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Factors Associated with Functional Well-Being and Psychological Parameters among Cancer Patients Receiving Chemotherapy Admitted to a Select Cancer Hospital in Bagalkot District - An Exploratory Study

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Abstract

Background: The global burden of cancer was estimated to have increased to 18.1 million new cases and 9.6 million deaths in 2018. One in 10 men and one in 10 women will develop cancer, and a similar proportion will die from it. Approximately 43.8 million people worldwide are surviving within five years of their cancer diagnosis, known as the five-year survival rate. The increase in cancer incidence could be attributed to many factors, including population growth, aging, and changes in some health and economic conditions related to cancer.

Method: The research approach adopted in this present study was quantitative non-experimental approach and the research design adopted was descriptive cross sectional explorative design. Fifty subjects with cancer who were receiving chemotherapy at the select hospital in Bagalkot, were selected using disproportionate stratified random sampling technique. A structured questionnaire was developed to collect the demographic information, and to assess the level of functional wellbeing, stress and anxiety. Stress was measured using Cohen's perceived stress scale. The degree of anxiety was measured with Zung self-rating anxiety scale (SAS). The data collected were analyzed using descriptive and inferential statistics.

Results: Cancer patients' level of understanding of cancer showed that most patients (40%) had a positive life experience, 20% had a good life experience (quality of life), and 40% had a bad life experience (quality of life). Stress levels of cancer patients showed that most patients experienced high stress (58%), 28% patients experienced slightly high stress and 14% experienced low stress. About 40% reported to have experienced mild to moderate anxiety, 30% reported mild to severe anxiety, 24% experienced severe anxiety, and 6% reported more than one level of anxiety.

Conclusion: A significant relationship between health and its psychological and social variables was noted. As a result, cancer patients experience significant levels of stress, anxiety, and health disorders while receiving chemotherapy.

Keywords: Assess, Functional wellbeing, Psychological parameters, Cancer patients, Chemotherapy, Cancer hospital

Introduction

According to World Health Organization (WHO), Quality of life (QoL) refers to a person's perception of life, values, goals, standards and preferences in traditional views. Quality of life is used as an important factor in clinical research. Patients often make lifestyle decisions which anticipate the impact of outcomes that are important to them rather than measuring lipoprotein levels, blood pressure, and electrocardiograms.[1-3]

It is estimated that the global burden increased to 18.1 million new cases and 9.6 million deaths in 2018. The total number of people worldwide surviving cancer within five years of being diagnosed (so-called five-year survival) is approximately 43.8 million.[4] Cancer is caused by many factors, including population growth and aging, as well as changes in some cancers associated with health and aging studies. This is especially true in fast-growing economies, where cancer has transformed from a disease associated with poverty and disease to one associated with higher social norms in industrialized countries.[2,5]

The main problem in oncology is measuring the quality of life of cancer patients. Cancer is particularly affected at all stages of the disease. In fact, general quality of life tools for cancer patients can be used to measure the overall impact of a patient's health on their life, while cancer treatment tools can measure the effects of specific cancers. In certain cancers, such as glioma, quality of life has become the endpoint of treatment comparisons in clinical trials. Therefore, the quality of life of these patients is linked to further improvement through clinical research.[6]

A recent report from the US National Cancer Registry Program (NCRP) estimated that the number of cancer patients could increase from 1.39 million in 2020 to 1.57 million in 2025, an increase of approximately 20%. But the good news is that at least a third of all cancers are preventable. According to the recently released National Cancer Registry Project 2020 report, cancer cases in India are expected to increase from 1.39 million to 1.57 million by 2025. According to the current situation, it is reported that the number of cancer patients nationwide will reach 1.39 million in 2020. The report stated that the count of cancer patients will increase to 1.57 million in 2025.[9]

Material and Methods

Research approach

Non-experimental approach, descriptive cross sectional explorative research design.

Setting of the study

Kerudi Cancer Hospital, Bagalkot.

Data collection method

The sample was selected using convenient sampling technique. The researcher randomly selected Kerudi Cancer Hospital for the study. All the patients with cancer receiving chemotherapy, aged more than 18 years were selected.

Sample size: Fifty cancer patients

Sampling technique: Convenient sampling technique.

Population: In this study, all the patients with cancer receiving chemotherapy in Bagalkot district were selected as the target population.

Accessible population: The accessible population considered for the study included patients with cancer receiving chemotherapy at Kerudi Cancer Hospital, Bagalkot.

Variables under study

Independent variables: Functional well-being

Dependent variable: Psychological determinants - Stress and anxiety.

Socio-demographic variables: Age, gender, type of family, education, religion, number of members in the family, marital status, family income, dietary pattern, occupation.

Data Collection Procedure

Prior permission was obtained from sajjalashree institute of nursing sciences (sions) of Bagalkot President BV V Sangha. Permission was taken from the director of Kerudi Cancer Hospital, Bagalkot. This study obtained written and verbal informed consent from the cancer patients receiving chemotherapy. The interview method was applied to illiterate cancer patients undergoing treatment, and the self-report method was applied to cancer patients undergoing chemotherapy. Data collection took place between 9 am - 5 pm based on subject to subject availability.

Statistical Analysis

The data were analysed using descriptive and inferential statistics. Numerical data obtained from the sample was organized and summarized with the help of descriptive statistics like percentages, mean, median and standard deviation. Chi-square test was used to determine the association of functional wellbeing and psychological parameters with selected demographic variables among patients receiving chemotherapy for cancer treatment.

Ethical Clearance Institutional Ethical Clearance Certificate: submitted (Ref No. BVVS/SIONS/IEC/2021-22/225Date: -25-06-2021)

Results

The data were analyzed with descriptive and statistical analyses. Numerical data obtained from the sample was organized and calculated with the help of statistics such as percentage, mean, median, standard deviation. Chi-square test was used to determine the relationship between health & psychological disorders and selected demographic variables among cancer patients receiving chemotherapy.

Part I: Description of baseline factors/sociodemographic factors

Age (in years): The age wise distribution demonstrated that 6% of patients were in 1-10 years age group, 12% were in 11-20 years age group, and 32% were in 21-30 years age group. About 50% were above 31 years of age.

Gender: The gender percentage showed that 44% of cancer patients were males and 56% were females.

Education: In terms of education, 6% completed SSLC, 22% completed PUC, 18% completed college or above. Majority of patients (54%) considered as another level of education.

Type of family: The sample was divided based on family percentage. Most cancer patients in the present study (50%) were from nuclear families, while 48% were from joint families, while 2% had other people.

Religion: Most of the cancer patients (60%) in this study belonged to the Hindu community, 30% belonged to the Muslim community, while 10% belonged to Christian community.

Number of family members: About 2% of cancer patients included in this study had 1-2 members in their family, 46% of cancer patients had 2-4 members in their family and 52% of cancer patients had more than 6 members in their family.

Marital status: The ratio obtained by dividing the sample with marital status showed that 20% of the patients were unmarried, 54% were married and 26% were widowed.

Family income: In terms of percentage of household income, majority of cancer patients (26%) had an income of Rs 5,000-10,000, 42% had an income of Rs 10,000-20,000, 18% had income of Rs. 10,000 - 30,000, while 14% had an income of more than 30,000.

Dietary pattern: About 50% of the study subjects were vegetarians.

Occupation: Among the cancer patients included, 16% were students, 12% were government employees, 18% were private sector employees, and 54% were self-employed.

Part II: Analysis of the relationship of quality of life and its psychological determinants in cancer patients receiving chemotherapy

FACT-G Scale

1. PWB (physical well-being) – 7-item score with a range of 0-28
2. SWB (social well-being)– 7-item score with a range of 0-28
3. EWB (emotional well-being)– 6-item score with a range of 0-24
4. FWB (functional well-being) – 7-item score with a range of 0-28

Assessment of level of knowledge of FAGT-G scale among cancer patients

- Representatives of cancer-related quality of life of cancer patients, most patients (40%) have a positive life experience, 20% have a good life, and 40% have a bad life experience in terms of quality of life.

Assessment of level of stress (Cohen's perceived stress scale) among cancer patients

- Description of stress levels in cancer patients showed that most patients (58%) experienced high stress, 28% patients experienced slightly high stress and 14% experienced low stress.

Assessment of level of anxiety (Zung Self rating scale) among cancer patients

- On estimation of levels of anxiety in cancer patients, most patients (40%) experienced mild to moderate anxiety, 30% experienced moderate to severe anxiety, 24% experienced severe anxiety while 6% did not report any.

Part III: Assessment of differences between levels of quality of life and its psychological determinants among cancer patients receiving chemotherapy

Table 1: Mean, standard deviation of Quality of life scores, N-50

	Max score	Mean	SD	Mean%
Physical well being	35	103.71	38.25	20.6%
Social well being	35	106.28	33.50	21.2%
Emotional well being	30	110.66	34.45	22%
Functional well being	35	111.28	37.05	22.2%

The survival score of cancer patients showed an overall health benefit of 20.6%, with a mean of 103.71 and a standard deviation of 38.25. The percentage of total happiness was 21.2%, with a mean of 106.28 and a standard deviation of 33.50. The health percentage was approximately 22% overall, with a mean of 110.66 and a standard deviation of 34.45. General health status was 22.2% with a mean of 111.28 and a standard deviation of 37.05 (Table 1).

Table 2: Mean, standard deviation of Cohn's perceived stress score, N-50.

	Max score	Mean	SD	Mean%
Perceived stress scale	56	56	14.75	11.2%

The mean, SD, and percentage of Cohn's perceived stress scores representing cancer patients showed that the total percentage of emotional need stress was 11.2%, with a mean of 56 and SD of 14.75 (Table 2).

Table 3: Mean, Standard deviation of Zung-self rating score, N-50

	Max score	Mean	SD	Mean%
Zung-self rating scale	80	102.78	44.12	20.4%

When the mean, SD and Zung's self-evaluation percentage were expressed in cancer patients, it was seen that Zung's self-evaluation percentage was 20.4%, the mean was 102.78 and the SD was 44.12 (Table 3).

H1: - There will be a significant difference between level of quality of life and its psychological determinants among cancer patients receiving chemotherapy.

Part IV: Association of the quality of life and psychological parameters scores with their socio demographic variables among cancer patients

Table 4: Association of quality of life scores of cancer patients with their socio-demographic variables, N-50

Demographic Variables	Value of Chi-Square test	*P* value	Level of Significance
Age	0.019	0.88	NS
Gender	0.04	0.94	NS
Education	0.005	0.945	NS
Type of family	1.203	0.27	NS
Religion	2.078	0.14	NS
Number of family members	0.558	0.45	NS
Marital status	0.263	0.60	NS
Family income	1.202	0.27	NS
Dietary pattern	0.231	0.63	NS
Present occupation	0.325	0.56	NS

Note: NS-Non-significant, S-Significant, DF-1

The reported relationship between patients' quality of life scores and social variables was based on the relationship between quality of life in cancer patients and demographic differences (age, gender, education, family type, religion, number of family members, marital status, family income or diet, patient activity), i.e.,, There was no significant effect of variables such as age, gender, education, type of cancer, marital status, family, income, diet, occupation of the patient on the quality of life of cancer patients (Table 4).

Table 5: Association of perceived stress scores of cancer patients with their socio-demographic variables, N-50

Demographic Variables	Value of Chi-Square test	*P* value	Level of Significance
Age	0.927	0.33	NS
Gender	0.215	0.64	NS
Education	0.081	0.77	NS
Type of family	1.422	0.23	NS
Religion	0.397	0.52	NS
Number of family members	3.848	0.049	S
Marital status	0.791	0.37	NS
Family income	0.325	0.56	NS
Dietary pattern	5.966	0.014	S
Present occupation	0.980	0.32	NS

Note: NS-Non-significant, S-Significant, DF-1

Correlations representing patients' stress scores with social-demographic variables showed that there was no significant relationship between the quality of life of cancer patients and patients' demographic characteristics such as age, gender, education, family type, religion, marital status, family income, members in the family and patients' affairs. Similarly, there was a positive relationship between stress scores among cancer patients and social variables such as family members (x2-3.848; *P* <3.84) and diet (x2-5.966; *P* <3.84). Thus, it was determined that H2 was valid for socio-demographic variables such as family members and dietary habits of cancer patients (Table 5).

Table 6 shows the relationship between patients' Zung self-assessment scale scores and sociodemographic variables. No significant relationship between cancer patients' quality of life and demographic variables (such as age, gender, education, family type, religious belief, marriage, illness, family income, diet, patient's profession was observed. Similarly, there was a positive relationship between cancer patients' Zung self-assessment scores and social variables such as family members (x2-5.632; *P* <3.84). Therefore, H2 could be applied to relationships such as family members of cancer patients.

Table 6: Association of Zung-self rating scale scores of cancer patients with their socio-demographic variables, N-50

Demographic Variables	Value of Chi-Square test	*P* value	Level of Significance
Age	0.141	0.70	NS
Gender	1.751	0.18	NS
Education	2.538	0.11	NS
Type of family	1.389	0.23	NS
Religion	0.496	0.48	NS
Number of family members	5.632	0.017	S
Marital status	1.202	0.27	NS
Family income	0.216	0.64	NS
Dietary pattern	0.082	0.77	NS
Present occupation	1.213	0.27	NS

Note: NS-Non-significant, S-Significant, DF-1

Discussion

This was a non-experimental, cross-sectional, descriptive study that evaluated factors associated with health and mental health problems among cancer patients receiving chemotherapy. The definition of age was different in this study. About 6% of patients were in 1-10 years age group, 12% were in 11-20 years age group, and 32% were in 21-30 years age group. About 50% were above 31 years of age.[10]

When the distribution of the sample by education level was examined, it was observed that majority of cancer patients, 22% were primary school/high school graduates, 6% completed SSLC, 22% completed PUC and 18% have completed their Bachelor's degree, 32% completed their undergraduate education. He realized that most of them were educated. Most of the patients were high school graduates. Another study found that the average years of education was 18 years, and 48.2% of patients had 11 or more years of education.[11,12]

In our study, most of the subjects (50%) were from joint families, 48% from were from nuclear families, 2% were from separated families. Previous research has shown that nuclear families and their lifestyle can be a contribuotry factor for cancer. Our study showed that 92% belong to joint family.

Conclusion

The present study findings shed light on the patients with cancer receiving chemotherapy. It has been proven that cancer patients undergoing chemotherapy experience positive influences from factors such as quality of life and psychological parameters.

Conflict of interest

None

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