

A Study on Suicidal Intent, Quality of Life, Medical and Psychiatric Comorbidity in Cancer Patients at a Tertiary Care Hospital in Puducherry

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ABSTRACT

Background- Cancer is now widely recognised as a new epidemic globally which accounts for nearly 10 million deaths in year 2020.

Aims and Objectives-The aim of the study was to estimate suicidal ideation among cancer patients and to evaluate the association between suicidal intent with the quality of life, medical and psychiatric comorbidities.

Methods-The study group included 70 cancer patients who were surgically treated in the Department of Surgical Oncology in a tertiary care hospital in South India. The sample size was calculated using Open Epi Version 3.0. Sampling was done using consecutive sampling method. The study was conducted from March 2021 to September 2022. A socio-demographic information form, HADS (Hospital Anxiety Depression Scale), Beck Suicide Intent Scale and WHO-QOL BREF (WHO Quality of Life BREF) were used. Results- In our study 12.9% reported having attempted suicide in the recent past, 18.6% scored abnormal on anxiety scale and 40% scored depression level on HADS.

Conclusions- Cancer patients are at increased risk of developing many psychiatric illnesses including anxiety, depression and suicidal attempts. The QOL

of cancer patients are affected by these psychiatric comorbidities. Timely assessment and intervention can improve their QOL and also reduce the risks of suicide. There is a significant correlation between anxiety, depression and suicide attempt.

Keywords: Suicide, Anxiety, Quality of Life, Cancer

INTRODUCTION

Cancer is one of the leading causes of death worldwide, which accounts for nearly 10 million deaths in 2020. As per WHO data, India had an estimated 1.16 million newly diagnosed cancer cases in the year 2018.

In a developing country like India, where around 70% of the population is dependent on agriculture and reside in rural and suburban areas, the high cost of treatment could severely impact the Quality of Life. Cancer patients are likely to suffer psychiatric symptoms more than the general population, or a pre-existing psychiatric illness can have an impact in terms of treatment compliance as well as the courage to face the challenge fostered by newly diagnosed cancer. Cancer patients are at risk for committing suicide. Suicide among cancer patients can be attributed to many reasons. Cancer pain is considered among the worst tolerable. Patients with cancer

often lose hope in life. The high cost of treatment could be another reason, wherein patients may think of putting an end to life in order to avoid undue financial burden on the care givers.

Terminally ill patients and patients diagnosed with rapidly spreading cancer are more likely to attempt suicide than those with benign tumors.

This study aims to find out the burden of the problem in southern part of India, where suicide rate in general population is quite high, 32.5 per lakh (Puducherry), as compared to national average of 10.4 per lakh (NCRB Data).

- **Need for the study**

Cancer not only causes physical pain, but has an overall impact on person's motive to live life. Not much has been done epidemiologically to assess the various mental health issues, related factors and the impact of socio-economic status, suicidal ideation and their impact on treatment compliance, desire to live and the prognosis in cancer patients.

We therefore, took an opportunity to study the suicidal ideation, various factors including quality of life, economic status and medical and psychiatric comorbidity in cancer patients to get an insight into the emerging problem in Indian scenario.

METHODOLOGY

STUDY DESIGN-

- A Hospital based cross-sectional descriptive study was conducted from March 2021 to September 2022.

SETTINGS- The recruitment of sample was from a tertiary care centre from a City in South India. Prior ethical approval was taken before beginning the study.

PARTICIPANTS-

All patients above 18 years of age diagnosed with any type of cancer and operated and willing to participate in this study were recruited. After explaining the study's objectives and purpose, a detailed information sheet was provided to each participant, and written informed consent was obtained.

SAMPLE SIZE ESTIMATION

The Sample size was calculated with Anticipated frequency 50%, Confidence interval 95%, Margin of error = 9%

Sample size calculated was 70, with 10% non-response rate, minimum expected sample size = 60.

Sample size was calculated using Open Epi version 3.0

METHOD OF DATA COLLECTION

The study was conducted under the Department of Psychiatry in collaboration with Department of Surgical Oncology in the same institute. The study was conducted during March 2021 to September 2022. Patients undergone surgical treatment for cancer during this period were interviewed after their consent.

Patients were then introduced regarding the study being conducted and the aims and objectives of the study in their own language. Patients were assured that the confidentiality of their identity and the information given by them will be maintained. They were also assured that they were free to quit from the study, at any time without having any question being raised. Also, they were taken into confidence that their participating in or not will not have any bearing on the health services being provided to them. Once they were ready, a written informed consent regarding the willingness to participate in the study was taken.

- Patient's details were obtained using a semi-structured questionnaire consisting of sociodemographic data, educational status, marital status, duration of illness, type and stage of cancer

INSTRUMENTS: Following validated psychiatric tool were used for the screening of patients with cancer.

- **International Classification of Disease-10** A comprehensive clinical interview to make a Psychiatric Diagnosis based on ICD-10 Clinical Description and Diagnostic Guidelines were used in the study after getting

opinion from senior qualified Psychiatrist.

Tamil version as well as the original English version of the following scales were used to assess the various parameters among cancer patients.

- **BECK SUICIDE INTENT SCALE**

We used Beck's suicide intent scale for assessing suicide intent. It contains 20 items, each scores from 1 to 3 points. Total score of 15-19 is recorded as low intent, score 20-28 is recorded as medium intent, and score 29 and above is recorded as high intent.

- **HADS (Hospital Anxiety Depression Scale)**

A self-assessment scale has been developed and found to be a reliable instrument for detecting states of depression and anxiety in the setting of a hospital medical outpatient clinic. This scale consists of 7 itemed questionnaire for both anxiety and depression. Each item is graded 0-3. Total Scoring 0-7 = Normal, 8-10 = Borderline abnormal (borderline case), 11-21 = Abnormal (case).

- **WHO Quality of Life Scale-BREF(WHOQOL-BREF):**

It is a 26 item questionnaire consisting of 4 domains related to physical, psychological & environmental health, and social relationships. Every item is scored from 1 to 5 and then transformed to a 0- 100 scale linearly.

DATA ANALYSIS AND STATISTICAL TEST USED

Statistical analysis was performed using Statistical Package for Social Science (SPSS) licensed version 23.0 for Windows (SPSS Inc., Chicago). Mean and Standard deviation were used for continuous data and frequency and proportion for categorical value. To evaluate the association between suicidal intent with the quality of life, medical and psychiatric comorbidity in cancer patients, for categorical variables, the chi-square test was used. Pearson correlation was used for continuous

variable. P value<0.05 was considered as statistically significant.

RESULT

Data Analysis and Interpretations of Results (Table 1,2,3,4,5)

DATA ANALYSIS AND INTERPRETATION OF RESULTS

Table 1 Diagnosis

	Frequency	Percent
Carcinoma Breast	10	14.3
Carcinoma Lung	2	2.9
Soft tissue sarcoma	2	2.9
Carcinoma buccal mucosa	11	15.7
Carcinoma endometrium	5	7.1
Carcinoma ovary	5	7.1
Ovarian cyst	2	2.9
Carcinoma tongue	4	5.7
Carcinoma Stomach	5	7.1
Carcinoma Thyroid	3	4.3
Carcinoma Rectum	1	1.4
Sigmoid carcinoma	1	1.4
Basal cell carcinoma	1	1.4
Carcinoma Penis	2	2.9
Carcinoma Lip	2	2.9
Mucoepidermoid carcinoma	1	1.4
GIST	1	1.4
Mesentric Carcinoma	1	1.4
Pancreatic carcinoma	1	1.4
Mandibular Carcinoma	4	5.7
Marjolin carcinoma	2	2.9
Carcinoma Uterus	1	1.4
Meibonian gland carcinoma	1	1.4
Metastatic cancers	2	2.9
Total	70	100.0

Maximum frequency was seen with carcinoma buccal mucosa 11(15.7%) followed by carcinoma breast 10(14.3%). Maximum frequency of cancer was seen in Head and Neck region constituting 38.6% (27), followed by abdominal and gynaecological region each comprising 18.6%.

Table 2 Medical comorbidities

	Frequency	Percent
Nil	57	81.4
Diabetes Mellitus	8	11.4
Hypertension	1	1.4
Diabetes and Hypertension	4	5.7
Total	70	100.0

Total 13 patients reported having medical comorbidity mostly diabetes and

hypertension with 8 having diabetes, 1 hypertension and 4 having both diabetes and hypertension.

Table 3 Psychiatric co morbidities

	Frequency	Percentage
Nil	69	98.6
Depressive disorder	1	1.4
Total	70	100.0

Only 1(1.4%) patient admitted suffering from previously diagnosed depressive disorder.

Table 4 History of recent suicidal attempts

	Frequency	Percent
No	61	87.1
Yes	9	12.9
Total	70	100.0

Among 70 of our patients, 9 (12.9%) reported having attempted suicide in the recent past.

Table 5

Diagnosis			
History of recent suicidal attempts		Frequency	Percent
No	Carcinoma Breast	8	13.1
	Carcinoma Lung	2	3.3
	Soft tissue sarcoma	2	3.3
	Carcinoma buccal mucosa	10	16.4
	Carcinoma endometrium	4	6.6
	Carcinoma ovary	5	8.2
	Ovarian cyst	1	1.6
	Carcinoma tongue	4	6.6
	Carcinoma Stomach	4	6.6
	Carcinoma Thyroid	2	3.3
	Carcinoma Rectum	1	1.6
	Sigmoid carcinoma	1	1.6
	Basal cell carcinoma	1	1.6
	Carcinoma Penis	1	1.6
	Carcinoma Lip	2	3.3
	Mucoepidermoid carcinoma	1	1.6
	GIST	1	1.6
	Mesentric Carcinoma	1	1.6
	Pancreatic carcinoma	1	1.6
	Mandibular Carcinoma	4	6.6
Marjolin carcinoma	1	1.6	
Carcinoma Uterus	1	1.6	
Meibonian gland carcinoma	1	1.6	
Metastatic cancers	2	3.3	
Total	61	100.0	
Yes	Carcinoma Breast	2	22.2
	Carcinoma buccal mucosa	1	11.1
	Carcinoma endometrium	1	11.1
	Ovarian cyst	1	11.1
	Carcinoma Stomach	1	11.1
	Carcinoma Thyroid	1	11.1
	Carcinoma Penis	1	11.1
	Marjolin carcinoma	1	11.1
	Total	9	100.0

Among the cancer patients who attempted suicide the frequencies of suicide attempts were maximum with carcinoma breast constituting 2(22.2%) followed by carcinoma buccal mucosa, carcinoma

endometrium, ovarian cyst, stomach, thyroid, penis and marjolin carcinoma. Following are the relevant findings of our study:

Sociodemographic profile:

Age: The mean age of patients was 53.86 years. **Sex:** Of the 70 cancer patients studied, 31 (44.3%) were male and 39 (55.7%) were female. **Education:** Most of our patients were educated with 42 (60.0%) studied till primary, 14 (20.0%) till secondary and 1 (1.4%) patient studied till master degree. 13 (18.6%) of our patients did not have any school education.

Marital status: All the cancer patients studied were married.

Socioeconomic status: Around 55.7% (39) of our patients belonged to lower middle class, and only 12.9% (9) patients were from Upper class.

Occupation: Of the 70 cancer patients, 35 (50.0%) were unemployed, and out of the remaining employed, most were semiskilled = 21 (30%).

Duration of follow up and Surgery: All cancer patients were assessed 15 days after surgery.

Diagnosis: Maximum frequency was seen with carcinoma buccal mucosa = 11 (15.7%) followed by carcinoma breast = 10 (14.3%).

Site of cancer: Maximum frequency of cancer was seen in Head & Neck region constituting 38.6% (27), followed by Abdominal and Gynaecological region each comprising 18.6%.

Medical comorbidities: Total 13 patients reported having medical comorbidity, mostly Diabetes and Hypertension with 8 having Diabetes Mellitus, 1 having Hypertension and 4 having both Diabetes and Hypertension.

Psychiatric comorbidities: Only 1 (1.4%) patient admitted suffering from previously diagnosed Depressive disorder.

History of recent suicidal attempts: Among 70 of our patients, 9 (12.9%) reported having attempted suicide in the recent past.

Anxiety: 22 of our patients were found to be having Anxiety. Among all, 9 (12.9%) had borderline anxiety score and 13 (18.6%) had abnormal anxiety score on HADS.

Depression: Out of 70 patients, 28 scored in the depressive range with 9 (12.9%) having borderline depression score and 19 (27.1%)

having abnormal depression score on HADS.

Beck suicide intent level: In our study group, 9 patients reported having attempted suicide in the past. Among the 9 cancer patients who attempted suicide, 1 (1.4%) had low intent and 8 (11.4%) had high intent, assessed using Beck suicide intent scale. Among the cancer patients who attempted suicide, 3(33.3%) were male and 6 (66.7%) were female.

Out of 9 cancer patients who attempted suicide, 8 (88.9%) had primary schooling and 1 (11.1%) had studied till secondary education. Among the cancer patients who attempted suicide 4 (44.4%) belonged to middle class and 5 (55.6%) were from lower middle class. In the group which did not report having any suicide attempt nearly half 55.7% (34) were from lower middle class and 9 (14.8%) belonged to upper middle class. Seven (77.8%) out of total 9 patients who reported suicide attempt were unemployed and 2 (22.2%) were semiskilled workers.

Among the cancer patients who attempted suicide the frequencies of suicide attempts were maximum with carcinoma breast constituting 2(22.2%) followed by carcinoma buccal mucosa, carcinoma endometrium, ovarian cyst, stomach, thyroid, penis and marjolin carcinoma.

Most of the patients who attempted suicide had cancers related to head & neck, thoracic region, gynaecological each accounting 22.2%. Two patients had cancers not included in the above group.

Only 1 (11.1%) patient who attempted suicide had a medical comorbidity (diabetes mellitus). Overall diabetes was the most common medical comorbidity among all patients. None among the suicide attempted patient had any pre diagnosed psychiatric comorbidity. All the 9 patients who attempted suicide had abnormal anxiety score on HADS.

Among the patients who did not report having attempted suicide, majority- 42 (68.9%) had normal score on HADS, 9 (14.8%) had borderline and 10 (16.4%) had

abnormal score, whereas all 9 patients who attempted suicide scored abnormally high on HADS Depressive score.

Eight (88.9%) out of 9 patients who attempted suicide had high suicide intent on Beck suicide intent scale and 1 had low intent. Among the patients who attempted suicide, 8 had primary schooling and 1 had studied up till secondary education.

There was no significant difference in these parameters (sex, education, medical & psychiatric comorbidity, diagnosis of cancer and site of cancer), as well as between occupation and socioeconomic level between the patients who attempted suicide and the non-attempters ($p>0.05$). There is statistically significant difference in relation to the scores of hospital anxiety scale with the severity of beck intent and Non suicide attempters.

There was a statistically significant difference in relation to the scores of hospital depression scale with the severity of beck intent and Non suicide attempters. Patients who attempted suicide had higher scores on depression scale. There is significant positive correlation between Anxiety score and Depression score. There is significant negative correlation between Depression score and Domain 4. There is significant positive correlation between Domain 1 score with Domain 2 and Domain 4 score and Total QOL

There is significant positive correlation between Domain 2 score with Domain 4 and Total QOL. Significant positive correlation between Domain 3 with Domain 4 and Total QOL. There is significant negative correlation between Domain 4 and Depression score. Significant positive correlation between Domain 4 and Total QOL. There is significant positive correlation between Beck intent score and Domain 4.

DISCUSSION

The news of being diagnosed with Cancer is understandably good enough to bring lot of worries and fear.

Cancer is one among the leading causes of death worldwide accounting for nearly 10 million deaths in 2020. Cancer pain is known to be one among the worst tolerable. There are lot of physical symptoms and embarrassment it causes due to disfigurement. Due to the fear of death, quality of life and the pain and other somatic symptoms it causes, cancer patients are always at risk of developing multiple psychiatric complications including anxiety, depression and suicidal thoughts.

In the past, few studies have been conducted to study the suicidal ideation and correlation between various comorbidities and suicide among cancer patients. Most of the studies however, are from western world and the Indian scenario as such, has largely been not yet uncovered. Few studies gave good data regarding the prevalence of suicide among cancer patients, but the association of suicide with other factors was missing.

We therefore, took an initiative to study in detail and find out the correlation between various factors and suicide, apart from estimating the prevalence of suicide in this population. We used HADS, which is a validated tool to assess the anxiety and depression. It has 7 questions each for anxiety as well as depression. The scores range from 0-21. The scoring is done as 0-7= Normal, 8-10= Borderline abnormal (borderline case), and 11-21= Abnormal (case).

For evaluating the suicide intent, we used Beck suicide intent scale which was developed by Aaron Beck and his colleagues at the University of Pennsylvania for use with patients who attempt suicide but survive. It has 20 questions, but questions 15-20 are not included in total score. Scoring is done as 15-19= low intent, 20-28= medium intent, 29+ = high intent.

For assessing Quality of Life, we used WHO-QOL BREF, which is a validated tool and widely used. For patient's convenience and understanding, we had used the Tamil Version of WHO-QOL BREF, which has been tested and re-tested in the past. It has total 26 questions which are grouped into 4

Domains and scores calculated which give a raw score which is then converted into transformed scores.

Pearson correlation was used to find the significant correlation between two variables. We used ANOVA to compare 2 or more Means. For finding the significant difference between two groups, chi-square was used in the study.

We had a total of 70 patients on whom we conducted study. We calculated sample size using open epi version 3.0.

The mean age of our patients was 53.86 years. Most of our patients were educated with 42(60.0%) studied till primary, 14(20.0%) till secondary and 1(1.4%) patient studied till master degree. 13(18.6%) of our patients did not have any school education. Of the 70 cancer patients studied, 31(44.3%) were male and 39 (55.7%) were female.

Among the cancer patients who attempted suicide, 4 (44.4%) belonged to middle class and 5 (55.6%) were from lower middle class. In the group which did not report having any suicide attempt nearly half 55.7% (34) were from lower middle class and 9 (14.8%) belonged to upper middle class. Maximum frequency was seen with carcinoma buccal mucosa 11(15.7%) followed by carcinoma breast 10(14.3%). Maximum frequency of cancer was seen in Head and Neck region constituting 38.6% (27), followed by abdominal and gynaecological region each comprising 18.6%.

In our study among 70 patients, 9 (12.9%) reported having attempted suicide in the recent past. This is comparable to the studies conducted in the past by Latha, K.S; Bhat, S.M (2005), where the prevalence of suicidal ideation was found to be 9.2%.

In our study population, 28 patients (40%) scored depression level on HADS, with 9 (12.9%) falling in borderline depression and 19 (27.1%) scoring abnormal on depression inventory. This is higher than the prevalence (29%) found in a previous study conducted by Monika Thakur, Bandana Gupta et al.

There was a statistically significant difference in relation to hospital depression scores among those who attempted suicide and those who did not, with the depression score on higher side among those who attempted suicide, according to the chi-square test. Likewise, there was significant difference in hospital anxiety score among those with high suicide intent and those who did not attempt.

In our study, there was a significant positive correlation between anxiety score and depression score. There was significant positive correlation between beck intent score and domain 4 of QOL. Significant negative correlation was found between depression score and domain 4 of QOL. There was no significant difference in these parameters (sex, education, medical & psychiatric comorbidity, diagnosis of cancer and site of cancer), as well as between occupation and socioeconomic level between the patients who attempted suicide and the non-attempters ($p>0.05$).

Our study had certain limitations. First of all, we had a relatively small sample size, the results, therefore cannot be generalized to the entire cancer populations. It was conducted in a single institute, which might have bearing on the prevalence of medical and psychiatric comorbidities, since the prevalence of these illnesses vary according to the diet patterns, cultural beliefs & practices and lifestyle etc.

In our study we used Beck suicide intent scale which can be used only in persons who had attempted suicide but not in those who did not attempt but had such thoughts. We could have used some other scales like SIS. We did not evaluate the correlation between cancer stage and suicide attempt, which might have a positive correlation and this is a drawback of our study. Furthermore, we had not assessed the personality traits among cancer patients which might have an impact on QOL as well as Suicidal ideation, since it is a known fact that persons with certain personality types are more vulnerable to suicide attempts.

Our study on the other hand has multiple advantages over many previous studies. We have evaluated the relationship between various factors and QOL as well as Suicide attempts, this was lacking in many previous studies. We also included socioeconomic status and medical comorbidity which can have an important impact on either seeking treatment or on the prognosis as well as QOL, since very poor may not afford high cost of treatment and medical comorbidity can add on to the cost of treatment.

CONCLUSION

Cancer patients are at increased risk of developing many psychiatric illnesses including anxiety, depression and suicidal attempts. The QOL of cancer patients are affected by these psychiatric comorbidities. Timely assessment and intervention can improve their QOL and also reduce the risks of suicide. There is a significant correlation between anxiety, depression and suicide attempt. Assessment of anxiety and depression can reduce the suicidal intent and save patient's life.

Cancer is no more a disease of elderly and it's not restricted to any geographical area. Awareness regarding screening tests for Cancer like Breast Carcinoma, Cervical Carcinoma etc can greatly prevent progression of disease stage.

Emphasis needs to be given to curb the menace of substance abuse which are particularly related to cancers like oral cancers, hepatocellular cancers and other types of cancers.

Family support is essential to motivate the patients to live a quality life. It is also important that the government and non-government organizations consider cancer as a new epidemic and make plans and policies like, for other non-communicable diseases.

It is the need of time that we start seeing cancer not with fear but with care. All

patients diagnosed with cancer should mandatorily be assessed psychologically to see their psychological status, any psychiatric illnesses and timely intervention be given.

Declaration by Authors

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