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(RESEARCH ARTICLE)

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# Hospital anxiety and depression among cancer patients undergoing various cancer treatment in selected tertiary Hospital, Mangaluru

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## Abstract

**Background**: Anxiety and depression are widespread in cancer patients. Cancer is the most common diagnosis all over the world. Lack in patient's coping mechanism may lead to anxiety and depression. Patients suffering from untreated depression or anxiety, may be less likely to take their cancer treatment medicine and maintain good health practices. The purpose of this study is to determine whether the diagnosis can be used to predict anxiety and depression.

**Materials and Methods**: In this study the population is all the cancer patients aged 18 and above undergoing various cancer treatment in selected hospital, Mangaluru. A quantitative descriptive approach is used to assess hospital anxiety and depression among cancer patients undergoing various cancer treatments who met the inclusion criteria were selected by purposive sampling technique. The tool used was standardized Hospital Anxiety and Depression Scale. The data was analysed using descriptive and inferential statistics. The result shows that there is significant association between depression and baseline variables. There is an association between depression and selected baseline variables like age, sex with (P = <0.05) level of significance. Kindly remove this (which is irrelevant )

**Result**: Out of 150 cancer patients, 58.7% of the participants were abnormal, 34.0% were borderline and 7.3% were normal in relation to anxiety. And in relation to depression in which majority i.e., 36.7% of the participants were normal, 32.7% had borderline and 30.7% were abnormal. There is no correlation between anxiety and depression score (p=0.129) which is not significant. The data analysed denotes that the obtained 'p' value is lesser than 0.05 level of significance. Thus, the research hypothesis is accepted. Hence there is significant association of anxiety with the baseline variables.

**Conclusion**: This study concludes that majority of the cancer patients undergoing various treatments had anxiety and depression.

**Keywords:** Hospital Anxiety; Depression; Cancer patients; Treatment

## 1. Introduction

Hospital Anxiety and depression are widespread in cancer patients. Cancer is the most common diagnosis all over the world. Lack in patient's coping mechanism may lead to anxiety and depression. Patients suffering from untreated depression or anxiety, may be less likely to take their cancer treatment medicine and maintain good health practices[1].

The Hospital Anxiety and Depression Scale, or HADS, was developed with the intention of providing a simple yet reliable tool for use in medical practice. Numerous international investigations have confirmed that, despite the word "hospital"

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in its title suggesting that it is only appropriate in this kind of setting, it is also appropriate in primary care and community settings[2].

Hospital anxiety was reported to be 20.3% prevalent in India and Hospital depression was found to be 24.8% prevalent. The proportion of patients suffering from Hospital anxiety and depression was 9.2% and 17.7% respectively[3].

A person can overcome any chronic illness with a strong mindset and constant support from family members. When he/she comes to know that they are suffering with cancer there are higher chances of them going into anxiety and depression when hospitalized[4].

It is projected that 9.6 million individuals lost their lives to cancer in 2017. Cancer is the second biggest cause of death worldwide, second only to cardiovascular illnesses, accounting for one in six deaths[5]. The protracted course of treatment, multiple hospitalizations, and chemotherapy side effects, along with the trauma of being diagnosed with cancer, all have a profound impact on the psychology of cancer patients. Hospital depression is the most common cancer-related symptom, affecting 15-25% of cancer patients[6]

## 2. Material and methods

An evaluative approach with descriptive design was adopted for study. The study was conducted among cancer patients receiving various cancer treatment in the inpatient department of oncology in selected hospital, Mangaluru. Total 150 cancer diagnosed patients with the age group between 18-65 years those who met the inclusion criteria were selected using purposive sampling technique for the study. The Baseline proforma, standardized Hospital Anxiety and Depression Scale were administered to cancer patients receiving chemotherapy and radiation therapy. The tool was submitted to 6 experts to establish content validity. Hospital anxiety and depression scale consist of 14 items in which 7 anxiety and 7 depression items. each answer was given a score 3,2,1,0 in Anxiety and 0,1,2,3 in depression Scoring system- 0-7: Normal ,8-10: Borderline abnormal (Borderline case),11-21: Abnormal. After a formal permission from the Institutional review committee, ethics committee and the hospital authority, and purpose of the study was explained to the samples. Care was taken for protecting the subjects from potential risks including their confidentiality, security and identity. The pilot study was conducted on 10 cancer patients. The analysis of the pilot study reveals that the study is feasible. The main study was conducted samples took around 10-15 minutes to fill the tool. The data collection was terminated by thanking the patients for their participation & cooperation. Data analyzed with descriptive and inferential statistics such as frequency, percentage, mean, standard deviation, mean percentage, chi square and Karl Pearson correlation coefficient.

## 3. Results

### 3.1. Analysis

The data were analysed using SPSS version 16.

*3.1.1. Section 1: Description of baseline variables*

**Table 1** Frequency and percentage distribution of subjects according to their baseline characteristics N=150

| Sl.no | Baseline variables | f | % |
|---|---|---|---|
| 1 | Age | | |
| | a) 18-27 | 6 | 4.0 |
| | b) 28-39 | 23 | 15.3 |
| | c) 40-51 | 42 | 28.0 |
| | d) 52-65 | 79 | 52.7 |
| 2 | Sex | | |
| | Male | 71 | 47.3 |
| | Female | 79 | 52.7 |

| | | | |
|---|---|---|---|
| 3 | Marital Status | | |
| | Unmarried | 12 | 8.0 |
| | Married | 116 | 77.3 |
| | Widow/widower | 22 | 14.7 |
| 4 | Education | | |
| | No formal education | 32 | 21.3 |
| | Primary | 61 | 40.7 |
| | Secondary | 57 | 38.0 |
| 5 | Occupation | | |
| | Employed | 83 | 55.3 |
| | Unemployed | 62 | 41.3 |
| | Retired | 5 | 3.4 |
| 6 | Monthly Income | | |
| | 5000-10000 | 80 | 53.3 |
| | 10001-15000 | 37 | 24.7 |
| | 15001-20000 | 24 | 16.0 |
| | 20001-25000 | 9 | 6.0 |
| 7 | Source of Funding | | |
| | Self | 25 | 16.7 |
| | Government Schemes | 125 | 83.3 |
| 8 | Site of cancer | | |
| | Reproductive system | 56 | 37.3 |
| | Gastrointestinal system | 73 | 48.7 |
| | Respiratory system | 12 | 8.0 |
| | Hematological | 6 | 4.0 |
| | Head and Neck | 3 | 2.0 |
| 9 | Stage of cancer | | |
| | I | 12 | 8.0 |
| | II | 56 | 37.3 |
| | III | 52 | 34.7 |
| | IV | 30 | 20.0 |
| 10 | Duration of treatment | | |
| | 1week- 6 months | 112 | 74.7 |
| | 7 – 12 months | 38 | 25.3 |
| 11 | Type of treatment | | |
| | Chemotherapy | 79 | 52.7 |
| | Radiation | 31 | 20.7 |
| | Both | 40 | 26.7 |

### 3.2. Section II: Anxiety and depression among cancer patients undergoing various cancer treatments

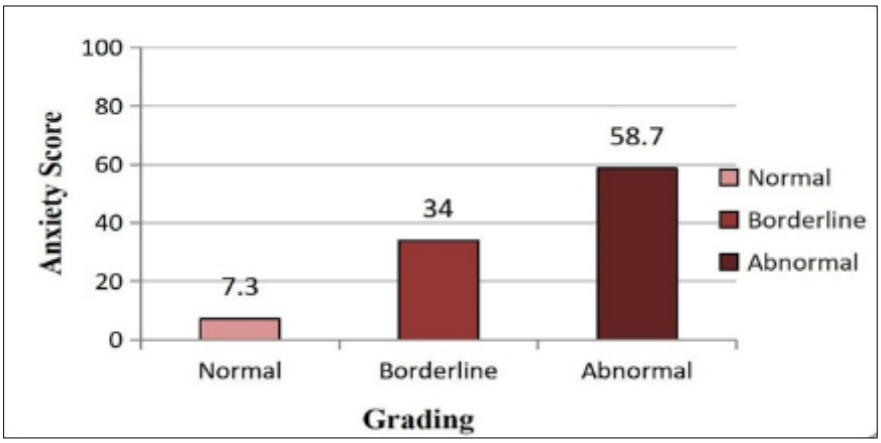


**Figure** 1 Bar diagram showing the percentage distribution of participants according to level of Hospital anxiety

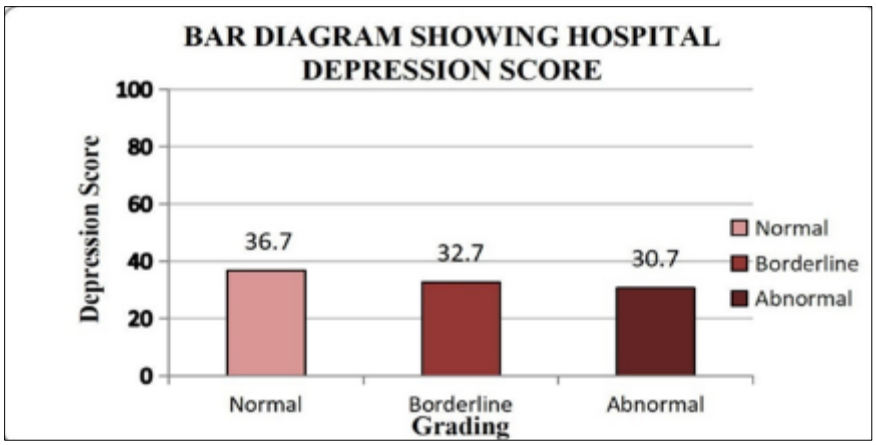


**Figure 2** Bar diagram showing the percentage distribution of participants according to level of Hospital depression

**Table 2** Mean, standard deviation and mean percentage of Hospital anxiety and depression on cancer patients

| | Minimum | Maximum | Mean | Std. Deviation | Mean Percentage |
|---|---|---|---|---|---|
| Anxiety | 2 | 21 | 11.23 | 2.943 | 53.4% |
| Depression | 1 | 16 | 8.63 | 3.302 | 53.9% |

The data presented in table 2 shows that mean and standard deviation of Hospital anxiety is 11.2 ± 2.9 with mean percentage 53.4%. The mean and standard deviation of Hospital depression is 8.63 ± 3.3 with mean percentage 53.9%.

### 3.3. Section III: Correlation between Hospital anxiety and depression among cancer patients undergoing various cancer treatments

**Table 3** Correlation between anxiety and depression among cancer patients undergoing various cancer treatments

| Variable | r value | P value |
|---|---|---|
| Anxiety | | |
| Depression | -0.124 | 0.129 |

The data from table 3 reveals that there is no correlation between Hospital anxiety and depression score (p=0.129) which is not significant. Hence null hypothesis is accepted.

### 3.4. Section IV: Association between Hospital anxiety and baseline characteristics of cancer patients

**Table 4** Association between Hospital anxiety and baseline variables N=150

| SI. No | Variables | Normal | Borderline Abnormal | Abnormal | $\chi^2$ | P value |
|---|---|---|---|---|---|---|
| 1. | Age | | | | | |
| | a)18-27 | 0 | 1 | 5 | 3.189(fisher's exact test) | 0.786 |
| | b)28-39 | 3 | 6 | 14 | | |
| | c)40-51 | 2 | 15 | 25 | | |
| | d)52-65 | 6 | 29 | 44 | | |
| 2. | Sex | | | | | |
| | a)Male | 3 | 31 | 37 | 646.4[a] | 0.040 * |
| | b)Female | 8 | 20 | 51 | | |
| 3. | Marital Status | | | | | |
| | Unmarried | 1 | 4 | 7 | 2.847(fisher's exact test) | 0.561 |
| | Married | 10 | 37 | 69 | | |
| | Widow/widower | 0 | 10 | 12 | | |
| 4. | Education | | | | | |
| | No formal education | 3 | 11 | 18 | 2.347(fisher's exact test) | 0.680 |
| | Primary | 6 | 19 | 36 | | |
| | Secondary | 2 | 21 | 34 | | |
| 5. | Occupation | | | | | |
| | a)Employed | 1 | 36 | 46 | 24.392(fisher's exact test) | 0.001 *** |
| | b)Unemployed | 9 | 12 | 41 | | |
| | c)Retired | 1 | 3 | 1 | | |
| 6. | Monthly Income | | | | | |
| | a)0-10000 | 7 | 29 | 44 | 2.210(fisher's exact test) | 0.908 |
| | b)10001-15000 | 2 | 13 | 22 | | |
| | c)001-20000 | 1 | 7 | 16 | | |
| | d)20001-25000 | 1 | 2 | 6 | | |
| 7. | Source of Funding | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Self | 4 | 12 | 9 | 10.115(fisher's exact test) | 0.020 * |
| | Government Schemes | 7 | 39 | 79 | | |
| 8. | Site of cancer | | | | | |
| | Reproductive system | 7 | 14 | 35 | 7.721(fisher's exact test) | 0.401 |
| | Gastrointestinal system | 4 | 30 | 39 | | |
| | Respiratory System | 0 | 3 | 9 | | |
| | d. Hematological | 0 | 2 | 4 | | |
| | e. Head and Neck | 0 | 2 | 1 | | |
| 9. | Stages of cancer | | | | | |
| | I | 1 | 3 | 8 | 4.379(fisher's exact test) | 0.616 |
| | II | 5 | 24 | 27 | | |
| | III | 3 | 15 | 34 | | |
| | d)IV | 2 | 9 | 19 | | |
| 10. | Duration of treatment | | | | | |
| | a.1week-6 months | 8 | 40 | 64 | 0.579[a] | 0.760 |
| | b.7 – 12 months | 3 | 11 | 24 | | |
| 11. | Type oftreatment | | | | | |
| | chemotherapy | 7 | 27 | 45 | 1.283(fisher's exact test) | 0.883 |
| | Radiation | 2 | 12 | 17 | | |
| | Both | 2 | 12 | 26 | | |

P=<0.05 *: Significant ***: Very Highly Significant

The data from table 4 shows that computed 'p' value 0.040 (sex) is significant, 0.001 (occupation)is very highly significant and 0.020 (source of funding) is significant which for is less than 0.05 level of significance. Thus, the research hypothesis is accepted for these baseline variables. Hence, there is significant association between score of Hospital anxiety with selected baseline variables of cancer patients

## 4. Discussion

- In the present study majority of the subjects (52.7%) were between 52-65 years of age, (28.0%) were between 40-51 years of age, (15.3%) were between 28-39 years of age whereas (4.0%) were between 18-27 years. Majority of cancer patients (52.7%) were female whereas (47.3%) were male.

The present study findings is concrete with the study findings of the cross-sectional study conducted in Burj Alamal Hospital, Sudan among 255 samples who were 18 and above to evaluate the hospital anxiety and depression among the cancer patients. Majority of the population (55%) belong to the age group 46-65, (51.8%) were females, (86%) were females, (43%) had primary education, (48%) were unemployed[7].

- The result of the present study shows that (58.7%) were abnormal that is increased anxiety, (34%) were borderline abnormal and (7.3%) were normal that is they had no anxiety related to various cancer treatments. The findings of the present study show that (36.7%) were normal that is no depression, (32.7%) were borderline whereas (30.7%) were abnormal.

These findings are consistent with the reports of other studies, where in (29.1%) were suffering from anxiety and (31.8%) were suffering from depression as projected out from a cross-sectional study conducted on 220 cancer patients at Bhakatpur Cancer Hospital in Katmandu valley[8].

- The present study states that there is no correlation between anxiety and depression among the cancer patients (r= -0.124).

The present study findings are contraindicated the study that was conducted in Ambala, Haryana, wherein there was positive correlation between Hospital anxiety and depression[9].

- The data analysed denotes that the obtained 'p' value is lesser than 0.05 level of significance. Thus, the research hypothesis is accepted. Hence there is significant association of anxiety with the baseline variables.

The present study findings are analogous to a descriptive study that was done to find out the level of anxiety and depression among cancer patients in West Bengal among 200 patients. The association of the anxiety with the selected baseline variables indicated that there is significant association between baseline variables and anxiety such as age and social support at (P = <0.05) and (P = < 0.001) level of significance[10].

## 5. Conclusion

Based on the findings of the present study, it was observed that a significant proportion of participants exhibited varying levels of anxiety and depression in relation to cancer treatments. Specifically, 58.7% of participants were classified as experiencing abnormal anxiety, while 34% were identified as borderline abnormal, and only 7.3% demonstrated normal levels of anxiety. In terms of depression, 36.7% of participants were found to be normal, indicating no depression, while 32.7% fell into the borderline category, and 30.7% were classified as having abnormal depression. These results highlight the considerable emotional challenges faced by individuals undergoing cancer treatment, with a notable prevalence of anxiety and depression among the participants.

## Compliance with ethical standards

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### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

### *Statement of ethical approval*

Ethical clearance will be obtained from the Institutional Ethics Committee

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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