organizations. • Support health service allocation decisions informed by information about the relative cost of achieving desired outcome states ("value-based care"). • Identify clinical organizations and/or regions that would benefit from further education and support to improve outcomes.
Health Care Organizations	• Monitor organization and provider performance; compare with peer organizations; identify organizations with high outcomes scores for engagement and improvement. • Identify areas and providers that would benefit from further education and support.
Health Care Providers	• Direct feedback that can be used to modify the care path for that patient and provide evidence toward improving or maintaining a high level of care and expected outcomes. • Support improved clinician–patient communication and raise awareness of problems that would otherwise be unidentified. • Facilitate performance comparisons with expected standards.
Patients	• Provide opportunity for patients to provide input from their perspective and to be more aware of expected outcomes and how they compare. • Provide opportunity for patients to provide feedback independent of their provider's view and also potentially identify themselves as not having a satisfactory outcome. • Enhance communication with care providers and patient involvement in care planning and decision-making.

FRAMEWORK TO GUIDE DECISIONS ABOUT PROMs INITIATIVES



Value of PROMs:

- PROMs are a complement to conventional, clinically based outcomes, giving a morethorough comprehension of outcomes and efficacy.
- By enabling the evaluation of service effectiveness, identifying patients who would benefit from interventions, and promoting the sharing of best practises, PROMs encourage improvements in service delivery.
- PROMS can be used to evaluate performance and the efficacy of care in order to support a prospective switch in the management of health system resources from a volume-based to a value-based approach.
- PROMs are crucial in the care of chronic illnesses and elective procedures, when the main objective is to improve patients' quality of life.

  PROMs can help with resource allocation decisions so that investments promote population health benefits.

LITRATURE REVIEW:

Ali Dehkordi, M. Saeed Heydarnejad, and Daryoush Fatehi (2009) conducted "a study with the goal of describing the quality of life in solid tumour cancer patients during various chemotherapy cycles. The trial, which took place in a Tehran hospital, involved 200 cancer patients. The EORTC QLQ-C30 was modified and utilised to assess QoL in the student patients. There was no link between QoL and characteristics including age, sex, marital status, sickness duration, economic situations, or occupational function. Furthermore, no link was discovered between QoL and the educational level of the patients. Nonetheless, there was a substantial improvement with every succeeding chemotherapy cycle, which suggests that encouraging cancer patients to finish a CT course has a significant impact on treatment outcomes and quality of life in cancer patients who undergo CT." [10]

Harminder Singh et al. (2014) used the EORTC QLQ- C30 questionnaire in a prospective, non-interventional, observational study at a tertiary care hospital in Punjab to assess QoL and physical/ psychological stress among 131 cancer patients during their chemotherapy sessions. Analysis of variance (ANOVA) was used to compare the different groups, and it was discovered that GHS and four symptoms, including insomnia, pain, lack of appetite, and financial problems, were statistically significant. They also found that as the chemotherapy session went, the patients' quality of life increased dramatically. [8]

Anna Lewandowska et al. (2020) conducted a population-based, multi-area cross-sectional study among cancer patients at the Podkarpackie Oncology Centre, Clinical Provincial Hospital in Rzeszów, with the goal of assessing cancer patients' quality of life after oncological chemotherapy treatment. Prism 4.0 software was used to collect and analyse all of the data from the 800 patients in the trial. The findings of this study revealed that there was no link between quality of life and age, gender, social status, marriage, or employment, however there was a link between disease severity and quality of life. The patients reported the most significant problems with self-care and feeling worried and sad, according to the EQ-5D-5L profile, quality of life, and psychometric features. [11]

Nancy. E Avis et al. (2005) conducted a research study on 202 women under the age of 50 who had been diagnosed with breast cancer, with the goal of determining their quality

of life and the factors that contributed to their poor quality of life. They conducted a survey using the FACT-B questionnaire and conducted numerous statistical analyses, concluding that younger women diagnosed with breast cancer reported more symptoms and had a lower QoL than their older counterparts as well as with those women without cancer, as well as having greater psychological morbidity than women without cancer. Psychological elements were discovered to have a consistent relationship with QoL. [5]

Qing Chen et al. (2018) in their study wanted to look at HRQOL and see which aspects of it have a bigger influence in breast cancer patients' overall quality of life in China. They conducted the study using the EORTC QLQ-C30 and QLQ-BR23, as well as attempting to determine whether each of these questionnaires gives unique information for breast cancer patients and thus serves as a complement to one another. They studied 605 breast cancer patients and found that age, residence, educational level, employment status, and TNM stage were five significant predictors of overall quality of life. The findings were consistent with previous studies that treatment side-effects can cause symptoms like nausea and vomiting, pain, and fatigue, which are not life-threatening but can negatively impact patients' well-being and are linked to worse HRQoL. The study also found that the two questionnaires play a complimentary role . [6]

Nayak M.et al. (2017) did a study in Karnataka with 768 cancer patients in stages III and IV with the intention of assessing QoL and finding a link between QoL and demographic and disease-related variables. The QoL questionnaire version II was used to collect data, which was then analysed using the SPSS package version 16. They discovered that common symptoms reduced QoL significantly, and that financial restrictions were the most significant impediments to symptom management. Quality of life was found to improve as income increased but was unaffected by demographic factors. [7]

Ajeet Kumar Gandhi et al. (2014) used the "EORTC- HN35 and EORTC QLQ- C15-PAL questionnaires to assess the symptom burden and QoL among advance incurable HNCa patients who were administered palliative radiations in observational research on 100 advanced head and neck cancer patients. Pain, sleeplessness, lack of appetite, and fatigue were determined to be the top four most prevalent symptoms. Physical functioning was found to be impaired by 23%, while emotional functioning and QoL were shown to be affected by 50%." [9]

Tadesse Melaku Abegaz, et al. (2018) conducted "a prospective hospital-based cross-sectional study on 150 cancer patients in 2017 with the goal of assessing health-related

quality of life (HRQoL) in Ca patients in Ethiopia", for which they used SPSS version 20 to conduct statistical analysis. Then they discovered that emotional and cognitive skillswere among the highest functional status ratings that were unaffected. Individuals with intact emotion were regarded to have good QoL, according to binary regression. On the symptom scale, nausea and vomiting were the most common compliance, followed by fatigue. They also stated that surgery has a good impact on patients' overall health because it can result in a complete cure of disorders if it is followed by appropriate adjuvant therapy. In Ethiopia, cancer patients' overall health-related quality of life was found to below. [12]

Guru Karthikeyan et al (2012) conducted a cross-sectional observational study on 121 cancer patients receiving various anti-cancer therapies such as chemotherapy, radiotherapy, and concurrent chemo radiation with the goal of determining the prevalence of fatigue and the relative impact of fatigue on QoL using the FACT- G scale and SPSS 11.0 version of the software. The researchers discovered that individuals getting chemotherapy and concurrent chemo-radiotherapy experienced severe fatigue, while those receiving radiation therapy experienced a greater impact of fatigue on QoL. [13]

RESEARCH RATIONALE:

While patient reported Experience Measures (PREMs) were being collected at BMCHRC, but Patient reported Outcome measures (PROMs) collection was still to be bought in action. Capturing PROMs has been labelled as an element of excellence by NABH 5th edition under patient safety and quality improvement standard (PSQ-3). PROMs collection is seen to have ability to improve quality of care and is of value to understand the health experience of patient. The study will help in tracking the outcome of treatment and promoting patient participation in their care, which will aid in identifying the barriers that may result in poor quality of life among cancer patients.

RESEARCH QUESTION:

What is the Patient Reported Outcome for female Cancer patients undergoing Chemotherapy at BMCHRC?

RESEARCH OBJECTIVE:

Broad Objective:

To study patient reported outcome for female Cancer patients undergoing Chemotherapy at BMCHRC.

Specific Objective:

- To assess health related quality of life among female cancer patients admitted to Day care unit at BMCHRC using EORTC QOL –C30 version 3.0 tool.
- To give suggestions for future PROMs collection and its uses at BMCHRC.

METHODOLOGY

Study Design: Descriptive Cross-Sectional study

Study Location:

Day Care at BMCHRC

Bhagwan Mahaveer Cancer Hospital and Research Centre (BMCHRC) in Jaipur is managed by K. G. Kothari Memorial *Trust. It* is a NABH and NABL accredited hospital which was founded in 1997 as a cancer specialist hospital delivering cancer prevention, treatment, education, and research. It is a 300-bed hospital with cutting-edge infrastructure that houses multiple wards, labs, utility services, and specialties. Surgical oncology, medical oncology, radiation oncology, haematology oncology, anaesthesiology, neuro oncology, geriatric oncology, radiology, plastic and reconstructive surgery, nuclear medicine, pathology, and a large blood bank are all part of the BMCHRC. OPD at BMCHRC is categorized as Medical OPD, Surgery OPD and Radiation OPD.

Study Duration: 2 months (May & June 2022)

Study Tools:

Semi – Structured Questionnaire **(**EORTC – QLQ -C30 version 3.0 Questionnaire)

The EORTC quality of life questionnaire (QLQ) "is a comprehensive approach for assessing cancer patients' health-related quality of life (HRQoL) in international clinical trials. THE QLQ-C30 is a core quality of life instrument used for all cancer patients. QLQ-C30 version 3.0 contains 30 questions of which the first 28 are scored 1 to 4, namely "Not at all", "A little", "Quite a bit" and "Very much." And the 29 &30 question is scored on 1 to 7 scale. Both multi-item scales and single- item measurements make up the QLQ-C30. Five functional scales, three symptom scales, a global health status / quality of life scale, and six single items are among them. The scales and single-item measurements all have a score range of 0 to 100. A high scale score indicates a higher level of responsiveness. Thus, a high score on a functional scale indicates a high / healthy level of functioning, while a high score on a global health status / QoL indicates a high level of QoL. However, a high score on a symptom scale / item indicates a high level of symptomatology / difficulties."

STUDY POPULATION:

Inclusion criteria:

- Female cancer patients between age 18 to 65 years who are admitted for chemotherapy at BMCHRC.

Exclusion criteria:

- Patient who are unwilling to participate.
- Patient with speech impairment due to cancer of oral cavity
- Patient who are getting chemotherapy for the first time.

Sample size: 155 female cancer patients undergoing chemotherapy.

Sampling Techniques: Convenient sampling

OPERATIONAL DEFINITIONS:

Patient-reported outcome (PROs)

A PRO refers to "the patient's health, quality of life, or functional status as it relates to health care or treatment and is reported directly by the patient without any interpretation by a doctor or anyone else." [14]

Patient-reported outcome measures (PROMs)

Patient-reported outcome measures (PROMs) are "measurement instruments that patients complete to provide information on aspects of their health status that are relevant to their quality of life, including symptoms, functionality, and physical, mental, and social health. PROMs provide insight on the effectiveness of care from the patients' perspective and complement existing information on the quality of care and services provided. PROMs are self-report instruments, and information is gathered directly from the patient without interpretation by a clinician or any other person." [14]

Health-Related Quality of Life (HRQoL):

"The value ascribed to duration of life as affected by impairments, functional states, perceptions, and social opportunities that are influenced by sickness, injury, treatment, or policy" is known as health-related quality of life.

Data Collection Method:

Data was collected through personal interview with individual respondents using EORTC QLQ – C30 Questionnaire which was converted into a google form. Questions were translated to the respondents in Hindi language.

Scoring Method for Analysis:

Scoring was done after transferring the data collected through google forms into MS Excel and then using the following formulas:

Table 1: Scoring the QLQ-C30 version 3.0

	Scale	Number of items	Item range*	**Version 3.0** Item numbers	Function scales
Global health status / QoL					
Global health status/QoL (revised)†	QL2	2	6	29, 30	
Functional scales					
Physical functioning (revised)†	PF2	5	3	1 to 5	F
Role functioning (revised)†	RF2	2	3	6, 7	F
Emotional functioning	EF	4	3	21 to 24	F
Cognitive functioning	CF	2	3	20, 25	F
Social functioning	SF	2	3	26, 27	F
Symptom scales / items					
Fatigue	FA	3	3	10, 12, 18	
Nausea and vomiting	NV	2	3	14, 15	
Pain	PA	2	3	9, 19	
Dyspnoea	DY	1	3	8	
Insomnia	SL	1	3	11	
Appetite loss	AP	1	3	13	
Constipation	CO	1	3	16	
Diarrhoea	DI	1	3	17	
Financial difficulties	FI	1	3	28	

* *Item range* is the difference between the possible maximum and the minimum response to individual items; most items take values from 1 to 4, giving *range* = 3.
† (revised) scales are those that have been changed since version 1.0, and their short names are indicated in this manual by a suffix "2" – for example, PF2.

For all scales, the *RawScore*, *RS*, is the mean of the component items:

$$RawScore = RS = (I_1 + I_2 + ... + I_n)/n$$

Then for **Functional scales**:

$$Score = \left\{1 - \frac{(RS-1)}{range}\right\} \times 100$$

and for **Symptom scales / items** and **Global health status / QoL:**

$$Score = \{(RS-1)/range\} \times 100$$

Further, SPSS version 13 was used to calculate Pearson's correlation of GHS with Functional scale items & Symptom scale items.

RESULTS:

Table.1 Distribution of Female Respondents (N=155)

Characteristics	% Of participants
Age	
18-24	3%
25-45	26%
46-65	71%
No of chemo cycles	
less than 5	43%
5 to 15	52%
more than 15	6%
Category	
Bhamashah/Chiranjeevi	11%
BPL	5%
Cash	44%
CGHS	2%
Empanelled	10%
Others	6%
RGHS	23%
Diagnosis / Disease	
Head & Neck. C	1%
Breast. C	50%
Ovarian. C	21%
Cervix. C	8%
Uterus. C	1%
Blood & Bone marrow. C	2%
Lung. C	4%
Rectum. C	3%
Colon. C	1%
Gall bladder. C	3%
HL & NHL	1%
Oesophageal. C	3%
Sarcoma	1%
Vaginal. C	1%
Periampullary Carcinoma	1%
Total Participants	100%

According to Table 1, of the total 155 study participants, 70 percent (N=110) were found to be between the ages of 45 and 65 years. The cash category was used by 44 percent (N = 68) of the study participants, whereas the RGHS scheme was used by 23 percent (N = 35). 52 percent of patients (N = 80) had completed 5 to 15 chemotherapy sessions. The following was the distribution of diseases among the participants: Breast cancer affected 50% of the women (N=77), ovarian cancer affected 21% (N = 33), cervix cancer affected 8% (N = 13), and other 12 cancers affected the remaining 29% (N= 32).

Table. 2 Quality of life scores for all participants (N=155)

EORTC Item	MEAN	SD
FUNCTIONAL SCALE		
Physical functioning	87.3	14.9
Role functioning	76.6	28.4
Emotional functioning	83.1	15.3
Cognitive functioning	88.5	15.9
Social functioning	95.9	8.9
SYMPTOM SCALE		
Fatigue	30.8	20.8
Nausea and vomiting	16.8	19.6
Pain	16.2	19.9
Dyspnoea	9.9	19.0
Insomnia	15.9	24.3
Appetite loss	15.5	21.5
Constipation	25.8	31.3
Diarrhoea	11.2	21.8
Financial difficulties	12.7	23.4
Total Functional Score	86.7	10.1
Total Symptom Score	19.1	10.3
GLOBAL HEALTH STATUS	70.2	12.1

30 questions were asked of a total of 155 female cancer patients who were receiving chemotherapy and cancer treatment. Three different facets of their quality of life were probed. The first was the Functional scale, which included 15 items and was divided into five categories: social functioning, role functioning, role functioning as it related to

emotions, cognitive functioning, and cognitive functioning as it related to emotions. The 13 questions that made up the symptom scale were broken down into 9 symptom categories: Financial troubles, fatigue, nausea and vomiting, pain, dyspnea, sleeplessness, loss of appetite, constipation, and diarrhea. A scale of 1 to 4 was used to score thefunctional and symptom scales, with the options "not at all," "a little," "quite a bit," and"very much.". Two questions about QoL and health status were includedin the last category, global health status, and were both rated on a seven-point scale from poor to outstanding. Mean and standard deviation (SD) for all three categories and their subcategories are shown in Table No. 2 based on data from155 respondents.

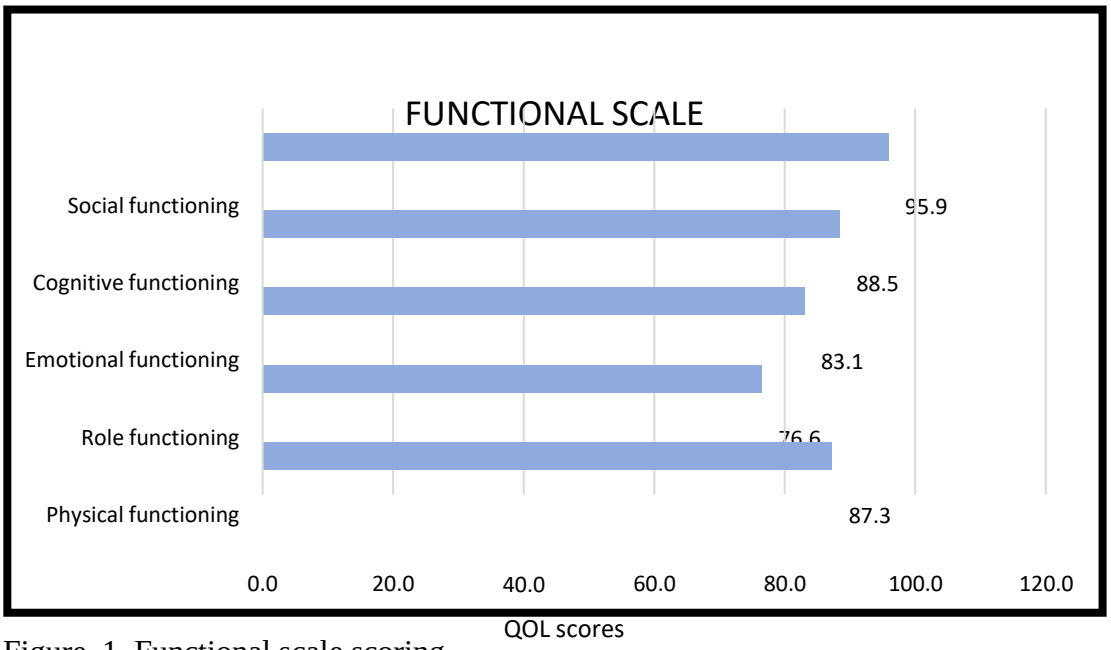


Figure. 1. Functional scale scoring.

According to Fig. 1, “the respondents had a good QoL scores on the functionalscale. The highest QoL was found in all areas of the functional measures, withthe maximum score of 95.9 in social functioning which includes questions about relations with family and society, followed by 88.5 in cognitive functioning which includes questions about concentration and memory, 87.3 in physical functioning which includes 5 questions about physical activities, 83.1 in emotional functioning which includes 4 questions about emotional status of respondents, and the lowest score of 76.6 in role functioning which includes 2 questions about their daily activities.”

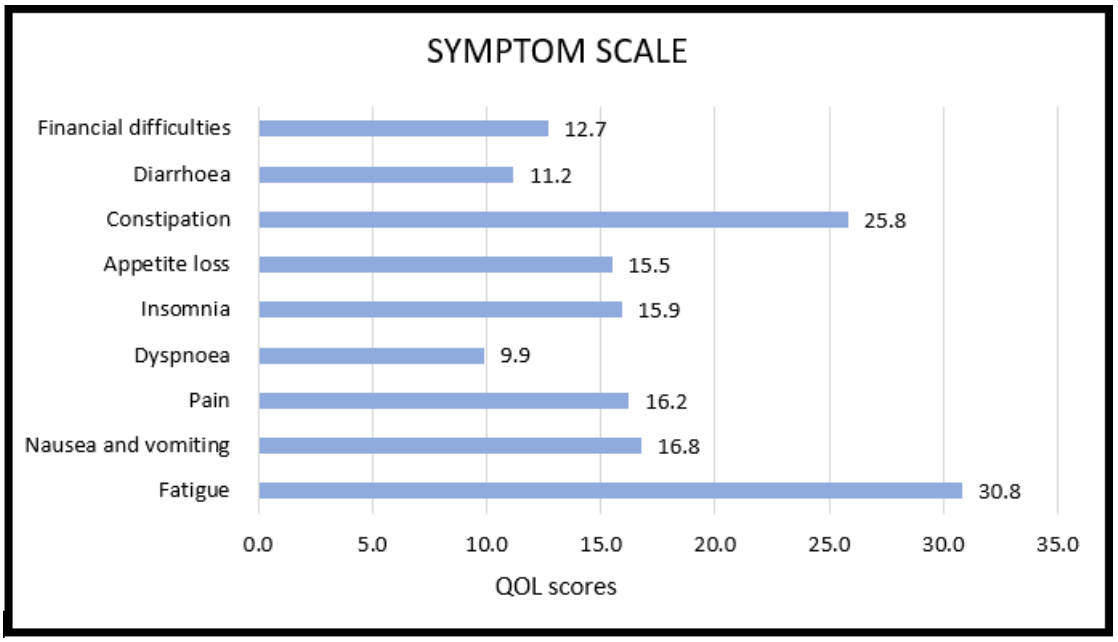


Figure. 2. Symptom scale scores.

The mean symptom scale score according to Fig.2. was highest at 30.8 for fatigue followed by 25.8 for constipation, 16.8 for nausea and vomiting, 16.2 for pain, 15.9 for insomnia, 15.5 for loss of appetite, 12.7 for financial troubles, 11.2 for diarrhoea, and least at 9.9 for dyspnoea. The mean GHS score was 70.2 indicating a decent health status among respondents.

Among the 16 patients that rated 3 or 4 on their financial difficulties around 9 respondents belonged to cash category, of which 8 patients showed a GHS score and emotional score below the mean GHS and emotional functioning score suggesting that financial burden of the treatment affected the quality of life and emotional functioning among patients.

Functional scale Items	Correlation Value [R]	Significance level (2- tailed)
Physical functioning	0.349	0.01
Role functioning	0.435	0.01
Emotional functioning	0.374	0.01
Cognitive functioning	0.077	0.01
Social functioning	0.233	0.01
Total functional Score	0.498	0.01

Table.3 Correlation between GHS and Functional scale items

Pearson's correlation analysis between GHS and all the functional scale items showed a positive correlation. A moderate level of positive correlation of GHS was seen with role functioning (r = 0.435 at significance = 0.01) and total functional score (r = 0.495), while physical functioning (r = 0.349), social functioning (r = 0.233), cognitive functioning (r = 0.077) and emotional functioning (r = 0.374) showed a weak positive correlation with GHS.

Symptom scale Items	Correlation Value [R]	Significance level (2- tailed)
Fatigue	-0.441	0.01
Nausea and vomiting	-0.152	0.01
Pain	-0.184	0.01
Dyspnoea	-0.137	0.01
Insomnia	-0.143	0.01
Appetite loss	-0.273	0.01
Constipation	-0.104	0.01
Diarrhoea	-0.008	0.01
Financial difficulties	-0.165	0.01
Total Symptom Scale	-0.445	0.01

Table.4 Correlation between GHS and Symptom scale items.

Pearson's correlation analysis between GHS and all the symptom scale items showed a negative correlation. A moderate level of negative correlation of GHS was seen with fatigue (r = -0.441 at significance = 0.01) and total symptom score (r = -0.445), while nausea & vomiting (r = -0.152), pain (r = -0.184), dyspnoea (r = -0.137), insomnia (r = -0.143), appetite loss (r = -0.273), constipation (r = -0.104), diarrhoea (r = -0.008) and financial difficulties (r = -0.165) showed a weak negative correlation with GHS.

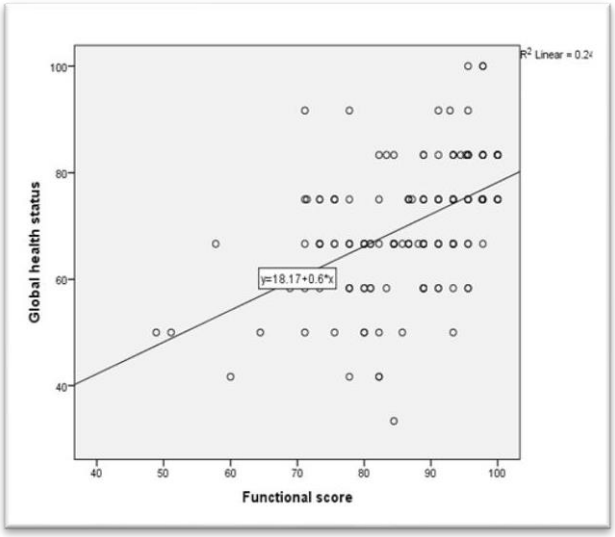


Figure.3. Correlation between GHS and Functional scores

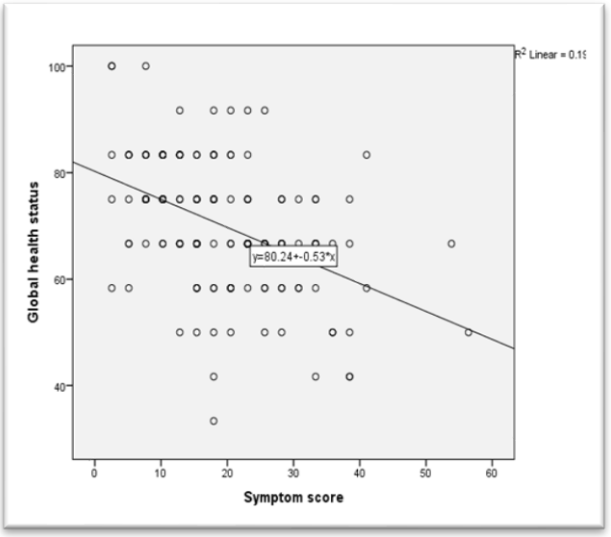


Figure.4. Correlation between GHS and Symptom Scores

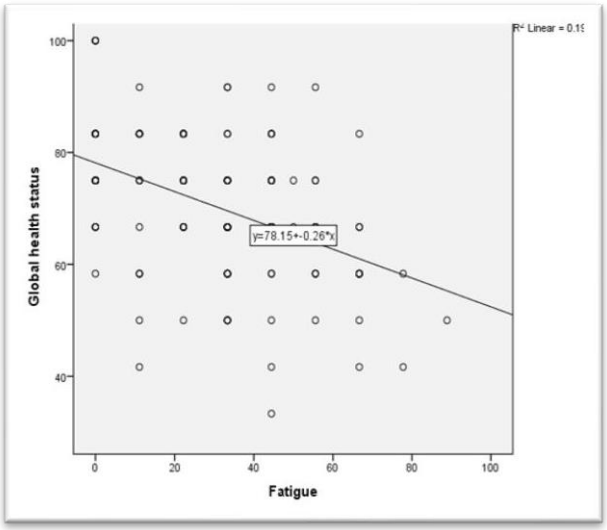


Figure.5. Correlation between GHS and Fatigue

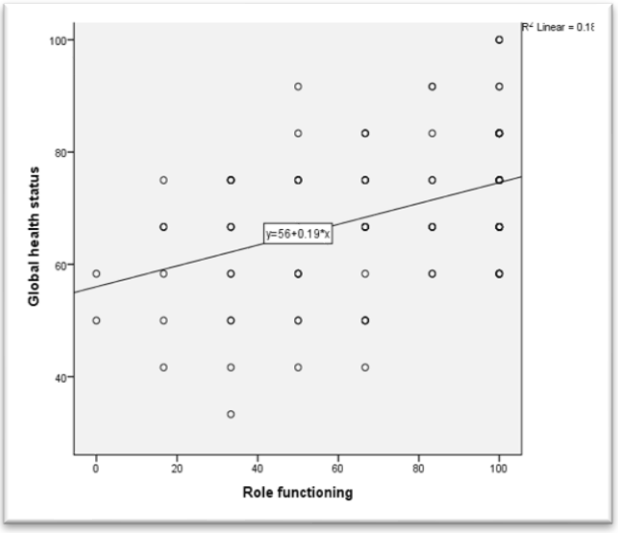


Figure.6. Correlation between GHS and Role Functioning

DISCUSSION

The term "quality of life" refers to a humans overall well-being, which includes physical, emotional, mental, social, and behavioural aspects. Several useful and valid QoL techniques for measuring health related QoL have been available in recent years. The most widely used tool for evaluating QoL in cancer patients is the EORTC QLQ-C30. The latest PROMs study, which involved 155 chemotherapy-treated female cancer patients at the BMCHRC, offers useful insight into how therapeutic interventions affect patients' health condition and quality of life in general (QoL).

Our research revealed that the majority of study participants at BMCHRC were over the age of 40 and that the majority of them had breast cancer, with roughly 50% of study respondents having breast cancer. According to studies undertaken by Nancy. E. Avis et al., Zahra Sheikhalipour et al., and national level data,

The patients reported a good QoL on the functional scales. The QoL was good across all the domains on the functional scales, with the highest score going to the social domain, which includes questions concerning patients' post-diagnosis relations with family and society. A high social functioning score indicates that the cancer sickness is becoming more accepted in society and that those who are affected are receiving better support. The relationship of functional scores with GHS/QoL was shown to be relatively positive. Social functioning scored maximum on the functional scale in our study, which was in contrast to the findingsof studies conducted by Tadesse Melaku Abegaz et al and Harminder Singh et al, in which social functioning received a lower score. While we received the lowest scores in emotional and role functioning, this suggests that most cancer patients may be suffering from mental and emotional disorders such as depression, anxiety, and stress, as well as being hampered in their daily work activities and pursuit of hobbies, all of which can lower their quality of life.

Fatigue, constipation, nausea & vomiting, pain, and insomnia were the top five poorest performing symptoms on the symptom scale, in decreasing order of scores collected. Our study found that fatigue was the most common symptom, which is consistent with

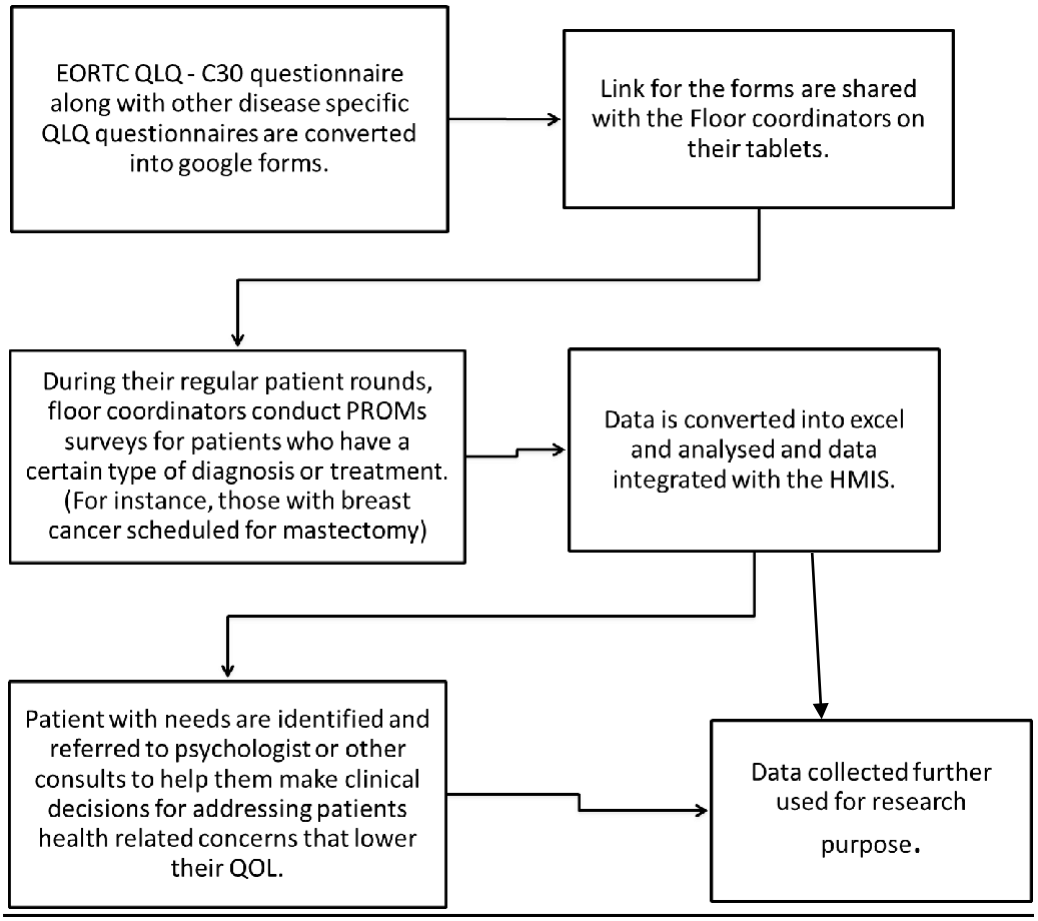
Guru Karthikeyan et al's findings, which found a significant frequency of severe fatigue among cancer patients receiving chemotherapy.

Nearly half of the female respondents scored above 70 on the Global health status scale, indicating that chemotherapy had a good impact on quality of life. Other research investigations have found that typical cancer symptoms result in a considerable decline in QoL. It's important to pay attention to these symptoms and educate patients about theprobable side effects of chemotherapy before they begin treatment because women are frequently given a lot of information about treatment options and procedures but aren't always anticipating their own feeling towards self or how receiving a cancer diagnosis will impact their daily lives.

CONCLUSION

Cancer is a chronic disease that can continue a long time, it is critical to not only reduce mortality but also to recognize the disease's morbidity in order to maintain a healthy, high-quality life for all cancer patients until they are disease-free. It can be concluded from the study that most female patients with cancer are more prone to symptoms such as fatigue, constipation, and pain because of the disease, all of which negatively impact their quality of life. Management of chemotherapy-related fatigue is an important issue in the care of patients suffering from cancer which may also hamper their pursuit of daily routine activities. As a result, it is critical to educate and keep patients informed about potential health issues and treatment-related adverse effects that they may encounter throughout therapy. PROMs are a fantastic tool for keeping track of the outcome of the treatment they are receiving and for encouraging patient participation in their care, which will aidin discovering the roadblocks that are causing poor quality of life.

SUGGESTIONS FOR FUTURE PROMs COLLECTION AND USE AT BMCHRC:



- A new HMIS system will shortly be implemented at BMCHRC, allowing for the integration of PROM data with the EMR for clinical decision-making and self-care management.
- Data from PROMs can be used for additional oncology-related research at the BMCHRC's approved research centre, where several clinical trials and studies are conducted.
- PROMs data can be used to identify individuals who exhibit lower emotional functioning, In order to recommend these patients to psychologists who can give them the assistance they need.

- Several welfare programmes for female cancer patients are already in place at the BMCHRC, such as "Annual Surveillance and Early Detection of Breast Cancer" and "Breast Cancer Recurrence Prevention." We can use PROMs to identify priority patients, such as needy widows and women over 60 with cancer who lack a source of income or family support, and we can expand the scope of these programmes to include these patients in order to provide them with physiological as well as welfare support.

LIMITATION OF STUDY:

As the study was a pilot study to implement PROMs at BMCHRC and due to limited time for data collection patients were enrolled by convenience at their respective chemotherapy sessions.

Several exclusion criteria in our study and repetition of patients as most had their chemotherapy sessions on every 7^{th}, $15^{th\ or}$ 21^{st} day, were major reason which led to a smaller sample size available for my study.

No post survey was conducted afterwards, data from which could have been compared with the pre survey data for better insight.

ETHICAL CONSIDERATIONS:

As the study is done as part of a process for patient safety and quality improvement as suggested under NABH 5^{th} edition. Administrative permission was taken for carrying out the study. The objective of the study was explained to the study participants in brief and post which an informed consent was obtained.

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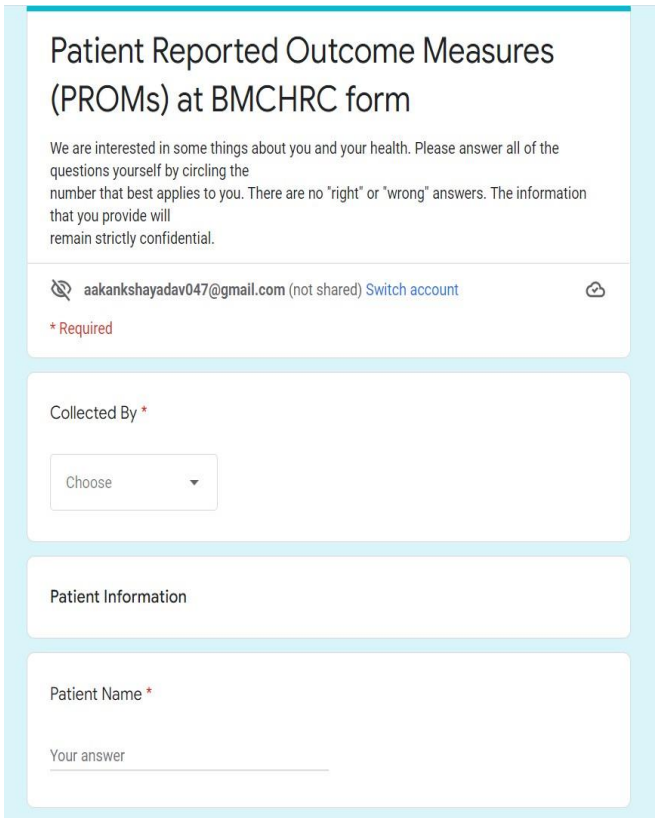
ANNEXURE:

Research Questionnaire:



Patient Reported Outcome Measures (PROMs) at BMCHRC form

We are interested in some things about you and your health. Please answer all of the questions yourself by circling the
number that best applies to you. There are no "right" or "wrong" answers. The information that you provide will
remain strictly confidential.

aakankshayadav047@gmail.com (not shared) Switch account

* Required

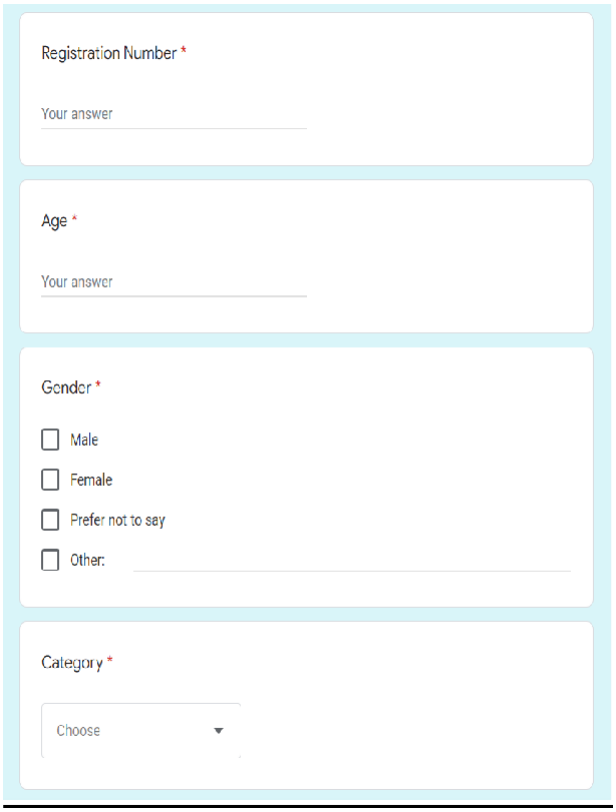
Collected By *

Choose

Patient Information

Patient Name *

Your answer



Registration Number *

Your answer

Age *

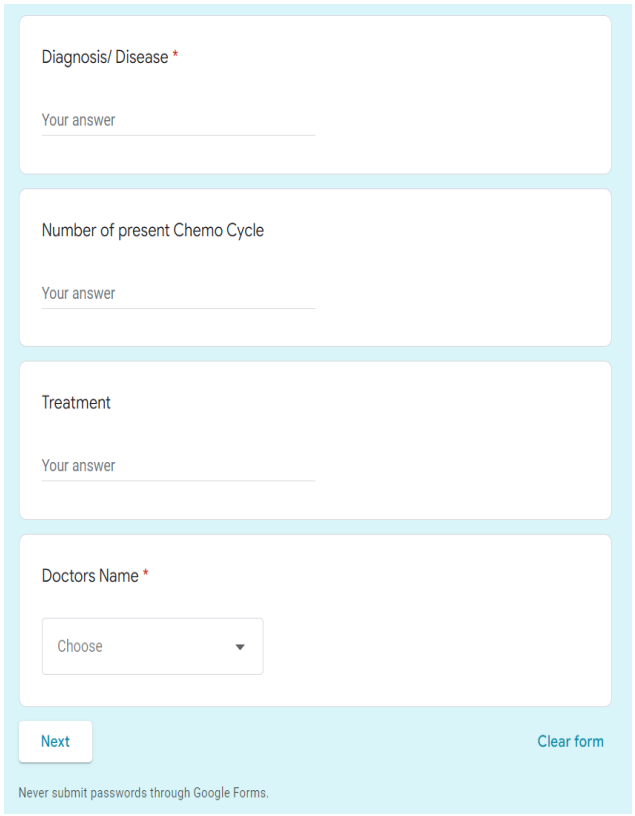
Your answer

Gender *

- Male
- Female
- Prefer not to say
- Other:

Category *

Choose



Diagnosis/ Disease *

Your answer

Number of present Chemo Cycle

Your answer

Treatment

Your answer

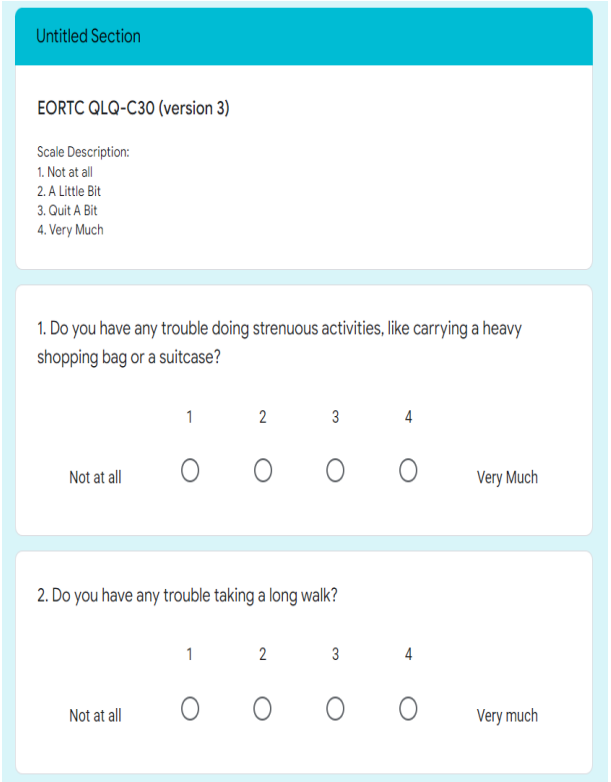
Doctors Name *

Choose

Next

Clear form

Never submit passwords through Google Forms.



Untitled Section

EORTC QLQ-C30 (version 3)

Scale Description:
1. Not at all
2. A Little Bit
3. Quit A Bit
4. Very Much

1. Do you have any trouble doing strenuous activities, like carrying a heavy shopping bag or a suitcase?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

2. Do you have any trouble taking a long walk?

	1	2	3	4	
Not at all	○	○	○	○	Very much

3. Do you have any trouble taking a short walk outside of the house?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

4. Do you need to stay in bed or a chair during the day?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

5. Do you need help with eating, dressing, washing yourself or using the toilet?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

During the past week:

6. Were you limited in doing either your work or other daily activities?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

7. Were you limited in pursuing your hobbies or other leisure time activities?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

8. Were you short of breath?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

9. Have you had pain?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

10. Did you need to rest?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

11. Have you had trouble sleeping?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

12. Have you felt weak?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

13. Have you lacked appetite?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

14. Have you felt nauseated?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

15. Have you vomited?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

16. Have you been constipated?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

17. Have you had diarrhea?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

18. Were you tired?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

19. Did pain interfere with your daily activities?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

20. Have you had difficulty in concentrating on things ,like reading a newspaper or watching television?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

21. Did you feel tense?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

22. Did you worry?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

23. Did you feel irritable?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

24. Did you feel depressed?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

25. Have you had difficulty remembering things?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

26. Has your physical condition or medical treatment interfered with your family life?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

27. Has your physical condition or medical treatment interfered with your social activities?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

28. Has your physical condition or medical treatment caused you financial difficulties?

	1	2	3	4	
Not at all	○	○	○	○	Very Much

For the following questions please circle the number between 1 and 7 that best applies to you

29. How would you rate your overall health during the past week?

	1	2	3	4	5	6	7	
Very Poor	○	○	○	○	○	○	○	Excellent

30. How would you rate your overall quality of life during the past week?

	1	2	3	4	5	6	7	
Very Poor	○	○	○	○	○	○	○	Excellent

Remarks

Your answer

Back Submit Clear form