A Dissertation on

"A CROSS SECTIONAL STUDY TO ASSESS THE PREVALENCE OF DEPRESSION, ANXIETY AND PSYCHOSIS IN WOMEN UNDERGOING CERVICAL CANCER TREATMENT IN A TERTIARY CARE CENTER"

Submitted to

THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY

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MAY 2018
CERTIFICATE BY THE GUIDE

This is to certify that **DR.PUNITHAVATHI.V.P.**Post Graduate Student (2015 –2018) in the Department of Psychiatry, Government Stanley Medical College, Chennai – 600001, has done this dissertation entitled "**A CROSS SECTIONAL STUDY TO ASSESS THE PREVALENCE OF DEPRESSION, ANXIETY AND PSYCHOSIS IN WOMEN UNDERGOING CERVICAL CANCER TREATMENT IN A TERTIARY CARE CENTER**" under my guidance and supervision in partial fulfillment of the regulations laid down by the TamilNaduDr. M. G. R Medical University, Chennai, for M.D. Psychiatry Degree Examination to be held in May 2018.

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DECLARATION

I, **DR.PUNITHAVATHI.V.P.**, declare that I have carried out this work entitled "**A CROSS SECTIONAL STUDY TO ASSESS THE PREVALENCE OF DEPRESSION, ANXIETY AND PSYCHOSIS IN WOMEN UNDERGOING CERVICAL CANCER TREATMENT IN A TERTIARY CARE CENTER**" under the guidance of **Dr. W. J. Alexander Gnanadurai** in the Department of Psychiatry, Government Medical College and Hospital. I also declare that this bonafide work or part of this work was not submitted by me or any other for any award, degree or diploma to any other university or board either in India or abroad.

This work is submitted to The TamilNaduDr. M. G. R. Medical university, Chennai, in partial fulfillment of the rules and regulations for the M.D. (Psychiatry) degree examination

DR.PUNITHAVATHI.V.P.

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I thank all my colleagues, paramedical workers and family for their support

Last but not the least, I sincerely thank all the **patients** who participated in this study for their cooperation.

LIST OF ABBREVIATIONS

ANOVA- Analysis of Variance

BPRS-Brief Psychiatry Rating Scale

C-SSRS- The Columbia Suicide Severity Rating Scale

EORTC-QLQ-C30-European Organisation for Research and Treatment of Cancer- quality of life questionnaire

FSFI- Female Sexual Function Index

HADS- Hospital Anxiety and Depression Scale

HAM-A- Hamilton Anxiety Rating Scale

HAM-D- Hamilton Depression Rating Scale

PBCRs- Population-Based Cancer Registries

WHO-World Health Organisation

YLD-Years lived with disability

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INTRODUCTION

INTRODUCTION

An uncontrolled division and proliferation of the cells of the body due to various reasons leads to cancer. The multifactorial causes coupled with the propensity to metastasize rapidly for different types of cancer makes cancer a challenging disease. The diagnosis of cancer is more frequent in the millennial, especially among women.This can be attributed to the increase in the screening landscape for various types of cancer in addition to the rapidly changing lifestyle patterns including sexual behavior. Cancer behaves differently in different parts of the body and varies with age too.

Cervical cancer is the uncontrolled proliferation of the epithelial lining of the cervix in women. It is well noted that cervical cancer boasts of being the second-most common in females. In 2005, a quarter million of deaths was attributed to cervical cancer while most of them (over 80%) were in developing countries like India. In the coming decades, this number is estimated to be higher over the present data by 25%. Interestingly, most of the women who die due to cervical cancer are in their productive age group with dependents like children, family, parents, etc. Another fact is that if found out early, cervical cancer can be prevented or treated at the early stages.

Torre, Lindsey A., et al. in 2012 reported that over half a million women were affected by cervical cancer worldwide with 90% of them in developing countries alone[1]. Other informal estimates state that this number is over one

million but due to under reporting does not give the actual number. WHO also said that the mortality rate of global cervical cancer is close to a quarter million represented by developing countries by 95%[2]. Limited access to health services and lack of awareness among the general population is considered to be instrumental in this skewed statistics.

In India, cervical carcinoma falls in the top ten leading causes of cancer-related deaths in women. Cancer cervix is the most common women related cancer followed by breast cancer and is the primary cause of cancer-related death in developing countries. As estimated more than one million women were currently living with cervical cancer.Every eight minutes witnesses a death due to cervical cancer in India. Psychiatric morbidity due to emotional distress in these patients may obstruct the ability to manage cancer effectively, its physical symptoms and its treatment leading to poor outcome in these patients.

The burden of cervical cancer is unbalanced (Shantaet al., 2000)[3]. WHO in 2008 showed that death rates due to cervical cancer after age standardization are 9.5 for every 1 lakh deaths[4]. This is in accordance to the global average (GLOBOCAN, 2002)[5]. However, regarding actual numbers, India represents one-third of the world average (IARC 2009[6], WHO 2004[7]). This was proved by the National Cancer Registry Program in 2009[8]. UNFP in 2015 reported that in India, women's health is placed at the bottom of the priority table[9]. The National Family Health Survey III in 2005/2006 stated that a good sum of girls

(44%) was married in their teenage years and many of them (16%) become expectant mothers whichare said to be the cause of high mortality in this category[10].

The latest technological growth has ensured that there is an early detection, treatment, and management of cervical cancer which has led to longer survival rates[11]. With recent advancement in cancer treatment, there is improved prognosis leading to longer survival rates. A five-year survival rate is 0, 1A and 1B are 80%. The longer survival has increased the psychiatric morbidity and mortality in these patients. The resultant increase in life expectancy for people with cervical cancer has led to other mental health conditions like anxiety and depression. Anxiety and depression sadly go unnoticed and untreated which at times leads to decreased quality of life and even sometimes suicide. If adequately managed, the anxiety and depression can be treated early during the treatment and management of cancer adding to the overall quality of life and preventing suicide. Unfortunately, little attention is being paid to the psychiatric diseases associated with cervical cancer and fewer studies are available to show how they are related.

Quality of life in cervical carcinoma

In the last decade, increased attention hasbeen given to emotional distress and QoL in women with cervical cancer[12,13]. This can be attributed to few findings that treatment affects the self-identity, her relationships, and overall self –

perception in different roles as a woman[14,15]. There are studies that demonstrate that new diagnosis of cervical cancer is related to moderate/severe anxiety or depression in around fifty percent of women[16,17]. The quality of life is low in women with cervical cancer[18].

A literature search showed that there is a gap in the literature about the prevalence of depression, anxiety, and psychosis in cancer cervix patients in an Indian setting. As the cervical cancer burdens tend to be very high in developing nations and there are few studies related to this in western scenarios. There is an absolute need for psychiatric morbidity related studies. This study aims to understand the prevalence of depression, anxiety, and psychosis among women affected by cervical carcinoma and various factors associated with it.

REVIEW OF

LITERATURE

REVIEW OF LITERATURE

A regular review of the indexed literature was done using recognized databases; Eric, PsycINFO, PubMed, and Google Scholar to examine previous studies to estimate the prevalence of anxiety, depression, suicidal behavior among patients with cervical cancer. The databases were specifically searched to find out if there are existing studies that threw light upon demographic factors and the correlation between the various variables under study.

Cervical cancer-global scenario

WHO in 2009 listed cervical cancer as the third-largest cause of cancer-related mortality in India with 10% of the deaths due to cancer attributed to cervical cancer[19]. GLOBOCAN in 2002[20] and IARC in 2009[21] said that cervical cancer is the leading cause of cancer-related deaths among women causing 26% of the cancer-related mortality. IARC states that this death rate will go higher (around 80%) in 2025.

Cervical cancer was found to be the fifth-highest cause of cancer-related death among women women in the world and had the following statistics in the previous two decades[22];

- 4,89,000 new cases
- An age-standardized incidence rate (global) of 16 per 100,000 women in 2012

- 1-year prevalence of 3,81,033, and 5-year prevalence of 1.41 million in 2012

- 2,68,000 deaths (3.6% out of 7.4 million cancer deaths)

- 9 age-standardized deaths per 1,00,000 in 2012

- 37,19,000 DALYs (disability adjusted life-years)

The incidence of cervical carcinoma in India

Theoretically, carcinoma of the cervix can develop among females of any age group. However, the most susceptible age is between 35 to 55 years. Zeller et al. in 2007 said that the pinnacle age varies with different populations[23]. In India, the peak age is between 45 and 54 years[24]. Two of the Population-Based Cancer Registries (PBCRs) in India reported cervical cancer as the leading cause of women-related cancer while the rest ten stated breast cancer as the primary cause. Chennai recorded the highest age-adjusted incidence while a high incidence area has been found in few districts of the state[25].

Here are few salient characteristics of cervical cancer burden in our country;

- The incidence rate of cervical cancer is 30.7 per 1,00,000 women in 2009 (age standardised)

- 1-year prevalence of 1,01,583, and 5-year prevalence of 3,70,243 in 2009

- 72,600 deaths (nearly 10% out of 7,29,600 cancer deaths)

- 6.5 deaths per 1,00,000

- 9.5 age-standardized deaths per 1,00,000

- 9,87,000 DALYs

- 88 DALYs per 1,00,000

- 113 age-adjusted DALYs per 1,00,000

Depression[26]:

Depression is a group of symptoms like low energy, low mood, low activity, increased fatigability and loss of interest. Feelings of guilt and worthlessness, suicidal thoughts, self-harm, disturbances of sleep, nihilistic view of the future, low self-esteem, low self-confidence, low attention, lack of concentration and appetite are also seen in this spectrum of symptoms. All these symptoms should be present for at least two weeks severe enough to hinder the day to day functioning of the individual. Depression can occur alone or with other disorders like bipolar disorders.

Anxiety

One of the most common psychiatric disorders in theday to day practice is anxiety. A good sum of the general population has undiagnosed anxiety. Anxiety may be evident as a symptom or can be reflected as somatic symptoms and other signs of the autonomous nervous system. Anxiety is classified as;

- Generalised anxiety disorder

- Phobic disorder include

- Agoraphobia

- social phobia-social anxiety disorder

- panic disorder and other anxiety disorder[27].

Suicide[28]

Thoughts of suicide or suicidal ideation are the collections of thoughts that a person harbors towards killing one self which can be a mere transitory consideration or an elaborate plan to kill one self. Most of the suicide ideation does not convert into an actual suicide. Though some of them may attempt most of them yet are deliberate failures. Attempted suicide is seen as a common clinical problem in general practice. People will other chronic illness have increased chances of attempting suicide.

Female sexual dysfunction[29]

Female sexual dysfunction is the collection of symptoms related to the following;

- sexual desire

- arousal

- orgasm

- sexual pain,

The dysfunction leads to strain in interpersonal relationships, affecting personal cognition as well as the quality of life. Limited studies have made data very rare in this field of study. Sporadic studies reveal that around 76% of women have some sexual dysfunction. Female sexual dysfunction is related to demographic factors like age, education, physical health and negative experiences in sexual life.

Quality of life[30]

Quality of life is a multi factorial concept comprising of physical, emotional, mental and social functioning. This is a measure of the impact of health status on the quality of life of an individual. The quality of life is affected insome conditions. Cancer is one of the most serious negative factors for a good quality of life.

The landscape of depression among women with cancer

The median length of an episode of depression in a chronic and recurrent disease is two months while an average woman with sickness experiences twice or thrice in her entire lifetime. There are biological, psychosocial and economic factors that contribute to the prevalence of depression in women. Vigot and Stewart in 2017[31], demonstrated the anatomical and physiological differences that make them different from men. Furthermore, factors that affect

gender like discrimination, isolation increase the chances of depression in a woman affected by cancer (WHO, 2013)[32].

Regarding YLD (years lived with disability), depression leads the list being the fourth biggest disease contributing to the global burden. WHO in 2010 said that depression would soon be the second most common cause of the increasing global burden of disease by 2020[33].

The association of depression with other psychological disorders like anxiety, suicidal ideation, and substance use emphasizes the fact that depression has to be studied to assess the quality of life among women with cervical cancer(Ayuso-Mateos et al., 2010)[34]. Studies show the poor quality of life among women with depression even during the normal phases between episodes. The rate of depression is higher among women with cervical carcinoma (Vigod & Stewart[35], 2006; Paparrigopolous et al[36]., 2010).

Around 20% of women are affected by depression in their lifetime and causes disability on a global scale (Kessler et al., 2003)[37]. The risk of depression is multipronged causing mental outcome challenges coupled with physical health challenges. The reasons for this staggering statistics is that women who suffer from depression engage in harmful practices like drugs, smoking, drinking and take poor care of their health. Though women may approach a doctor for the relief of somatic symptoms yet approaching a mental health specialist is not so common especially in India. A correlation study between depression and

cervical cancer may be more valid among women with non-specific psychological distress or mild depressive symptoms.

Majority of the women diagnosed with cancer experience transient mental distress[38]. The distress is mainly due to the fear of disability, death, disfigurement, etc[39]. This is not a normal response to the illness rather a resultant of some underlying psychopathologies. There are also studies that have tried to find out if depression can be a factor used for predicting the progression of the disease and the survival of the patient[40]. A systematic review showed that the number of studies to understand the prevalence of depression among cervical cancer patients is less.To understand better, a wider analysis of the literature has been done to get a comprehensive understanding of the prevalence of depression among women and the various dimensions of the same. This knowledge has been utilized to carry on with the study and under cervical cancer under study.

The estimation of depression among cancer patients varies widely due to non-standardisation of the procedures in place. A systematic review done by Massie in 2004[41] showed that a wide range was observed in depression (0-38%) while a wider rangewas associated with other depression spectrum disorders (0-58%). The depression varies with the time lapse between the diagnosis of the disease and the time of interview. In a study in the UKamong the elderly over 60 years of age, the following findings were illustrated in one-month prevalence;

- Mixed anxiety and depressive disorder- 7%

- General anxiety disorder - 3%

- Depressive episodes-1%

Thus, it can be concluded that cancer is a risk factor for depression[42].

Cervical cancer and psychiatric disorders

The curiosity to understand if there is any relationship between cancer and psychosocial morbidity has led to the wide spread study of patients with breast carcinoma. However, thegynecological cancers are not much studieddespite higher morbidity like affecting sexual life, self-esteem, self-image, reproductive health in addition to the life threat. There are not many studies that exclusively studied the impact of cervical cancer on a woman's psychological status like depression, anxiety, suicide ideation, quality of life, etc.

This can be credited to the reality that mental health as a whole is not considered by many an important component of health. The scenario is worse in developing countries like India where mental health is not openly discussed and is associated with stigma and discrimination. The enlightening fact is that among gynecological cancers, cervical cancers are the most studied from the psychosexual perspective. Another problem facing the study is that most of the studies are from uncontrolled scenario done retrospectively leading to methodological issues questioning the comparison between studies. This issue

is compounded by the small sample size used for the studies. The site and staging of the disease are also widely varied. Trying to study the disease from the perspective of the treatment type like surgery or radiotherapy requires a randomised control trial that puts an ethical question on how to allocate any patient randomly to control or case arm of research.

Cervical carcinoma and sexual dysfunction

Weijmar Schultz et al[43] in 1991 stated that sexual dysfunction due to treatment for cervical carcinoma is between six and hundred percent. Seibel et al[44] in 1982 said that sexual dysfunction was more common after radiotherapy as opposed to the study by Corney et al[45] in 1993 that said that sexual difficulties are common after radical surgery too. However, assessing this function only regarding sexual intercourse is not a valid study. Other variables like the woman's emotional status, her relationship with the partner and other psychological parameters should be studied. A pilot study by Van de Wielet al. in 1990 revealed that men also faced serious issues to support women during treatment and also in sexual relationship[46]. Most often, the mental health care issues of the patient are largely ignored (Maguire, 1985)[47]. It is also difficult to the physicians treating the patients to talk openly and routinely on sexual dysfunction due to treatment (Auchincloss, 1989)[48]. This situation is worse in conservative and traditional societies like India where talking about sex is still a taboo. Few studies advised the need for counseling in routine care (Capone et al., 1980)[49]. If required, psychotherapy may be given in some cases (Bos-

Branolte et al., 1988)[50]. The problem facing the academic community of South Asia is the lack of studies along these lines. Most of the studies have been publishedon the western literature which is not suited for comparison in the Indian sub continent. The purpose of the investigation was to recognize the need in this area and evaluate the sexual function in people taking treatment for cervical cancer.

Psychosocial and sexual outcomes of treatment of an early stage cervical cancer

A study by Cull et al. in 2014[51] among eighty-three women of mean age 45 years of stage 1b cervical carcinoma, successfully treated by surgery or radiotherapy revealed that 97 weeks after the treatment the following symptoms were reported among 40-50% of them;

- Persistent tiredness

- Lack of energy

- Weight gain.

Around 60% said that their full premorbid functional status has not returned. Further, a higher mean score for anxiety, psychological distress and depression were noted than the general population. Fear of recurrent disease was reported by 91% of the women with cervical cancer. Around 35% of the patients held themselves responsible for the disease. There was no difference in the psychological distress found among different age groups. Here are few salient findings from the study;

- A significant correlation was found between psychological distress and physical complaints (P<0.001)

- A significant correlation was found between psychological distress and functional outcomes (P<0.02).

- A significant correlation was found between psychological distress, physical problems and sexual outcome (P<0.01).

- Only 61 women from the study were in the sexually active group who revealed that their sexual function was reduced after the treatment (P<0.05).

- Further, radiotherapy treated samples reported more pain during sex and loss of pleasure.

- 44% of them were unable to talk freely with their partners regarding this

- The majority said that they need more sensitization about cervical carcinoma, its management, and rehabilitation.

- 49% suggested counseling

The study concluded that despite the physical debilitation, the emotional, functional and sexual status of the patients couldbe augmented if more attention was devoted to their sexual and psychological queries.

Depression in cervical cancer

Since cervical carcinoma and breast carcinoma are exclusively found in females. There is a sharing in the symptomatology between them. So a study of these symptoms' would yield a valid knowledge of the existence of depression in cervical cancer. There are many challenges in the diagnosis of psychiatric symptoms in patients with cervical carcinoma. There is a considerable overlap in the symptoms that may mimic both depressions as well as the side effects of the treatment. For instance, the loss of appetite, weight, fatigue and mental disturbances can be both attributed to depression and cancer[52]. Secondly, the staging of the disease at the time of diagnosis is instrumental in the prevalence of depression in cervical cancer. There is a negative correlation between the stage of the disease and the psychological well being[53]. Different treatment options cause different psychological symptoms[54]. Patients taking treatment for cervical carcinoma can experience adifferent set of depressive symptoms as compared to those who are awaiting treatment[55].

Various interventional studies to understand psychiatric morbidity in patients with cervical carcinoma:

Takashi Yamauchi et al. in 2014 did a Public Health Center-based Prospective Studydeath by suicide and other externally caused injuries following a cancer diagnosis in Japan[56].

This study was done to understand if the risk of death by both suicides and externally caused injuries increases during the first year following the initial diagnosis of cancer. Between 1990 and 2010, samples were obtained from a

population-based cohort of Japanese residents. Adjusted risk ratios (RRs) were calculated using Poisson regression models for both suicide and deaths by ECI. A group of 102,843 Japanese residents was studied; with 34 suicides and 48 ECI deaths during the follow-up period among the patients with cancer, while there were only 527 and 707 suicides and ECI deaths respectively in the group that did not have cancer. Analyses showed that the patients who were recently diagnosed with cancer were at a significantly higher risk of suicide and death by ECIs in the first year immediately after diagnosis (suicide RR = 23.9, 95% CI; ECI RR = 18.8, 95% CI). The study concluded that the risk of suicide and deaths by ECI in the first year immediately after cancer diagnosis were higher than those the group that did not have cancer.

Another study byMyungHeeAhn in 2015 on Suicide in cancer patients within the first year of diagnosis revealed the risk factors of suicide during the first twelve months of diagnosis of cancer[57]. The study was done among 164,497 patients of cancer in Seoul, South Korea, between 1996 and 2009. A 1:2 (373:746) matched case-control study was done matching on the following variables: age, anatomic site, sex and time of diagnosis of cancer. Cox proportional hazards regression modeling was used to analyze data.

Suicide was found in 149 patients (40.0% of 373 suicides) in the first twelve months after the diagnosis of cancer. The anatomic site (($p = 0.01$)) and stage ($p < 0.001$) determined the early and late suicide. Early suicide (53.4%) was seen in advanced stages against late suicide (18.7%; $p < 0.001$). Cancers that

had an advanced staging at the time of diagnosis were associated with a higher risk of suicide in the first twelve months of diagnosis.

Mantegna et al. in 2013 did a longitudinal evaluation (long-term prospective) of emotional distress and quality of life in patients with cervical cancer who remained free of disease two years from diagnosis[58].

They used Hospital Anxiety and Depression Scale (HADS) questionnaire and Global Health Status items of EORTC QLQ-C30 (GHS), and EORTC QLQ-CX24 (CX24). The data were collectedat baseline, at thethi[rd] month, six[th] month, 12th month and 24th month from surgery. The modifications of quality of life were measured and analyzed using generalized linear model.

Here are the results of the evaluation;

- Here are the demographic characteristics of this study

    - Married (63.8%)

    - Lived with someone (87.6%)

    - Had children (80.2%)

    - Higher education level (84.1%)

    - 51.7% of women were unemployed/retired

- In both groups, a reduction of anxiety levels ≥11 was observed at the 3-month evaluation (25.7% at baseline Vs. 14.7% after three months, p value=0.001);

- After two years from diagnosis, ECC (11.9%) and LACC (15.6%) patients showed an anxiety score ≥11.

- Depression levels were unchanged over time

- The quality of life (GHS and Sexual Activity scores) illustrated an encouraging trend over time in both groups compared to baseline

  GHS: 5.7% (ECC, p value=0.001), and 11.0% (LACC, p value=0.001);

  SXA: 13.9% (ECC, p value=0.001); and 6.1% (LACC, p value=0.008).

- Body Image mean scores reduced in chemoradiation patients in LACC, with no long-term recovery (7.5%, p value=0.001).

The following conclusions were made;

- Increased anxiety levels are found at two years after surgery (around 10% of patients)

- There is a need to reduce the adverse effect of lymphedema and symptoms of menopause on quality of life.

A mono-institutional prospective study by Kirchheiner et al[59] in 2015 to understand the quality of life before and during definitive radio and chemo

therapy in patients for locally advanced cancer of the cervix and early recovery gave the following results;

- Quality of Life reveals a noteworthy reduce during the treatment

- Even after three months of treatment, the quality of life was affected

The methods included the assessment of HR-QoL and PRS prospectively using the EORTC-QLQ-C30 + CX24 tool before, during, one week and three months after the treatment. Following results were obtained; there is a significant decline in the global health status during treatment ($p \leq 0.001$), which returned to baseline after three months of treatment. Role functioning was also impaired. These findings support the idea of a comprehensive patients' counseling during this period.

Osann in 2014 studied the factors associated with poor quality of life among cervical cancer survivors[60]. There is a prolonged disruption of the quality of life among the patients with cervical cancer. Cervical cancer patients have alower quality of life and higher depression levels than the normal population and survivors. The research was done among patients recruited for randomized counseling intervention using Patient-reported outcomes at baseline and 9-30 months after the diagnosis and post intervention.Multivariable linear models were testedand used to find out the factors independently related to poor quality of life at baseline.

- 121 Non-Hispanic and 83 Hispanic women between the ages 22 and 73 completed baseline measures

- Around 50% of the respondents received radiation therapy (with or without chemotherapy)

- Patients with cervical cancer reported lower quality of life and appreciably elevated level of depression and anxiety (26% and 28% > 1 SD than the mean of the general population, respectively).

- In the lowest quartile for thequality of life, 63% of them had depression levels > 1 SD higher than the mean.

- Treatment with radiation $\pm$ chemotherapy ($p = 0.014$) was associated with lower QOL.

- Sociodemographic characteristics showed only a small segment of difference in thequality of life ($r^2 = 0.23$).

- In multivariate analysis, less adaptive coping, comorbidities, persistent gynecologic problems, somatization, sleep problems, low social support, depression, and low education were all independently associated with low quality of life ($r^2 = 0.74$).

- Planned intervention can modify most of these factors

Pfaendler et al[61] in 2015 studied the literature between 1993 and 2014 about the cervical cancer survivorship and the long-term Quality of Life and Social Support. They revealed that subjects who received radiotherapy had more chances of long term bladder and bowel dysfunction, sexual dysfunction and psychosocial problems. They summarised the need for supportive care during and after the treatment.

Ye et al. did Another Systematic review of QoL and sexual dysfunction of cervical cancer patients post treatment in 2014[62]. Literature from May 1996 to May 2013 was probed that revealed the following;

- Anxiety decreased with age

- Depression increased with age

- Sexual dysfunction was found in most of the cases

- Sexual satisfaction was hampered

- Radiotherapy was associated with lower QoL

Another population study of quality of life in cervical cancer survivors (long-term) by Le Borgne et al. in 2013 revealed that the quality of life was affected even after fifteen years of treatment with higher impact in psychological aspects[63]. Radiotherapy was associated with more physical impact. The methodology of this study is unique; cervical cancer patients were identified from tumor registries in France and compared to Healthy controls selected from electoral rolls. The patients were diagnosed in 1990, 1995, or 2000. Five questionnaires related to quality of life were selected;

- -SF-36

- -EORTC QLQ-C30

- - Cervical cancer-specific module (EORTC QLQ-CX24)

- - MFI fatigue questionnaire

- - STAI for anxiety

- - Life condition questionnaire

- ANOVA was used as a tool for comparing the scores of survivors with controls in 5, 10, and 15 years. They were matched by treatment and socio-demographic data. The psycho emotional domains were impaired in fifteen years ($p < 0.01$). Radiotherapy was associated with more sexual dysfunction ($p = 0.002$).

Rohan DilipMendonsa and Prakash Appaya in 2010 did a study on the Psychiatric morbidity in outpatients of gynecological oncology clinic in a tertiary care hospital. They tried to assess frequency and nature of psychiatric morbidity among patients who attend the gynecological oncology outpatient clinic[64]. They also studied the relationship between socio-demographic, psychosocial and clinical variables and the psychiatric morbidity in women attending the gynecological oncology clinic.

These were the findings;

- Mean age = 45.8 years

- MDD (25.7%)

- Other depressive disorder (16.8%),

- Other anxiety disorder (10.9%),

- Panic disorder (5.9%),

- Somatoform disorder (3%)

- Eating disorder (1%).

- Depression and anxiety (8%)

Another study by Lau et al in 2013 on Psychiatric morbidity in Chinese women after cervical cancer treatment in a regional gynaecology clinic showed a 37%

point prevalence of psychiatric disorders [depressive disorders (31%), anxiety disorders (16%), and schizophrenia (2%)][65].

Yi-Long Yang et al in 2014 did a multi-centre, cross-sectional study of 224 cervical cancer patients using Hospital Anxiety and Depression Scale which showed the prevalence of depression and anxiety was 52.2% and 65.6% in cervical cancer patients[66]. The anxiety score was significantly higher in patients at the period of 4–6 months after diagnose and at cancer stage II.

Vomvaset al in 2012 assessed the sexual function in patients taking radiotherapy in a single center study[67]. They concluded that advanced staging lowered the scores in FSFI.

Another study by Nasr et al in 2017 evaluated depression, anxiety and quality of life among women with gynaecological cancers[68]. The following findings were reported;

Mean age = 50.6 ± 12.9 years,

- 73.0% were married

- 75.3% were residents of urban areas

- 76% were unemployed

- 28.5% showed anxiety

- 32.5% showed depression

- No relationship was found between disease factors and demographic characteristics

A multicenter comparison study by Derks et al in 2017 to assess the quality of life between patients of surgery and radiotherapy revealed the following findings[69];

- Radiotherapy was associated with lower quality of life compared to surgery with;

  o lower physical functioning (β, −6.01)

  o Lower social functioning (β, −15.2)

  o symptom experience (β, 6.13)

  o sexual worry (β, 11.3)

  o worse sexual/vaginal functioning (β, 11.4)

Ravi Paul et al in 2016 did a study on the prevalence of depression among cervical cancer patients which revealed the following findings;

- 82 participants met the criteria for depression

  o 78% moderate depression,

  o 18% mild

  o 4% severe depression.

- 50% patients with depression were between 41 and 60 years and only 12.5% of the participants were >60years

- In terms of education,

    37.5% had secondary level education

    37.5% had only primary school level

    17.5% had no formal education

    7.5% had tertiary education level.

- 47% of the participants were married.

- 63% of the participants were unemployed

Despite wide spread literature from the western schools of research, there is an absolute lacuna in the knowledge from the developing countries like India. This study in particular aims to bridge the existing knowledge gap.

AIMS AND

OBJECTIVES

AIMS AND OBJECTIVES

1. To assess the prevalence of depression, anxiety, and psychosis in patients with cervical cancer

2. To access the social demography status and its correlation with mental illness

3. To know other psycho-social stress factors associated with cervical cancer

4. To understand the quality of life, suicidal ideation, sexual functioning of patients having cervical cancer

MATERIALS

AND

METHODS

DESIGN:

Cross sectional, descriptive study

SOURCE OF DATA:

The sample is drawn from the outpatients of Radiology department at Government Stanley Hospital, Chennai with consecutive sampling from Outpatient department satisfying the selection criteria from July 2016 to July

2017. The sample is drawn from the radio therapy OPD patients who were diagnosed with cervical cancer from stage 1 to 4.Sample size is 67.

METHOD OF COLLECTION:

1. After obtaining informed consent from outpatients of Radiology department, they were interviewed and assessed using various scales. Data was recorded for this purpose.

2. Information was obtained from the patient.

3. Socio demographic and medical details were obtained using a questionnaire designed for this study.

DURATION AND PERIOD OF STUDY

13 months, from July 2016 to July 2017

MATERIALS

1. A structured Performa to collect the socio demographic details, family history details, and clinical profile.

2. Hamilton Anxiety Rating Scale (HAM-A)

3. Hamilton Depression Rating Scale (HAM-D)

4. Female Sexual Function Index (FSFI)

5. The Columbia Suicide Severity Rating Scale (C-SSRS)

6. EORTC (European Organisation for Research and Treatment of Cancer) quality of life questionnaire (QLQ)

INCLUSION CRITERIA

1. Persons aged in between 18 to 65

2. Individuals who can give valid informed consent with diagnosis of carcinoma cervix

EXCLUSION CRITERIA

1. Those who did not give their con

2. Patient less than 18yr and greater than 65yr

3. Patient with neurological impairment,space occupying lesion, previous h/o psychiatric disorder

4. Patients not able to give consent

5. Patients with major medical problems

Study criteria design

Anxiety,depression and psychosis are defined using ICD 10 criteria

Hamilton Anxiety Rating Scale (HAM-A)

It is one of the most widely used scales by clinicians and researchers, comprising of 14-items, measuring somatic anxiety and psychic anxiety. It has

few limitations like the inability to discriminate between antidepressant and anxiolytic effects. There are no standardized questions for probing though there is an acceptable level of inter-rater reliability. The scale ranges from 0 to 4, which indicates mild severity< 17, mild to moderate 18-24, moderate to severe 25-30[70].

Hamilton Depression Rating Scale [71,72]

HAM-D is a tool with multiple items to find out if there is depression. The questionnaire is mainly designed for adults and uses the probes to find out the following;

- mood

- feelings of guilt

- suicide ideation

- insomnia

- agitation

- retardation

- anxiety

- weight loss

- somatic symptoms

Each item of the tool is scored on a 3 or 5 point scale, and the total score is compared to the corresponding descriptor.

Columbia Suicide Severity Rating Scale, or C-SSRS[73,74,75,76,77]

The Columbia Suicide Severity Rating Scale is a rating scale for suicidal ideation for ages 12 and above. The rating ranges from a simple wish to active ideation with a clear plan. The scale is around ten times more capable of identifying suicide ideation. The scale is highly reliable and valid.

Brief Psychiatric Rating Scale (**BPRS**)[78]

The Brief Psychiatric Rating Scale (BPRS) is used to measure the following psychiatric symptoms;

- depression,
- anxiety,
- hallucinations
- Unusualbehavior.

Each symptom is given a rating of 1-7, and a sum of 18-24 symptoms is scored.

EORTC quality of life questionnaire (QLQ)[79]

The EORTC quality of life questionnaire (QLQ) is a questionnaire to assess the health- related quality of life (QoL) of cancer patients

participating in international clinical trials. The scale consists of single-item measures and multi-item scales.

It has;

- five functional scales;

- three symptom scales

- scale for global health status and quality of life

- six single items.

All itemsare scored in the range of 0 to 100. Higher scores are for higher responses.

For analysis, the average of the items was found and taken as the raw score, and the linear transformation was used to assess the severity.

Female Sexual Function Index[80]

This is a scale to assess the sexual function of the female using six domains namely;

- desire

- subjective arousal

- lubrication

- orgasm

- satisfaction

- pain

The FSFI scale has the following features;

- The test- retest reliability coefficients were high for each of the

individual domains (r = 0.79 to 0.86)

- The scale shows a high degree of internal consistency (Cronbach's alpha= >=0.82)

- Good construct validity was shown by vastly significant mean difference scores between the FSAD and control groups for each of the domains (p <0.001).

- The results support the reliability and psychometric (as well as clinical) validity of the Female Sexual Function Index (FSFI) in the assessment of key dimensions of female sexual function in clinical and nonclinical samples.

STATISTICAL ANALYSIS:

Statistical analysis was done using computerized software (SPSS 20). Descriptive statistics like frequencies, percentages, means and standard deviations were computed. Correlation tests and chi-square testswere done for different variables and parameters.

RESULTS

Findings

A study of 67 patients with cervical cancer undergoing treatment in tertiary care hospital on their psychiatric morbidity, sexual function and quality of life has revealed the following findings.The majority of them were in stage three (97%, n=65) and taking radiotherapy alone (76.1%, n=51).

Demographic characteristics the participants

Age of the participants

A larger part of the participants was in the age group of 51 to 65 years (52.2%, n=35) and 38.8% were in the age group 41 to 55 yrswhile only 9% (n=6) of the respondents were between 31 to 45 years of age. Figure 1 shows the age distribution of the sample.
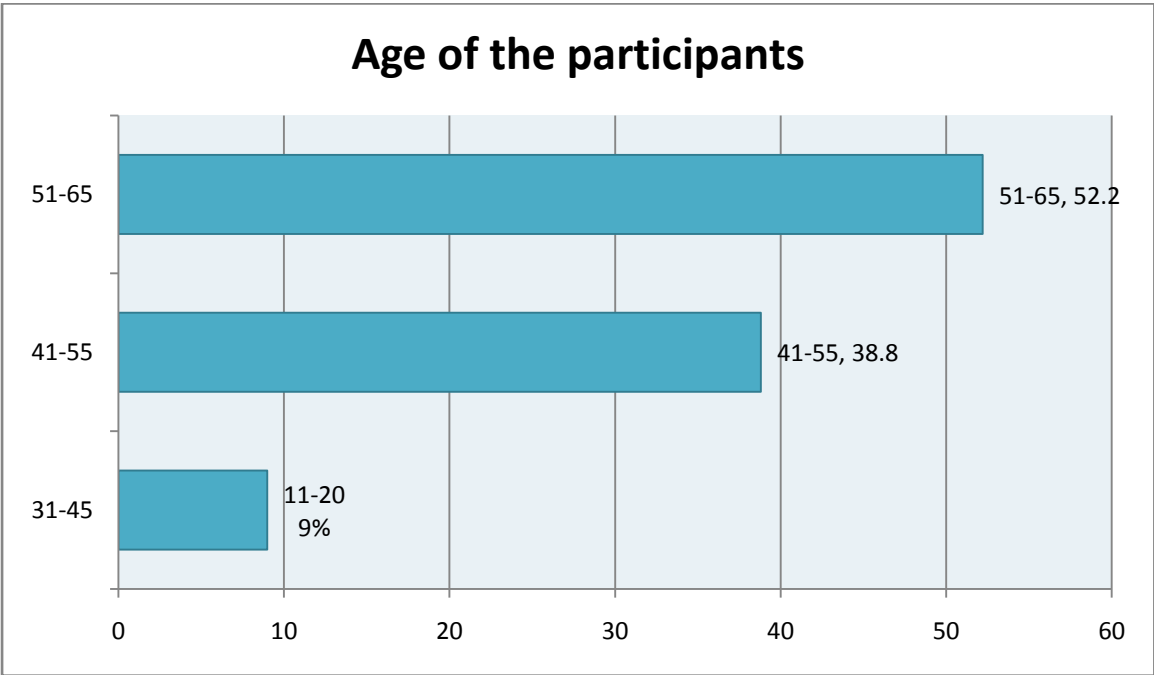
Figure 1: Age distribution of the participants

Religion of the respondents

A sizeable number of the participants were Hindus (76.1%, n=51) while Muslims (11.9%, n=8) were the least represented. Figure 2 shows religion of the respondents.
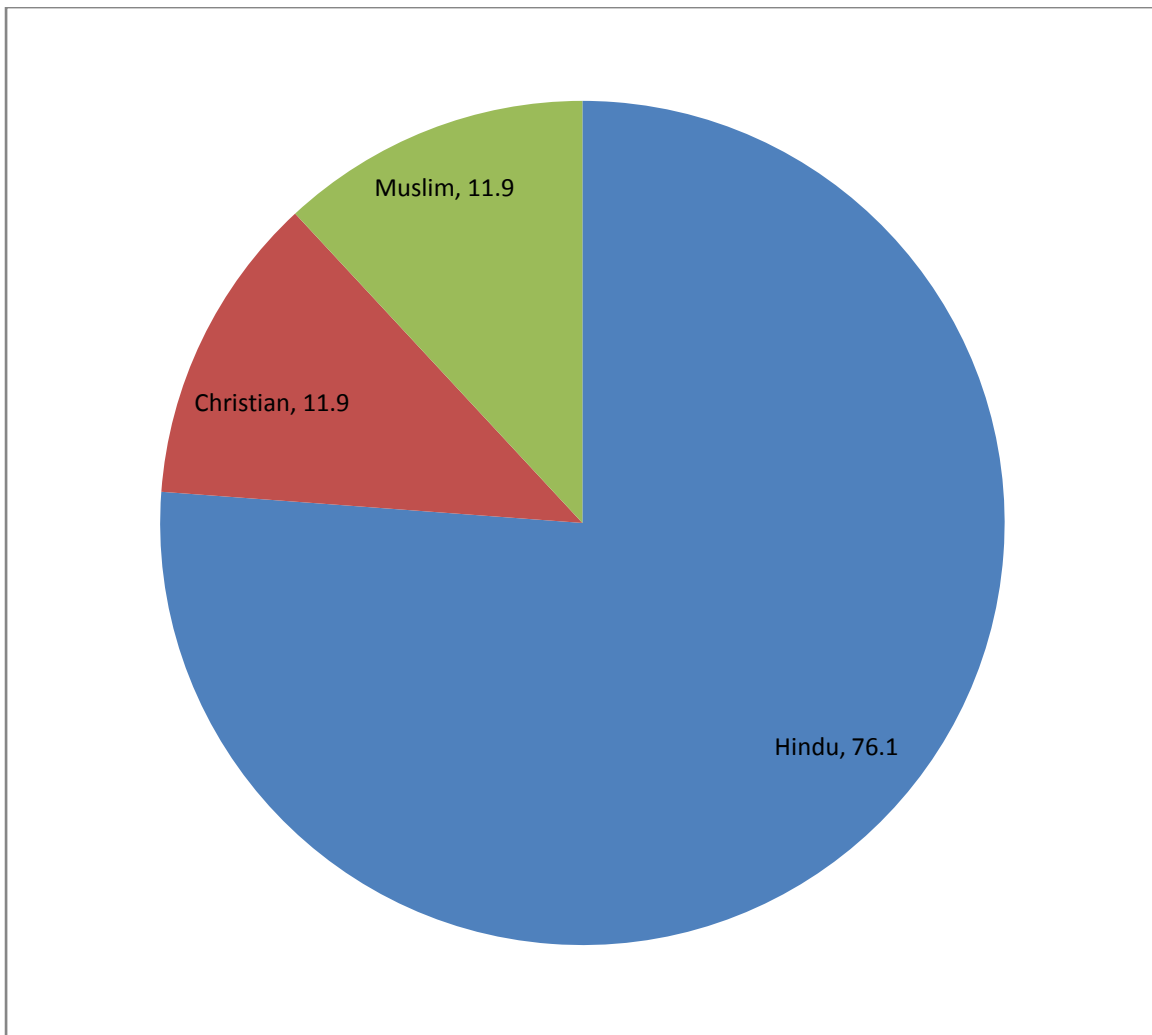
Figure 2: Religion of the respondents

Family type of the sample

Most of the participants (79.1%, n=53) lived in nuclear families and 21% from

joint family at the time of the study. Figure 3 illustrates the family type of the
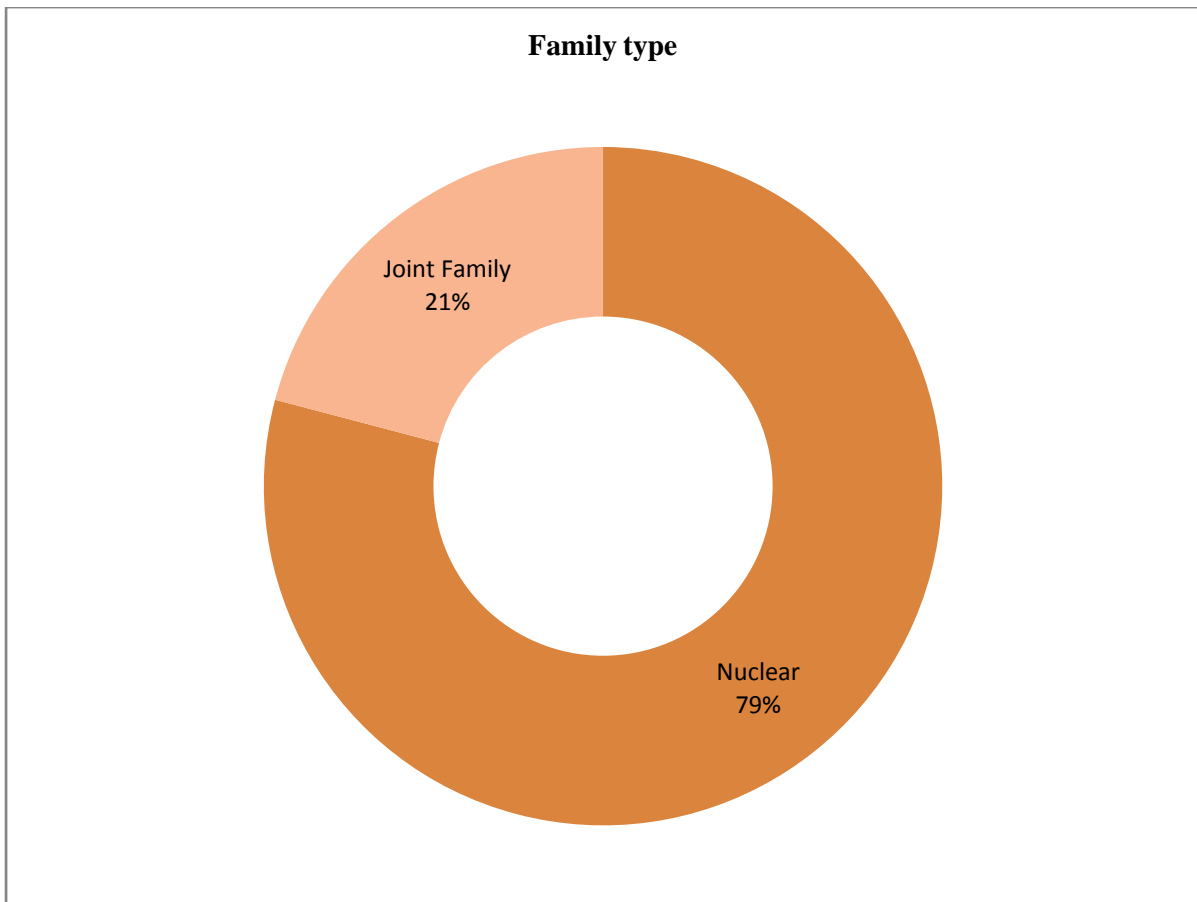
participants.

Figure 3: Family type of the participants

Education of the respondents

The following table details the education of the respondents. A majority (55.2%, n=37) of them were illiterate and only 29.9% (n=20) had studied only up to primary school and 11% upto middle school.

Education of the respondents	Percentage
Illiterate	55.2
Primary school	29.9
Middle School	11.9
High School	3.0

Table 1: Education of the respondents

Occupation of the respondents

The following table shows the occupation of the participants. A majority (61.2%, n=41) of them was unemployed and 32.8% (n=22) of them were unskilled workers.

Occupation of the respondents		Percentage
	Unemployed	61.2
	Unskilled worker	32.8
	Semiskilled worker	6.0

Table 2: Occupation of the respondents

Income of the respondents

The following table depicts the income of the participants. A majority (64.2%, n=43) of them were earning less than 2070 INR. and 29.9% had an income of more than 2070 to 6150 INR.

Income of the respondents (in INR)	Percentage
≤2070	64.2
2070-6150	29.9
6150-10250	6.0

Table 3: Income of the respondents

Socioeconomic status of the respondents

Figure 4 shows that 91% (n=61) of them came from lower socioeconomic status.
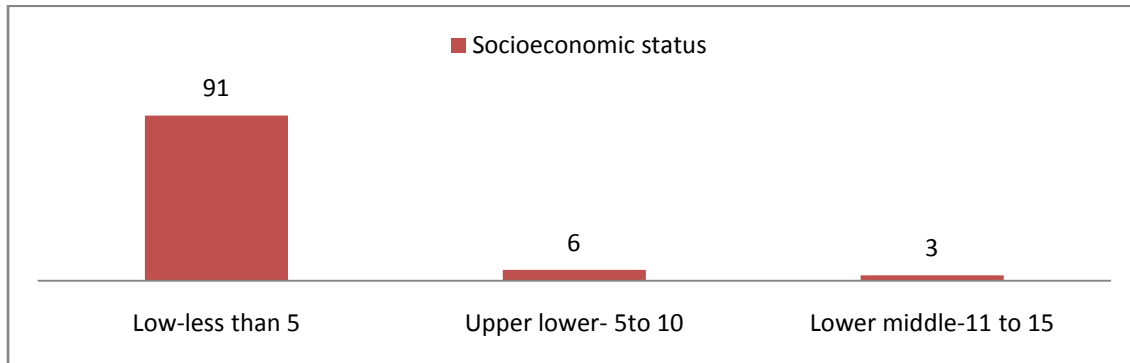

Figure 4: Socioeconomic Status of the participants

Marital Status of the participants

The following figure shows the marital status of the participants. The majority of them (86.6%, n=58) were married and 10.4% of them were widowed.
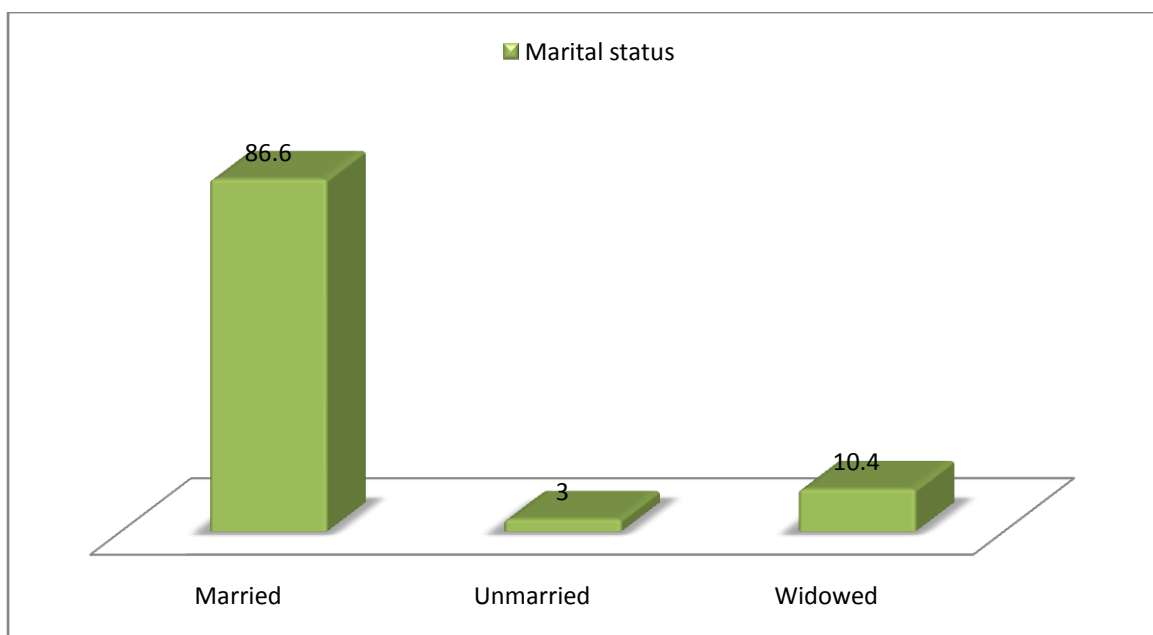
Figure 5: Marital status of the participants

Residence of the subjects under study

Figure 6 represents the type of residential area they are from. The majority of them (42%, n=28) reside in a municipality while only 16.4% (n=11) and 21% (n=14) came from town panchayat and corporation ,village panchayat respectively.

Residence type
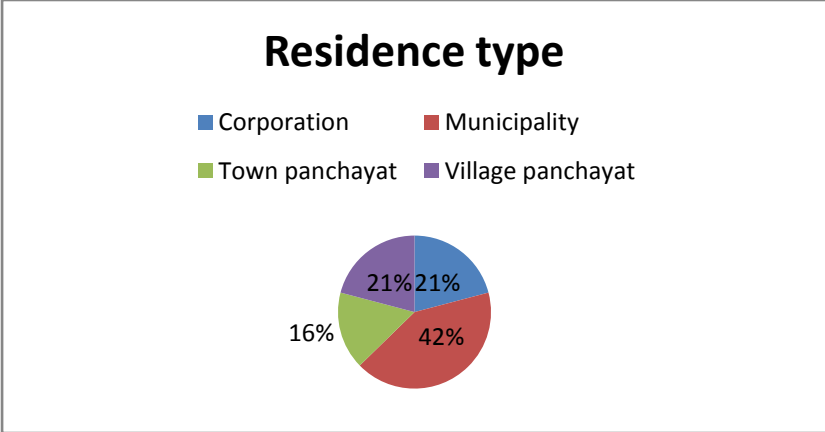
Figure 6: Type of residential area

Number of children for the subjects under study

Figure 7 represents the number of children to the participants. Majority of them (44.8%, n=30) have three kids and 22% have two children 19% have one child and 14% have four children.
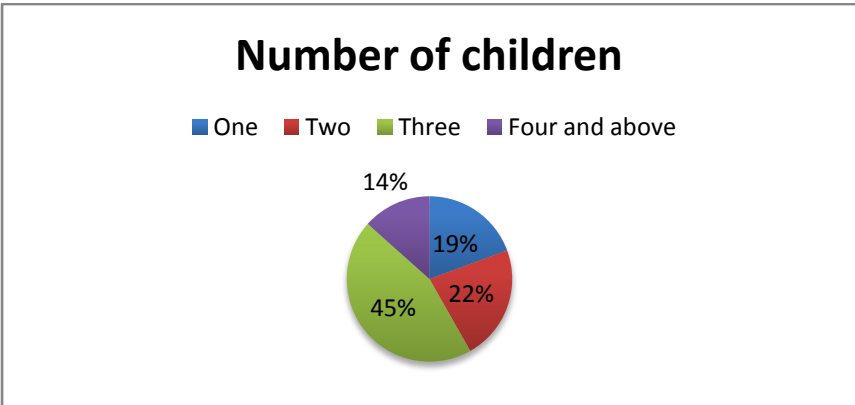
Number of children

Figure 7: Number of children

Currently living with

Figure 8 represents that 53.7% (n=36) of them live with their husbands and 32.8% were living with their children.
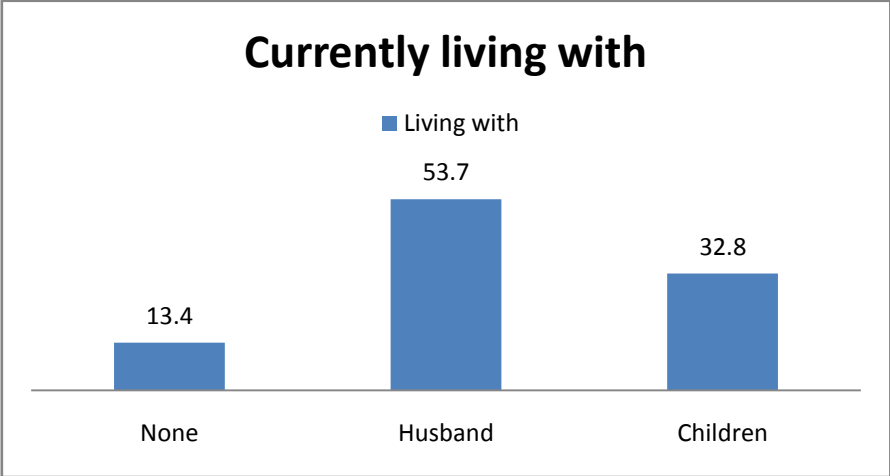
 Figure 8: Currently living with

Time of diagnosis of the illness

Figure 9 shows the time of diagnosis of the illness from the period of study. Majority (55.2%, n=37) of them had been diagnosed with cervical carcinoma within the last six months.
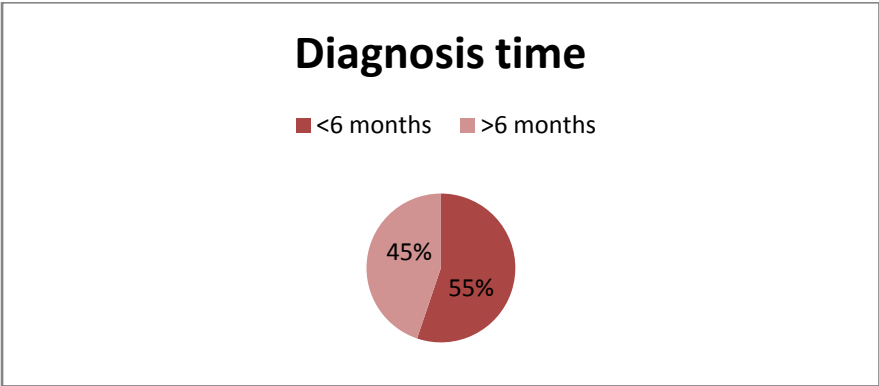
Figure 9: Time of diagnosis of the illness

Treatment undertaken

Figure 10 depicts the treatment undertaken. Majority (76.1%, n=51) of them were taking radiotherapy.
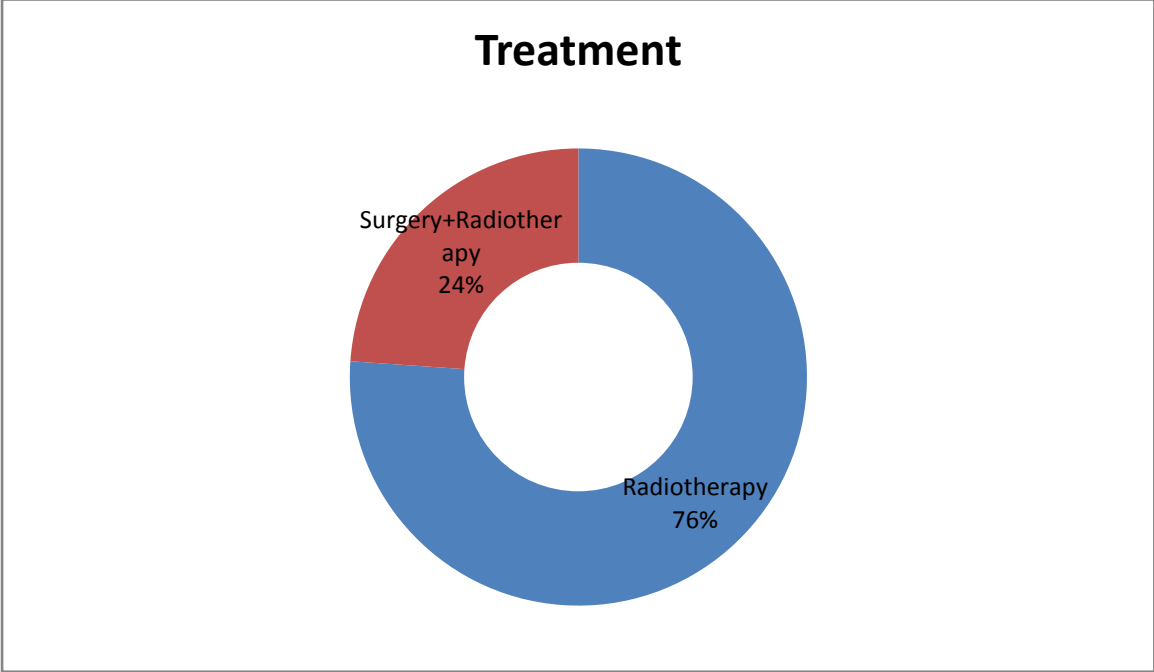
Figure 10: Treatment undertaken

Stage of cancer

Figure 11 depicts the stage of the disease. Majority (97%, n=65) of them were in stage 3.
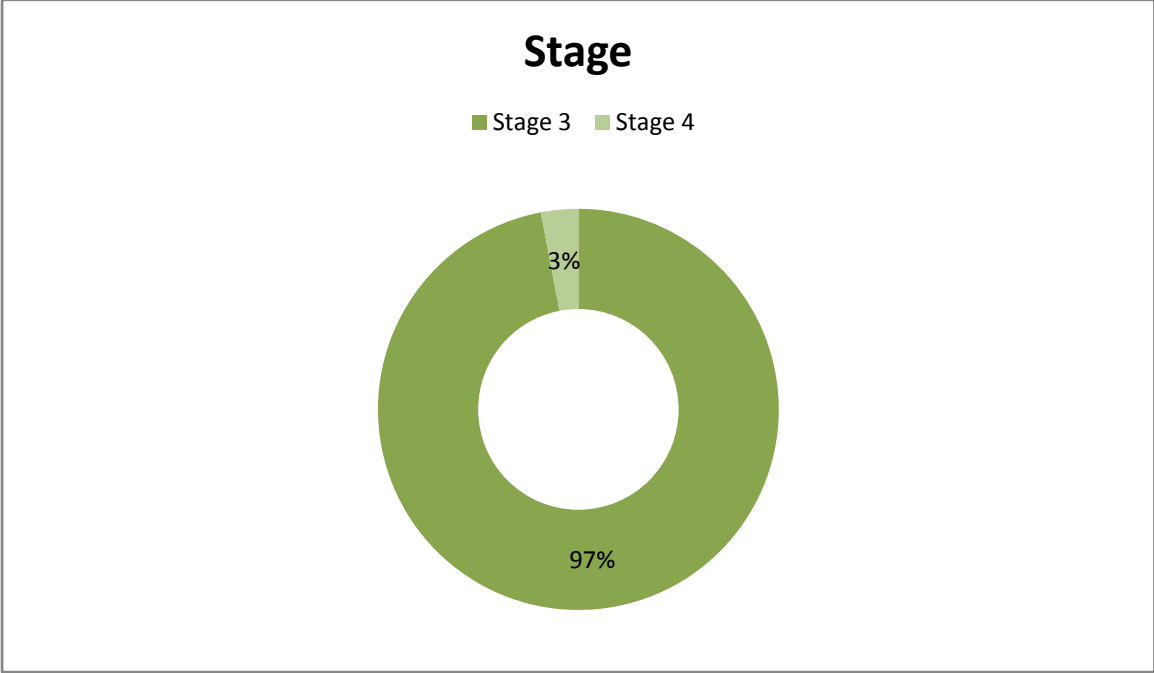
Figure 11: Stage of cancer

Brief Psychiatric Rating Scale (BPRS)

Figure 12 shows that distribution of scores from BPRS of 67 samples. The mean score is 29.18 with a standard deviation 8.328. Only 3% (n=2) of them had significant pathology (score >50). They qualified for depression with psychotic features.
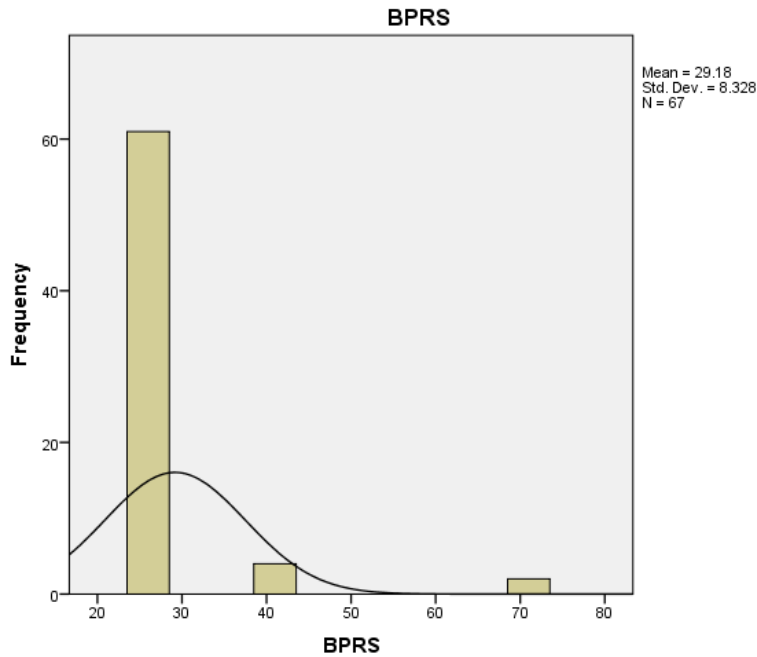
Figure 12: Distribution of BPRS scores

Anxiety

Prevalence
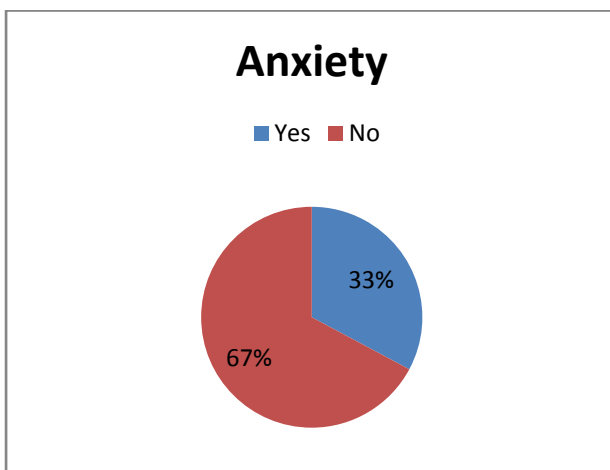
Figure 13: Prevalence of anxiety

Anxiety was present in around 33% (n=22) of the subjects.

Figure 14 shows the distribution ofHAM-anxiety scores with a mean of 15.25.
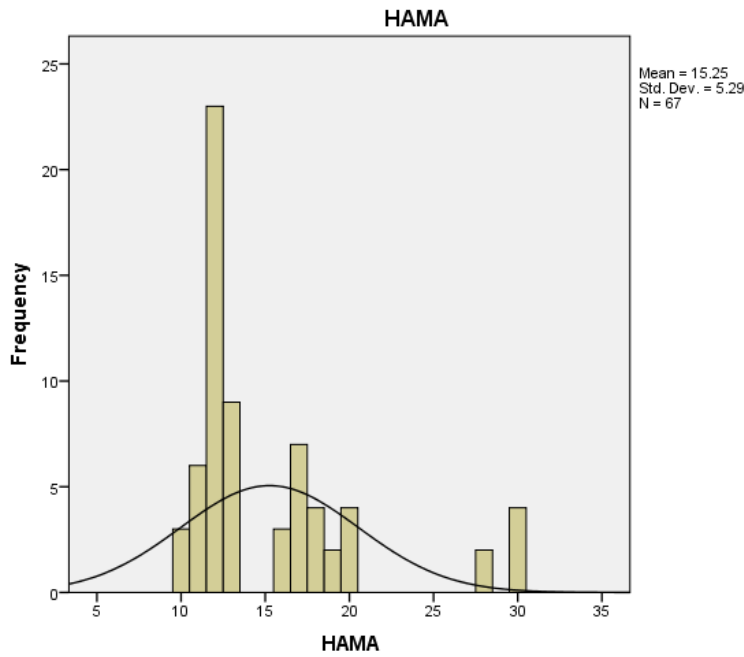
Figure 14: Distribution of anxiety scores

Depression

Prevalence
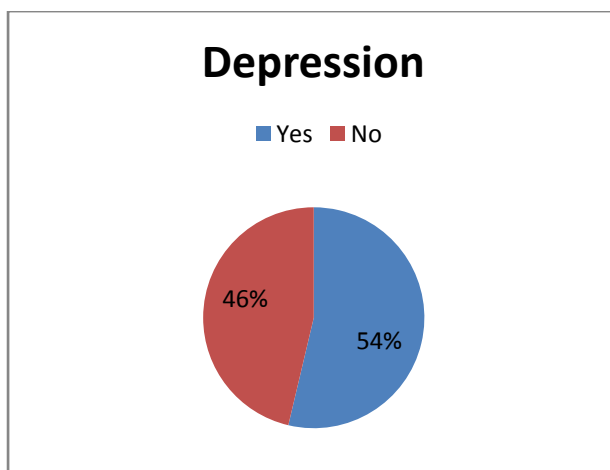
Figure 15: Prevalence of depression

Depression was present in around 54% (n=36) of the subjects.

Figure 16 shows the distribution of HAM-depression scores with a mean of 12.48.
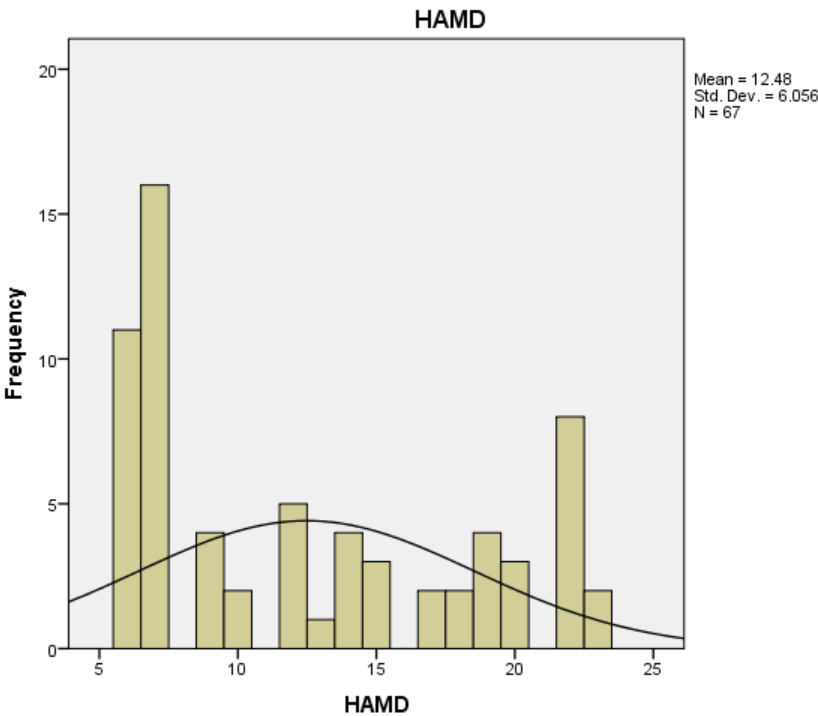
Figure 16: Distribution of depression scores

Figure 17 shows the frequency of anxiety in each category ;mild anxiety n=9,moderate anxiety n=8 and severe anxiety n=5.
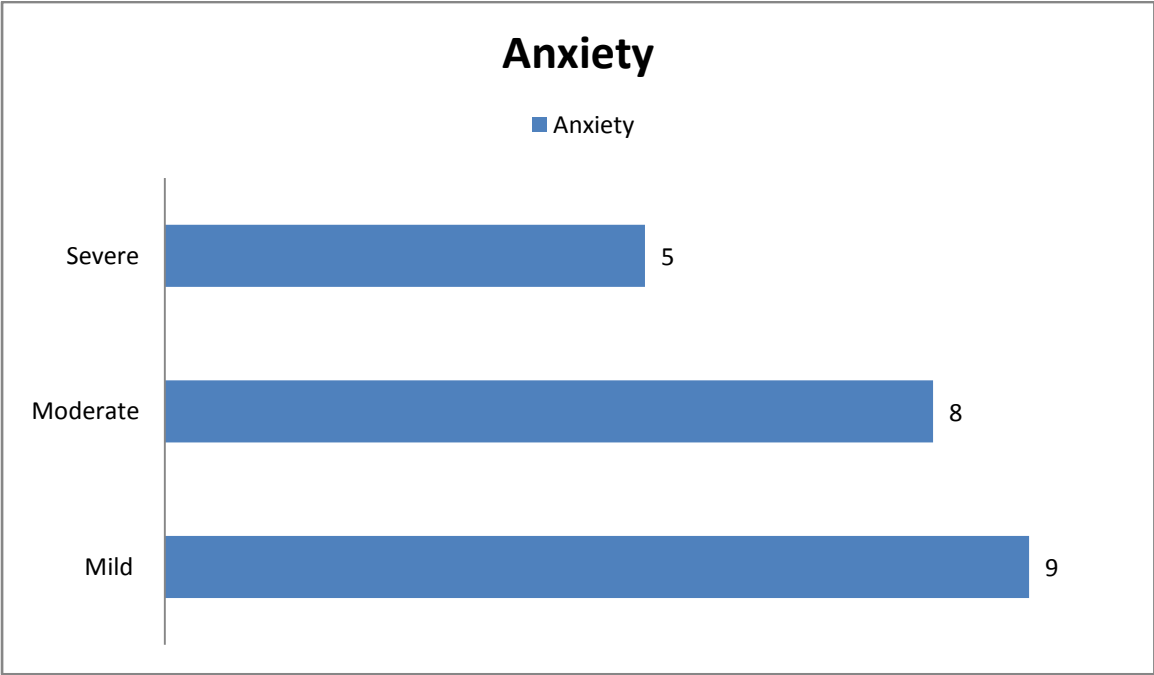
Figure 17: Frequency of anxiety in each category

Figure 18 shows the frequency of depression in each category (total no=36) mild depression n=8,, moderate depression n=11,severe depression n=15,very severe n=2.
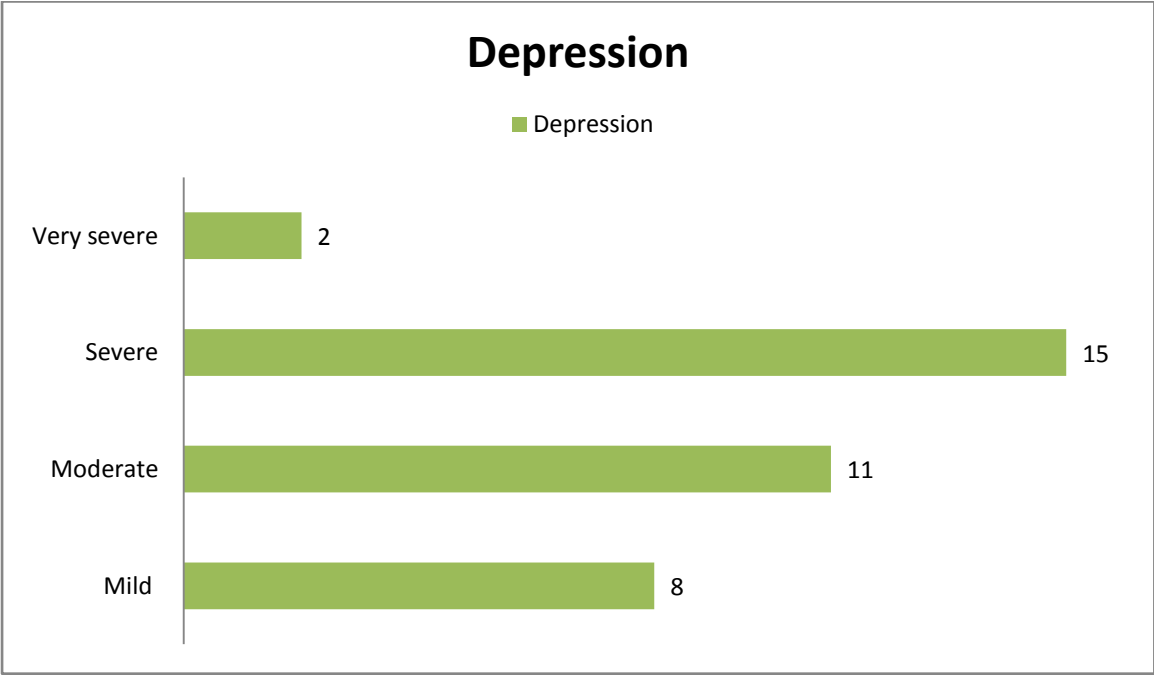
Figure 18: Frequency of depression in each category

Suicide Ideation and intention scoring

Tables 4 to 6 depict the scores from the Columbia–Suicide Severity Rating Scale.

Suicide Ideation

Suicide Ideation Score	Percentage
0	16.4 (n=11)
0-3	28.4 (n=19)
4-5	55.2 (n=37)

Table 4:suicide ideation score

Zero indicates no suicidal ideation in 16.4%(n=11),and28.4%(n=19) had suicidal ideation without a plan ,and 55.2% (n=37) had suicidal ideation with a plan.

Table 5 shows that 9% of the participants had an interrupted attempt of suicide

Interrupted attempt	Percentage
No	91.0 (n=61)
Yes	9.0 (n=6)

Table 5: Interrupted attempt

Aborted attempt

Table 6 shows that 17.9% of the participants had an aborted attempt

Aborted attempt	Percentage
No	82.1 (n=55)
Yes	17.9 (n=12)

Table 6: aborted attempt

Female Sexual Function Index (*FSFI*)

Tables 7 to 13 depict the scores from the female sexual function index.Figures 15 to 21 illustrate the distribution of FSFI scores among the sample.

Sexual Desire scores	Percentage
0.0	43.3
1.2	6.0
2.4	6.0
3.6	44.8

Table 7: Sexual Desire

This table depict that 43.3% had no sexual desire and 44.8%had a score of 3.6

Arousal scores	Percentage
0.0	88.1

2.4	6.0
3.0	3.0
3.6	3.0

Table 8: Arousal

This table depicts that 88.1% had no arousal

Lubrication scores	Percentage
0.0	94.0
2.4	3.0
3.3	3.0

Table 9: Lubrication

This table depicts that 94% of the participants had no lubrication

Orgasm	Percentage
0.0	94.0
1.6	3.0
2.4	3.0

Table 10: Orgasm

This table depicts 94% of the participants had no orgasm

Satisfaction	Percentage
0.0	94.0
3.2	6.0

Table 11: Satisfaction

This table depicts 94% of the participants had no satisfaction

Pain	Percentage

0.0	94.0
0.8	3.0
1.2	3.0

Table 12: Pain

This table depicts 94% of the participants had pain and hence no sexual activity

Full Score	Percentage
0.0	52.2
1.2	6.0
2.4	3.0
3.6	26.9
6.0	6.0
15.2	3.0
15.5	3.0

Table 13: Full score

This table depicts 52.2% of the participants had zero scores and all the participants had less than 26 indicating severe sexual dysfunction

Figure 19 show the sexual desire score with mean=1.83
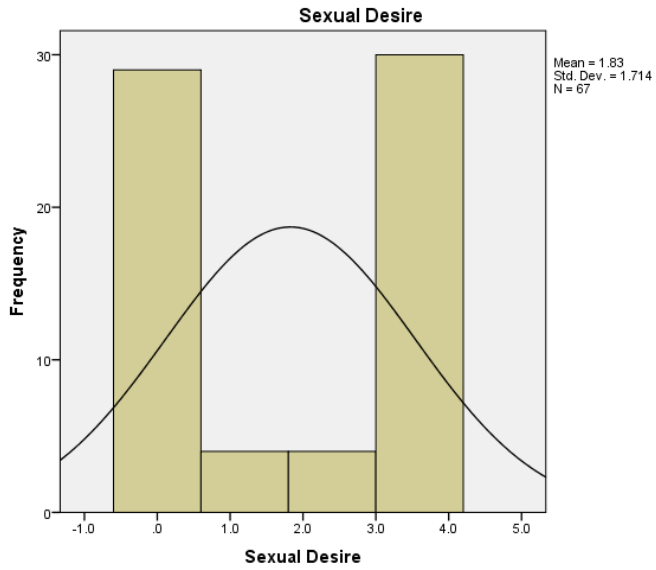
Figure 19: Sexual Desire

Figure 20 show the arousal score with mean=0.34.
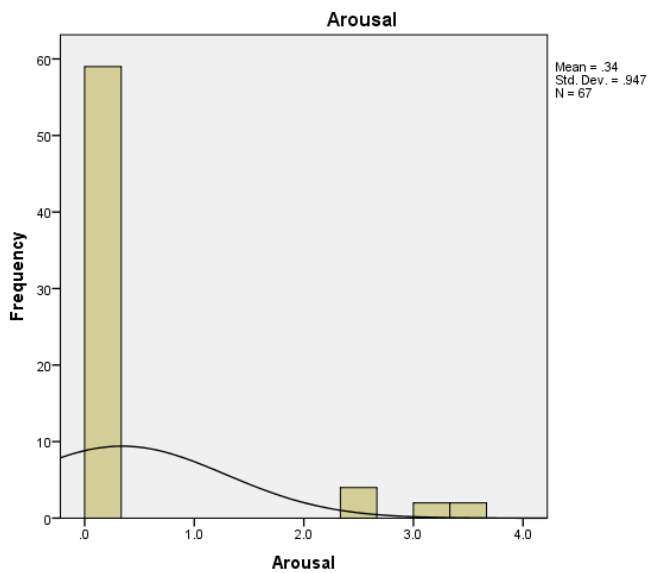
Figure 20: Arousal

Figure 21 show the lubrication score with mean=0.17.
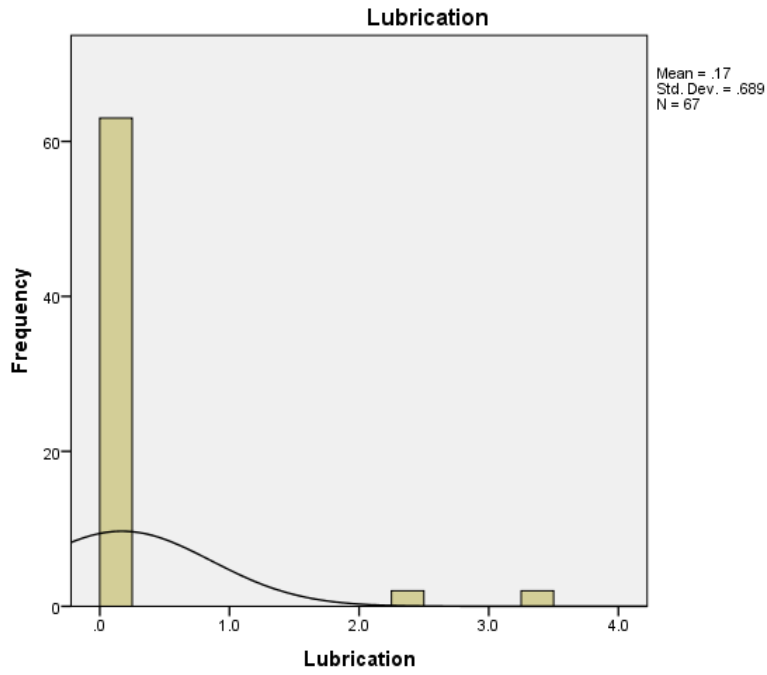
Figure 21: Lubrication

Figure 22 show the orgasm score with mean=0.12.
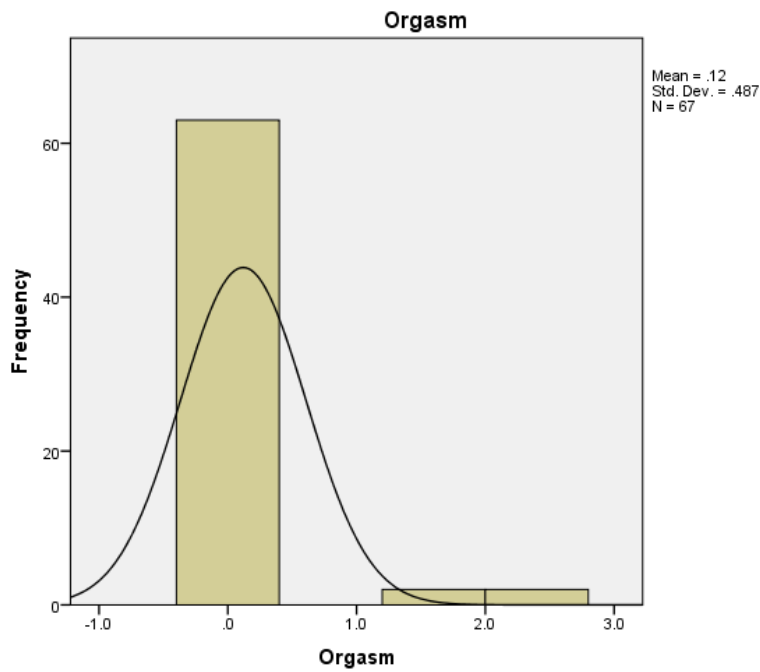
Figure 22: Orgasm

Figure 23 show the satisfaction score with mean=0.19.
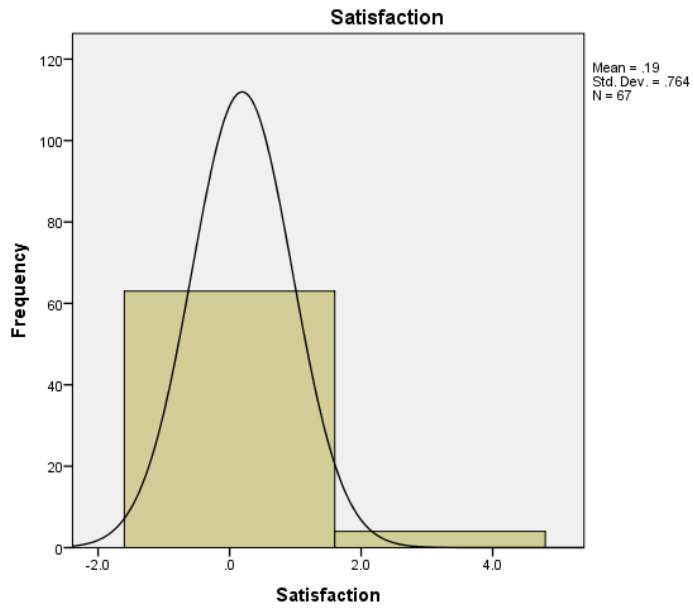
Figure 23: Satisfaction

Figure 24 show the pain score with mean=0.06.
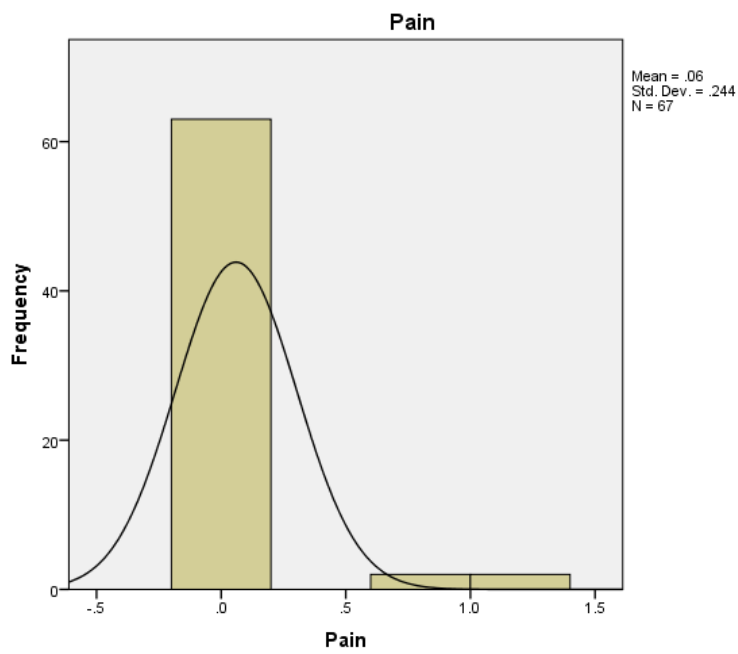
Figure 24: Pain

Figure 25 show the full score with mean=2.39.
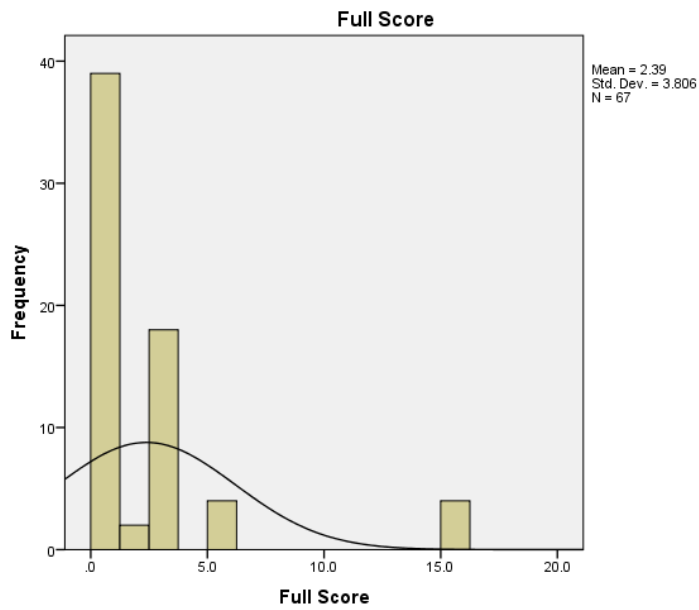
Figure 25: Full score

EORTC QLQ-C30

Figures 26- 28 illustrate the distribution of quality of life scores.Figure 26 shows the functional scale score with mean=46.72.
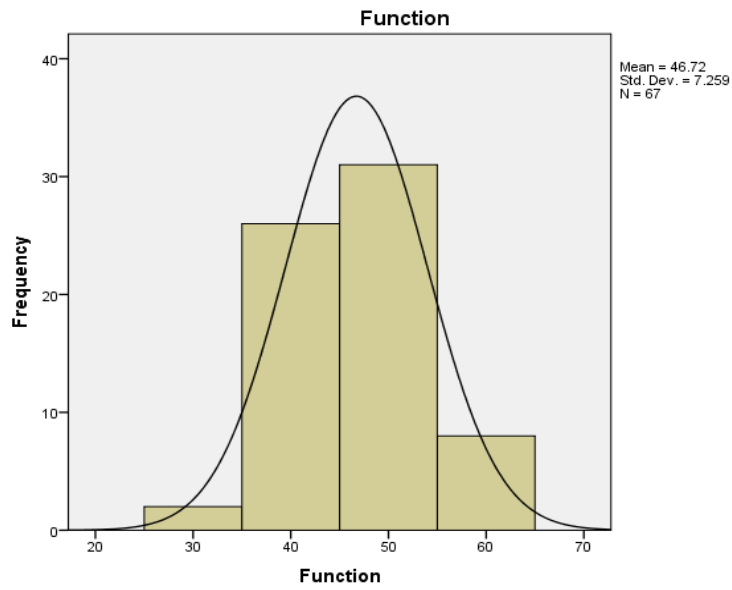
Figure 26: Functional scale scores

Figure 27 depict the global health status scores with mean=51.94.
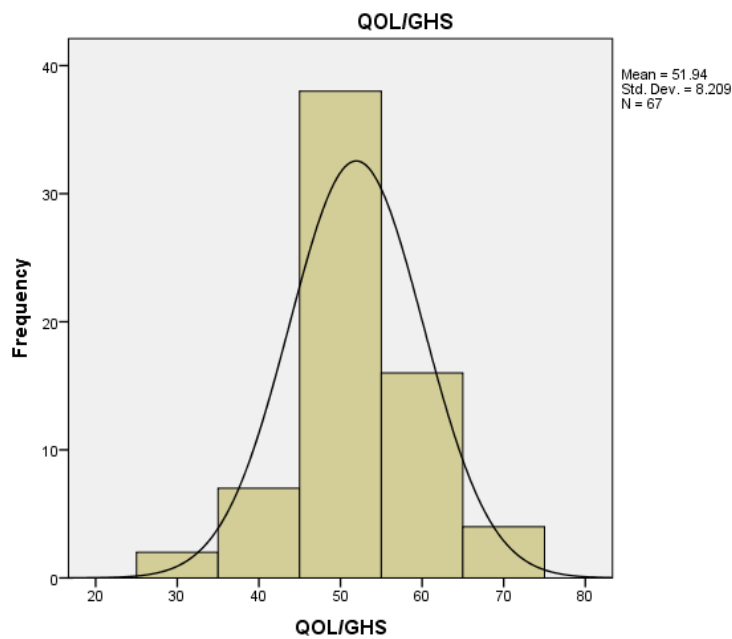
Figure 27: Global Health Status Score

Figure 28 show the symptom scale score with mean=53.13
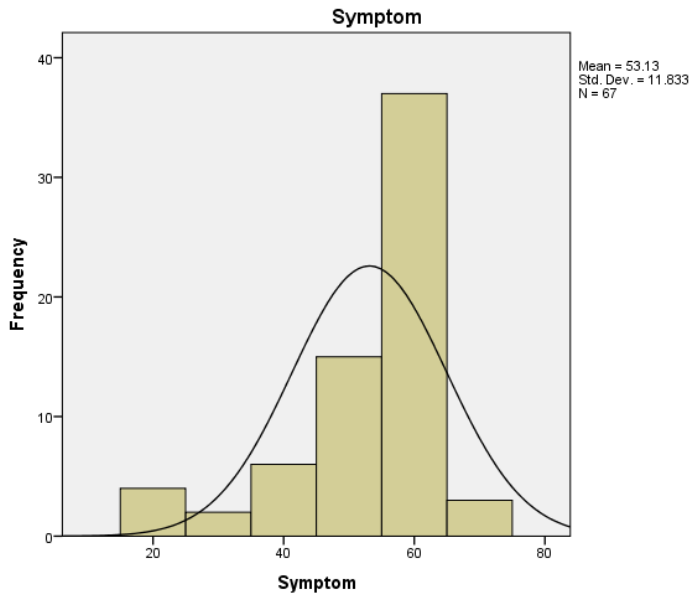
Figure 28: Symptom scale score

Correlation between brief psychiatry rating scale and disease factors

Disease Variables	R	P	Significant/not significant
Duration of diagnosis	0.438	<0.001	significant
Radiotherapy/surgery	0.711	<0.01	significant
Staging	0.098	<0.05	significant

Table 15: *Correlation between brief psychiatry rating scale and other variables*

Correlation tests between brief psychiatry rating scales and other variables showed positive and significant correlation with duration of diagnosis, staging of cancer and radiotherapy and surgery.

Correlation between anxiety and disease factors

Disease Variables	R	P	Significant/not significant
Duration of diagnosis	0.214	<0.05	significant
Treatment	0.523	<0.01	significant
Staging	0.787	<0.001	significant

Table 16: *Correlation between anxiety and other variables*

Correlation tests between anxiety and other variables showed positive and significant correlation with duration of diagnosis, staging of cancer and radiotherapy and surgery.

Correlation between depression and disease factors

Disease Variables	R	P	Significant/not significant
Duration of diagnosis	0.712	<0.05	significant
Treatment	0.233	<0.01	significant
Staging	0.276	<0.001	significant

Table 17: *Correlation between depression and other variables*

Correlation tests between depression and other variables showed positive and significant correlation with duration of diagnosis, staging of cancer and radiotherapy and surgery.

Correlation between suicide ideation and disease factors

Disease Variables	R	P	Significant/not significant
Duration of diagnosis	0.012	<0.005	significant
Treatment	0.419	<0.001	significant
Staging	0.511	<0.001	significant

Table 18: Correlation between suicide ideation and other variables

Correlation tests between suicide ideation and other variables showed positive and significant correlation with duration of diagnosis, staging of cancer and radiotherapy and surgery.

Correlation between FSFI full score and disease factors

Disease Variables	R	P	Significant/not significant
Duration of diagnosis	-0.506	<0.001	significant
Treatment	-0.241	<0.001	significant
Staging	-0.410	<0.001	significant

Table 19: *Correlation between FSFI full score and other variables*

Correlation tests between FSFI full score and other variables showed negative and significant correlation with duration of diagnosis, staging of cancer and radiotherapy and surgery.

Correlation between functional scale and disease factors

Variables	R	P	Significant/not significant
Duration of diagnosis	-0.320	<0.01	significant
Treatment	-0.571	<0.01	significant
Staging	-0.710	<0.01	significant

Table 20: *Correlation between functionscaleand other variables*

Correlation tests between function scale and other variables showed negative and significant correlation with duration of diagnosis, staging of cancer and radiotherapy and surgery.

Correlation between symptom scale and disease factors

Variables	R	P	Significant/not significant
Duration of diagnosis	0.439	<0.01	significant
Treatment	0.588	<0.01	significant
Staging	0.790	<0.01	significant

Table 21: *Correlation between symptomscaleand other variables*

Correlation tests between symptom scale and other variables showed positive and significant correlation with duration of diagnosis, staging of cancer and radiotherapy and surgery.

Correlation between global health status and other variables

Variables	R	P	Significant/not significant
Duration of diagnosis	-0.015	<0.01	significant
Treatment	-0.709	<0.01	significant
Staging	-0.632	<0.01	significant

Table 22: *Correlation between global health status and other variables*

Correlation tests between global health status and other variables showed negative and significant correlation with duration of diagnosis, staging of cancer and radiotherapy and surgery.

Comparison between anxiety and depression in cervical cancer patients in terms of quality of life

Values	Anxiety	Depression
r	-0.026	-0.602
p	<0.001	<0.005

Table 23: Comparison between anxiety and depression in cervical cancer patients in terms of quality of life

The above table shows that both anxiety and depression are negatively correlated with the quality of life with depression having higher correlation. The results are significant.

Cross tabulation between anxiety scores and demographic variables

The following section contains the cross tabulated data between anxiety scores and demographic variables.

Age and anxiety						
		Anxiety Scores				Total
		No pathology	Mild anxiety	Moderate anxiety	Severe anxiety	
Age	31-45	3	2	0	1	6
	41-55	20	2	2	2	26
	51-65	22	5	6	2	35
Total		45	9	8	5	67

Table 24: Cross tabulation between age and anxiety

Five of them had severe anxiety while nine and eight of them had mild and moderate anxiety respectively.

Education and anxiety						
		Anxiety Scores				Total
		No pathology	Mild anxiety	Moderate anxiety	Severe anxiety	
Education	Illiterate	20	7	8	2	37
	Primary school	15	2	0	3	20
	Middle school	8	0	0	0	8
	High school	2	0	0	0	2
Total		45	9	8	5	67

Table 25: Cross tabulation between education and anxiety

Seven, eight and twowho had mild, moderate and severe anxietyrespectively were illiterate while two and three of them with mild and severe anxiety studied upto primary school.

Occupation and anxiety						
		Anxiety Scores				Total
		No pathology	Mild anxiety	Moderate anxiety	Severe anxiety	
Occupation	Unemployed	26	9	2	4	41
	Unskilled worker	15	0	6	1	22
	Semiskilled worker	4	0	0	0	4
Total		45	9	8	5	67

Table 26: Cross tabulation between occupation and anxiety

Nine, two and four patients had mild, moderate and severe anxiety respectively were unemployed. Six and one person had mild and moderate anxiety respectively were unskilled workers.

Income and anxiety						
		Anxiety Scores				Total
		No pathology	Mild anxiety	Moderate anxiety	Severe anxiety	
Income	Nil	26	7	6	4	43
	2070-6150	17	0	2	1	20
	6150-10250	2	2	0	0	4
Total		45	9	8	5	67

Table 27: Cross tabulation between income and anxiety

Seven,six and four of them had mild moderate and severe anxiety respectively had nil income two and one patients with moderate and severe anxiety respectively had an income of 2000 to 6150 INR.

Living with and Anxiety						
		Anxiety Scores				Total
		No pathology	Mild anxiety	Moderate anxiety	Severe anxiety	
Living with	None	4	5	0	0	9
	Husband	25	2	4	5	36
	Children	16	2	4	0	22
Total		45	9	8	5	67

Table 28: Cross tabulation between living with and anxiety

Two, four and five of them had mild moderate and severe anxiety respectively were living with their husbands. Two and four of them had mild and moderate anxiety respectively were living with their children

Cross tabulation between depression scores and demographic variables

The following section contains the cross tabulated data between depression scores and demographic variables.

		Depression					Total
		No pathology	Mild depression	Moderate depression	Severe depression	Very severe depression	
Age	31-45	2	2	2	0	0	6
	41-55	11	3	0	10	2	26
	51-65	18	3	9	5	0	35
Total		31	8	11	15	2	67

Age and Depression

Table 29: Cross tabulation between age and depression

Two had mild and moderate depression each and were In the age group of 31-45 yrs. Three ten and two of them had mild severe and very severe depression respectively and they were in the group of 41-55 years of age.Three,nine and five had mild moderate and severe depression respectively were in the age group of 51-65yrs.

Education and Depression							
		Depression					Total
		No pathology	Mild depression	Moderate depression	Severe depression	Very severe depression	
Education	Illiterate	21	1	4	9	2	37
	Primary school	7	4	3	6	0	20
	Middle school	2	2	4	0	0	8
	High school	1	1	0	0	0	2
Total		31	8	11	15	2	67

Table 30: Cross tabulation between education and depression

One, four,nine and two of them had mild moderate severe andvery severe depressionrespectively were illiterate. Four, three,six had mild moderate and severe depression respectively had primary school education. Two and four of them had mild and moderate depression respectively had a middle school education.

Occupation and Depression							
		Depression					Total
		No pathology	Mild depression	Moderate depression	Severe depression	Very severe depression	
Occupation	Unemployed	21	6	7	7	0	41
	Unskilled worker	10	2	0	8	2	22
	Semiskilled worker	0	0	4	0	0	4
Total		31	8	11	15	2	67

Table 31: Cross tabulation between occupation and depression

Six,seven and seven of them had mild,moderate and severe depression respectively were unemployed.Two, eight and two of them had mild, severe, andvery severe depression was unskilled workers.

Income and Depression							
		Depression					Total
		No pathology	Mild depression	Moderate depression	Severe depression	Very severe depression	
Income	Nil	22	5	7	7	2	43
	2070-6150	6	2	4	8	0	20
	6150-10250	3	1	0	0	0	4
Total		31	8	11	15	2	67

Table 32: Cross tabulation between Income and depression

Five seven, seven and two of them had mild, moderate,severe and very severe depression respectively had nil income.Two,four and eight of them had mild,moderateandseveredepression respectively was earning 2070-6150 INR income.

Living with and Depression							
		Depression					Total
		No pathology	Mild depression	Moderate depression	Severe depression	Very severe depression	
Living with	None	5	0	0	4	0	9
	Husband	19	8	2	5	2	36
	Children	7	0	9	6	0	22
Total		31	8	11	15	2	67

Table 33: Cross tabulation between living with and depression

Eight,two,five and two of them had mild,moderate,severe and very severe depression respectively lived with their husbands.nine and six of them had moderate and severe depression respectively were living with their children.

Chi-square tests

The following table shows chi-square tests for different socio-demographic variables vs depression and anxietythat gave statistically significant results:

Sl.No	Variables	Chi-Square test	p- value
1	Age and anxiety	3.976	P<0.01
2	Education and anxiety	8.301	P<0.01
3	Occupation and anxiety	20.946	P<0.01
4	Income and anxiety	16.76	P<0.01
5	Living with and Anxiety	7.019	P<0.01
6	Age and Depression	7.381	P<0.01
7	Education and Depression	9.233	P<0.01
8	Occupation and Depression	18.122	P<0.01
9	Income and Depression	15.504	P<0.01
10	Living with and Depression	12.011	P<0.01

Table 34: Chi square test between different variables

DISCUSSION

A study of 67 patients with cervical cancer undergoing treatment in tertiary care hospital on their psychiatric morbidity, sexual function and quality of life has revealed the following findings; The majorityof them were in stage three (97%) and taking radiotherapy alone (76.1%).

A larger part of the participants was in the age group of 51 to 65 years (52.2%) while only 9% of the respondents were between 31 to 45 years of age. This is in accordance with the study by Cull et al. in 2014[51] among eighty-three women of mean age 45 years. A similar mean age = 50.6 ± 12.9 years, was reported by Nasr et al in 2017 who evaluated depression, anxiety and quality of life among women with gynaecological cancers[68], by Rohan DilipMendonsa and Prakash Appaya in 2010 [Mean age = 45.8 years][64], and Osann in 2014[60] who reported a maximum age of 73 years. The reason for this difference in age grouping can be attributed to the sampling methodology used by various researchers. Yet the result of the mean age around 45 to 50 correlating with the age group of cervical carcinoma incidence makes this study comparable. The longer survival has increased the psychiatric morbidity and mortality in these patients.

Most of the participants (79.1%, n=53) lived in nuclear families at the time of this study. But this particle demographic variable is not comparable due to limited studies in the South Asian literature. Though western studies throw

light on this a little, yet social and cultural differences makes this incomparable.

In this study, a majority (55.2%, n=37) of them were illiterate and only 29.9% (n=20) had studied only up to primary school. This is similar to most of the studies where the majority of the samples were less educated and sometimes even illiterate. The only exception being the study by Mantegna et al. in 2013[58] where the education was higher education level (84.1%). Ravi et al in 2016 reported that 17.5% was illiterate. Cervical carcinoma has no effect on the education or vice versa. Most of the times, the reason behind the disease remains   unknown.

A majority (61.2%, n=41) of them was unemployed which can be compared to the following studies;

-   63% of the participants were unemployed (Ravi et al, 2016)

-   76% were unemployed (Vomvaset al, 2012 [67])

-   51.7% of women were unemployed/retired (Mantegna et al, 2013[58])

This can be explained by the fact that most of the studies were conducted either in a public hospital or in places where the treatment was free of cost or at a subsidised rate. Drawing conclusions based on employed is not possible considering the multi factorial causes of cervical carcinoma.

Most of them 91% (n=61) of them came from lower socioeconomic status with the majority (64.2%, n=43) of them earning less than 2070 INR. This is because the study was done in a government tertiary care center where the lower socio economic status people are treated.

The majority of them (86.6%, n=58) were married in this study. This can be compared to the previous studies;

- 63.8% (Mantegna et al, 2013[58])

- 73.0% (Vomvaset al, 2012 [67])

- 47% (Ravi et al, 2016)

In this study, 53.7% (n=36) of them live with their husbands and a majority of them (44.8%, n=30) have three kids. Only comparable study by Mantegna et al, 2013[58] is more or less the same [Married (63.8%), lived with someone (87.6%)].

The resultant increase in life expectancy for people with cervical cancer has led to other mental health conditions like anxiety and depression. Anxiety and depression sadly go unnoticed and untreated which at times leads to decreased quality of life and even sometimes suicide. This can be attributed to few findings that treatment affects the self-identity, her relationships, and overall self –perception in different roles as a woman[14,15].

In this study, anxiety was present in 33% of the subjects whereas depression was found in 54% of the subjects. This is similar to the study by Osann in 2014[60] where level of depression and anxiety were 26% and 28% > 1 SD than the mean of the general population, respectively. Ravi Paul in 2016 saw that 78% were moderate depression, 18% mild and 4% was severe depression whereas 50% patients with depression were between 41 and 60 years and only 12.5% of the participants were >60years. In this study, the majority of the depression was present in the age group of 51-65 (n=35) with very severe depression among two people in the age group of 41-55. Nasr et al in 2017 [68]reported that 28.5% showed anxiety and 32.5% showed depression. Yi-Long Yang et al in 2014 showed the prevalence of depression and anxiety was 52.2% and 65.6% in cervical cancer patients[66]. Lau et al in 2013 showed a similar statistics of depressive disorders (31%) and anxiety disorders (16%)[65].Depression and anxiety (8%) by Rohan DilipMendonsa and Prakash Appaya in 2010[64]. The fluctuating statistics can be explained by the stigma and discrimination associated with seeking mental healthcare in some places compared to others. Further, the scales used were different which might be a reason for this difference in point prevalence.

. There are studies that demonstrate that new diagnosis of cervical cancer is related to moderate/severe anxiety or depression in around fifty percent of women[16,17]. Correlation tests between anxiety and other variables showed

positive and significant correlation with duration of diagnosis (r=0.214, p<0.05), staging of cancer (r=0.787, p<0.001) and radiotherapy and surgery (r=0.523, p<0.01).

Correlation tests between depression and other variables also showed positive and significant correlation with duration of diagnosis (r=0.712,p<0.05), staging of cancer (r=0.276, p<0.001) and radiotherapy and surgery (r=0.233, p<0.01). This strengthens the association of depression with other psychological disorders like anxiety, suicidal ideation, and substance use emphasizes the fact that depression has to be studied to assess the quality of life among women with cervical cancer(Ayuso-Mateos et al., 2010)[34]. The rate of depression is higher among women with cervical carcinoma (Vigod & Stewart[35], 2006; Paparrigopolous et al[36]., 2010). Majority of the women diagnosed with cancer experience transient mental distress[38].

Correlation tests between FSFI full score and other variables showed negative and significant correlation with duration of diagnosis (r=-0.506, p<0.001), staging of cancer (r=-0.410, p<0.001) and radiotherapy and surgery (r=-0.241, p<0.001). This correlates with Weijmar Schultz et al[43] in 1991 who stated that sexual dysfunction due to treatment for cervical carcinoma is between six and hundred percent. Seibel et al[44] in 1982 also said that sexual dysfunction was more common after radiotherapy as opposed to the study by Corney et al[45] in 1993 that said that sexual difficulties are common after radical surgery too.

Correlation tests between functional scale scores and other variables showed negative and significant correlation with duration of diagnosis (r=-0.015,p<0.01), staging of cancer (r=-0.632, p<0.01) and radiotherapy and surgery (r=-0.709, p<0.01).

This finding supports the mono-institutional prospective study by Kirchheiner et al[59] in 2015 to understand the quality of life before and during definitive radio and chemo therapy in patients for locally advanced cancer of the cervix and early recovery that Even after three months of treatment, the quality of life was affected in that study. There was a significant decline in the global health status during treatment (p ≤ 0.001).

Correlation tests between symptom scale scores and other variables showed positive and significant correlation with duration of diagnosis (r=0.439, p<0.01), staging of cancer (r=0.790, p<0.01) and radiotherapy and surgery (r=0.588, p<0.01) building up on the study by Osann in 2014 studied the factors associated with poor quality of life among cervical cancer survivors[60]. Correlation tests between function scale scores and other variables showed negative and significant correlation with duration of diagnosis (r=-0.320, p<0.01) , staging of cancer (r=-0.710, p<0.01) and radiotherapy and surgery (r=-0.571, p<0.01) that matches with the previous findings of quality of life being low in women with cervical cancer[18].

Le Borgne et al. in 2013 revealed that the quality of life was affected even after fifteen years of treatment with higher impact in psychological aspects[63]. Radiotherapy was associated with more physical impact.

Finally the findings corroborated with the results from the study by Cull et al. in 2014[51] .There is a negative correlation between the stage of the disease and the psychological well being[53]. Different treatment options cause different psychological symptoms[54].

Correlation tests between suicide ideation and other variables showed positive and significant correlation with duration of diagnosis (r=0.012, p<0.005), staging of cancer (r=0.511, p<0.001) and radiotherapy and surgery (r=0.419, p<0.001) supporting the findings from the study that concluded that the risk of suicide and deaths by ECI in the first year immediately after cancer diagnosis were higher than those the group that did not have cancer[56]. In this study there were 28.4% n=19 patients had suicidal ideation without a plan and55.2%n=37 patients had suicidal ideation with plan.Active suicidal ideation with specific plan and intent on suicidal ideation can be used toindicate serious suicidal ideation and can be used to trigger further evaluation andimmediate contact with patient's mental health practitioner.In this study 9% n=6 had interrupted attempt and 17.9% n=12 had an aborted attempt of suicide.

A similar finding was reported by MyungHeeAhn in 2015 on Suicide in cancer patients within the first year of diagnosis revealed the risk factors of suicide

during the first twelve months of diagnosis of cancer[57]. Suicide was found in 149 patients (40.0% of 373 suicides) in the first twelve months after the diagnosis of cancer. The anatomic site (($p = 0.01$)) and stage ($p < 0.001$) determined the early and late suicide. Early suicide (53.4%) was seen in advanced stages against late suicide (18.7%; $p < 0.001$). Cancers that had an advanced staging at the time of diagnosis were associated with a higher risk of suicide in the first twelve months of diagnosis.

Summarising the study, there is a correlation between the psychiatric morbidity, sexual function and quality of life with staging, treatment and duration of the disease.

SUMMARY

AND

CONCLUSIONS

SUMMARY AND CONCLUSIONS

1) Summarising the study, there is a correlation between the psychiatric morbidity, sexual function and quality of life and suicidal ideation with staging, treatment and duration of the disease.

2) Correlation tests between suicide ideation and other variables showed positive and significant correlation with duration of diagnosis, staging of cancer and radiotherapy and surgery.

3) Correlation tests between brief psychiatry rating scales and other variables showed positive and significant correlation with duration of

diagnosis, staging of cancer and radiotherapy and surgery corroborating with previous studies.

4) There is a negative correlation between the stage of the disease and the psychological well-being. Sexual dysfunction was more common after radiotherapy.

5) Cancers that had an advanced staging at the time of diagnosis were associated with a higher risk of suicide in the first twelve months of diagnosis.

6) New diagnosis of cervical cancer is related to moderate/severe anxiety or depression.The rate of depression is higher among women with cervical carcinoma.

7) Majority of the women diagnosed with cancer experience mental distress.

8) Quality of life is poor in advanced stage and in patients treated with radiotherapy.

LIMITATIONS

LIMITATIONS

1) The collection of data was done by the interviewer which may be a reason for the biased findings.

2) Only a small number of samples (67 patients) participated in this study.

3) The study was done at a single point of time, which prevents episodic nature of depression and anxiety symptom evaluation.

4) Being a cross sectional study, it has limitations in generalizing the results

5) This study was conducted in a tertiary care hospital where most of the patients had severe symptoms and hence the findings of this study cannot be generalized.

6) Since this study was done in a single site, the generalizability of the results are limited.

7) The presence of the study among the urban population limits our understanding of the prevalence of the psychiatric morbidity in cervical carcinoma patients among rural and sub urban population.

FUTURE

RECOMMENDATIONS

FUTURE RECOMMENDATIONS

1) Considering the fact the prevalence of psychiatric morbidity in patients with cervical carcinoma, it is recommended that patients with cervical carcinoma should be screened routinely for suicidal tendencies, anxiety and depression.

2) Then appropriate counselling should be an integral part of cervical carcinoma treatment based on the pre treatment assessment of psychiatric morbidity.

3) Patients undertaking treatment for cervical carcinoma must be screened for psychiatric morbidity like suicide, depression and anxiety.

4) The assessment should include sexual dysfunction as most of them reported a drop in sexual activity citing various reasons.

5) The treatment should focus on improving the overall quality of life taking into consideration the following parameters;

   - Pre treatment assessment for psychiatric morbidity

   - Pre treatment counselling

   - Assessment during treatment for suicide, anxiety and depression

   - Assessment during treatment for sexual dysfunction

   - Appropriate treatment and psychoeducation for any psychiatric morbidity if detected

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ANNEXURES

PRO-FORMA

DEMOGRAPHIC FACTORS

501) AGE

(1)18-30
(2)31-45
(3)41-55
(4)51-65

502) RELIGION

(1).Hindu
(2).Christian
(3).Muslim
(4).others

503) FAMILY

(1).Nuclear
(2).joint family

504) EDUCATION
(1).illiterate
(2).primary school
(3).middle school
(4).High school
(5).Higher secondary or intermediate
(6).Graduate or Postgraduate
(7).Profession or honours

505) OCCUPATION

(1).unemployed
(2).unskilled worker
(3).semiskilled worker
(4).skilled worker
(5).clerical,shopowner,Farmer
(6).semi profession
(7).profession

506) INCOME

(1)NIL
(2).2070-6150
(3).6150-10250
(4).10250-15380
(5).15380-20510
(6).20510-41020
(7).above 41020

507) SOCIO ECONOMIC STATUS

(1).low SES
(2).upper lowerSES
(3). Lower middle SES
(4).upper middle
(5).upper

508) MARITAL STATUS

(1).Married
(2).unmarried
(3).married-separated
(4).widowed

509) RESIDENCE

(1).corporation
(2).municipality
(3).town panchayat
(4).village panchayat

510) NO OF CHILDREN

(1).One
(2).Two
(3).Three
(4).Four and above

511) LIVING WITH

(1).None
(2).Husband
(3).Children
(4).Others

DISEASE FACTORS

512) month of diagnosis of cervical cancer
       1)<6months
       2)>6months

513). What type of treatment undergone
       1)surgery
       2)chemotherapy
       3)radiotherapy
       4)surgery+radiotherapyy
514). Stage of cancer
       1)stage 1
       2)stage 2
       3)stage 3
       4)stage 4
515) bprs total score
516) impression
       0)lesstha 50
       1)>50 significant pathology
517)HAM A total score

518)HAM-A normal
       1)<14 no pathology
       (b)14 -17   mild anxiety
       (c).18 to 24   moderate anxiety
       (d).25 to 30   severe

519). HAM-D –total score

520) impression
       (1).0 to 7   no PATHOLOGY
       (2).8 to 13   mild depression
       (3).14 to 18 moderate depression
       (4)19 -22   severe depression
       (5)>23very severe depression
521) Columbia suicide severity rating scale

      Suicidal ideation
         0)0-3 score
         1)4-5 score
522) suicidal behavior
       0) no
       1)yes

523)suicidal intent-rating

524)aborted attempt

      0)no
      1)yes

525)interrupted attempt

      0)no
      1)yes

Female sexual functioning index domain –desire –score
      526) arousal –score
      527) lubrication-score
      528) orgasm
      529) satisfaction
      530) pain
      531)) full score

Eortcqlq c-30

      532)function scale-0-100
      533)symptom scale-0-100
      534)global health status 0-100

HAMILTON DEPRESSION RATING SCALE (HAM-D)

(To be administered by a health care professional)

Patient Name _____   Today's Date _____

The HAM-D is designed to rate the severity of depression in patients. Although it contains 21 areas, calculate the patient's score on the first 17 answers.

1. **DEPRESSED MOOD**
   (Gloomy attitude, pessimism about the future, feeling of sadness, tendency to weep)
   0 = Absent
   1 = Sadness, etc.
   2 = Occasional weeping
   3 = Frequent weeping
   4 = Extreme symptoms

2. **FEELINGS OF GUILT**
   0 = Absent
   1 = Self-reproach, feels he/she has let people down
   2 = Ideas of guilt
   3 = Present illness is a punishment; delusions of guilt
   4 = Hallucinations of guilt

3. **SUICIDE**
   0 = Absent
   1 = Feels life is not worth living
   2 = Wishes he/she were dead
   3 = Suicidal ideas or gestures
   4 = Attempts at suicide

4. **INSOMNIA - Initial**
   (Difficulty in falling asleep)
   0 = Absent
   1 = Occasional
   2 = Frequent

5. **INSOMNIA - Middle**
   (Complains of being restless and disturbed during the night. Waking during the night.)
   0 = Absent
   1 = Occasional
   2 = Frequent

6. **INSOMNIA - Delayed**
   (Waking in early hours of the morning and unable to fall asleep again)
   0 = Absent
   1 = Occasional
   2 = Frequent

7. **WORK AND INTERESTS**
   0 = No difficulty
   1 = Feelings of incapacity, listlessness, indecision and vacillation
   2 = Loss of interest in hobbies, decreased social activities
   3 = Productivity decreased
   4 = Unable to work. Stopped working because of present illness only. (Absence from work after treatment or recovery may rate a lower score).

8. **RETARDATION**
   (Slowness of thought, speech, and activity; apathy; stupor.)
   0 = Absent
   1 = Slight retardation at interview
   2 = Obvious retardation at interview
   3 = Interview difficult
   4 = Complete stupor

9. **AGITATION**
   (Restlessness associated with anxiety.)
   0 = Absent
   1 = Occasional
   2 = Frequent

10. **ANXIETY - PSYCHIC**
    0 = No difficulty
    1 = Tension and irritability
    2 = Worrying about minor matters
    3 = Apprehensive attitude
    4 = Fears

HAMILTON DEPRESSION RATING SCALE (HAM-D)
(To be administered by a health care professional)

11. **ANXIETY - SOMATIC**
Gastrointestinal, indigestion
Cardiovascular, palpitation, Headaches
Respiratory, Genito-urinary, etc.
0 – Absent
1 – Mild
2 – Moderate
3 – Severe
4 – Incapacitating

12. **SOMATIC SYMPTOMS -**
GASTROINTESTINAL
(Loss of appetite , heavy feeling in abdomen;
constipation)
0 – Absent
1 – Mild
2 – Severe

13. **SOMATIC SYMPTOMS - GENERAL**
(Heaviness in limbs, back or head; diffuse
backache; loss of energy and fatiguability)
0 – Absent
1 – Mild
2 – Severe

14. **GENITAL SYMPTOMS**
(Loss of libido, menstrual disturbances)
0 – Absent
1 – Mild
2 – Severe

15. **HYPOCHONDRIASIS**
0 – Not present
1 – Self-absorption (bodily)
2 – Preoccupation with health
3 – Querulous attitude
4 – Hypochondriacal delusions

16. **WEIGHT LOSS**
0 – No weight loss
1 – Slight
2 – Obvious or severe

17. **INSIGHT**
(Insight must be interpreted in terms of pa-
tient's understanding and background.)
0 – No loss
1 – Partial or doubtfull loss
2 – Loss of insight

TOTAL ITEMS 1 TO 17: _____
0 - 7 – Normal
8 - 13 – Mild Depression
14-18 – Moderate Depression
19 - 22 – Severe Depression
$\geq$ 23 – Very Severe Depression

18. **DIURNAL VARIATION**
(Symptoms worse in morning or evening.
Note which it is.)
0 – No variation
1 – Mild variation; AM ( ) PM ( )
2 – Severe variation; AM ( ) PM ( )

19. **DEPERSONALIZATION AND**
DEREALIZATION
(feelings of unreality, nihilistic ideas)
0 – Absent
1 – Mild
2 – Moderate
3 – Severe
4 – Incapacitating

20. **PARANOID SYMPTOMS**
(Not with a depressive quality)
0 – None
1 – Suspicious
2 – Ideas of reference
3 – Delusions of reference and persecution
4 – Hallucinations, persecutory

21. **OBSESSIONAL SYMPTOMS**
(Obsessive thoughts and compulsions against
which the patient struggles)
0 – Absent
1 – Mild
2 – Severe

* Adapted from Hamilton, M. *Journal of Neurology, Neurosurgery, and Psychiatry.* 23:56 62, 1960.

Hamilton Anxiety Rating Scale (HAM-A)

Reference: Hamilton M. The assessment of anxiety states by rating. Br J Med Psychol 1959; 32:50–55.

Rating Clinician-rated

Administration time 10–15 minutes

Main purpose To assess the severity of symptoms of anxiety

Population Adults, adolescents and children

Commentary

The HAM-A was one of the first rating scales developed to measure the severity of anxiety symptoms, and is still widely used today in both clinical and research settings. The scale consists of 14 items, each defined by a series of symptoms, and measures both psychic anxiety (mental agitation and psychological distress) and somatic anxiety (physical complaints related to anxiety). Although the HAM-A remains widely used as an outcome measure in clinical trials, it has been criticized for its sometimes poor ability to discriminate between anxiolytic and antidepressant effects, and somatic anxiety versus somatic side effects. The HAM-A does not provide any standardized probe questions. Despite this, the reported levels of inter-rater reliability for the scale appear to be acceptable.

Scoring

Each item is scored on a scale of 0 (not present) to 4 (severe), with a total score range of 0–56, where <17 indicates mild severity, 18–24 mild to moderate severity and 25–30 moderate to severe.

Versions

The scale has been translated into: Cantonese for China, French and Spanish. An IVR version of the scale is available from Healthcare Technology Systems.

Additional references

Maier W, Buller R, Philipp M, Heuser I. The Hamilton Anxiety Scale: reliability, validity and sensitivity to change in anxiety and depressive disorders. J Affect Disord 1988;14(1):61–8.

Borkovec T and Costello E. Efficacy of applied relaxation and cognitive behavioral therapy in the treatment of generalized anxiety disorder. J Clin Consult Psychol 1993; 61(4):611–19

Address for correspondence

The HAM-A is in the public domain.

Patient Name _____ Date _____

Hamilton Anxiety Rating Scale (HAM-A)

Below is a list of phrases that describe certain feeling that people have. Rate the patients by finding the answer which best describes the extent to which he/she has these conditions. Select one of the five responses for each of the fourteen questions.

| 0 = Not present | 1 = Mild. | 2 = Moderate | 3 = Severe | 4 = Very severe. |

1   Anxious mood   [0] [1] [2] [3] [4]

Worries, anticipation of the worst, fearful anticipation, irritability.

2   Tension   [0] [1] [2] [3] [4]

Feelings of tension, fatigability, startle response, moved to tears easily, trembling, feelings of restlessness, inability to relax.

3   Fears   [0] [1] [2] [3] [4]

Of dark, of strangers, of being left alone, of animals, of traffic, of crowds.

4   Insomnia   [0] [1] [2] [3] [4]

Difficulty in falling asleep, broken sleep, unsatisfying sleep and fatigue on waking, dreams, nightmares, night terrors.

5   Intellectual   [0] [1] [2] [3] [4]

Difficulty in concentration, poor memory.

6   Depressed mood   [0] [1] [2] [3] [4]

Loss of interest, lack of pleasure in hobbies, depression, early waking, diurnal swing.

7   Somatic (muscular)   [0] [1] [2] [3] [4]

Pains and aches, twitching, stiffness, myoclonic jerks, grinding of teeth, unsteady voice, increased muscular tone.

8   Somatic (sensory)   [0] [1] [2] [3] [4]

Tinnitus, blurring of vision, hot and cold flushes, feelings of weakness, pricking sensation.

9   Cardiovascular symptoms   [0] [1] [2] [3] [4]

Tachycardia, palpitations, pain in chest, throbbing of vessels, fainting feelings, missing beat.

10   Respiratory symptoms   [0] [1] [2] [3] [4]

Pressure or constriction in chest, choking feelings, sighing, dyspnea.

11   Gastrointestinal symptoms   [0] [1] [2] [3] [4]

Difficulty in swallowing, wind abdominal pain, burning sensations, abdominal fullness, nausea, vomiting, borborygmi, looseness of bowels, loss of weight, constipation.

12   Genitourinary symptoms   [0] [1] [2] [3] [4]

Frequency of micturition, urgency of micturition, amenorrhea, menorrhagia, development of frigidity, premature ejaculation, loss of libido, impotence.

13   Autonomic symptoms   [0] [1] [2] [3] [4]

Dry mouth, flushing, pallor, tendency to sweat, giddiness, tension headache, raising of hair.

14   Behavior at interview   [0] [1] [2] [3] [4]

Fidgeting, restlessness or pacing, tremor of hands, furrowed brow, strained face, sighing or rapid respiration, facial pallor, swallowing, etc.

BRIEF PSYCHIATRIC RATING SCALE (BPRS)

Patient Name _____   Today's Date _____

Please enter the score for the term that best describes the patient's condition.

0 = Not assessed, 1 = Not present, 2 = Very mild, 3 = Mild, 4 = Moderate, 5 = Moderately severe, 6 = Severe,
7 = Extremely severe

Score

	1.	**SOMATIC CONCERN** Preoccupation with physical health, fear of physical illness, hypochondriasis.
	2.	**ANXIETY** Worry, fear, over-concern for present or future, uneasiness.
	3.	**EMOTIONAL WITHDRAWAL** Lack of spontaneous interaction, isolation deficiency in relating to others.
	4.	**CONCEPTUAL DISORGANIZATION** Thought processes confused, disconnected, disorganized, disrupted.
	5.	**GUILT FEELINGS** Self-blame, shame, remorse for past behavior.
	6.	**TENSION** Physical and motor manifestations of nervousness, over-activation.
	7.	**MANNERISMS AND POSTURING** Peculiar, bizarre, unnatural motor behavior (not including tic).
	8.	**GRANDIOSITY** Exaggerated self-opinion, arrogance, conviction of unusual power or abilities.
	9.	**DEPRESSIVE MOOD** Sorrow, sadness, despondency, pessimism.
	10.	**HOSTILITY** Animosity, contempt, belligerence, disdain for others.
	11.	**SUSPICIOUSNESS** Mistrust, belief others harbor malicious or discriminatory intent.
	12.	**HALLUCINATORY BEHAVIOR** Perceptions without normal external stimulus correspondence.
	13.	**MOTOR RETARDATION** Slowed, weakened movements or speech, reduced body tone.
	14.	**UNCOOPERATIVENESS** Resistance, guardedness, rejection of authority.
	15.	**UNUSUAL THOUGHT CONTENT** Unusual, odd, strange, bizarre thought content.
	16.	**BLUNTED AFFECT** Reduced emotional tone, reduction in formal intensity of feelings, flatness.
	17.	**EXCITEMENT** Heightened emotional tone, agitation, increased reactivity.
	18.	**DISORIENTATION** Confusion or lack of proper association for person, place or time.

BRIEF PSYCHIATRIC RATING SCALE (BPRS)

Instructions for the Clinician:

The Brief Psychiatric Rating Scale (BPRS) is a widely used instrument for assessing the positive, negative, and affective symptoms of individuals who have psychotic disorders, especially schizophrenia. It has proven particularly valuable for documenting the efficacy of treatment in patients who have moderate to severe disease.

It should be administered by a clinician who is knowledgeable concerning psychotic disorders and able to interpret the constructs used in the assessment. Also considered is the individual's behavior over the previous 2-3 days and this can be reported by the patient's family.

The BPRS consists of 18 symptom constructs and takes 20-30 minutes for the interview and scoring. The rater should enter a number ranging from 1 (not present) to 7 (extremely severe). 0 is entered if the item is not assessed.

First published in 1962 as a 16-construct tool by Drs. John Overall and Donald Gorham, the developers added two additional items, resulting in the 18-item scale used widely today to assess the effectiveness of treatment.

BPRS Scoring Instructions:

Sum the scores from the 18 items. Record the total score and compare the total score from one evaluation to the next as the measure of response to treatment.

Overall, JE, Gorham DR. The Brief Psychiatric Rating Scale (BPRS): recent developments in ascertainment and scaling. Psychopharmacology Bulletin 24:97-99, 1988.

COLUMBIA-SUICIDE SEVERITY

RATING SCALE

(C-SSRS)

Lifetime/Recent Version

Version 1/14/09

Posner, K.; Brent, D.; Lucas, C.; Gould, M.; Stanley, B.; Brown, G.; Fisher, P.; Zelazny, J.; Burke, A.; Oquendo, M.; Mann, J.

Disclaimer:

This scale is intended to be used by individuals who have received training in its administration. The questions contained in the Columbia-Suicide Severity Rating Scale are suggested probes. Ultimately, the determination of the presence of suicidal ideation or behavior depends on the judgment of the individual administering the scale.

Definitions of behavioral suicidal events in this scale are based on those used in **The Columbia Suicide History Form**, *developed by John Mann, MD and Maria Oquendo, MD, Conte Center for the Neuroscience of Mental Disorders (CCNMD), New York State Psychiatric Institute, 1051 Riverside Drive, New York, NY, 10032. (Oquendo M. A., Halberstam B. & Mann J. J., Risk factors for suicidal behavior: utility and limitations of research instruments. In M.B. First [Ed.] Standardized Evaluation in Clinical Practice, pp. 103 -130, 2003.)*

SUICIDAL BEHAVIOR *(Check all that apply, so long as these are separate events; must ask about all types)*			Lifetime		Past 3 months	

Actual Attempt:
A potentially self-injurious act committed with at least some wish to die, *as a result of act.* Behavior was in part thought of as method to kill oneself. Intent does not have to be 100%. If there is **any** intent/desire to die associated with the act, then it can be considered an actual suicide attempt. *There does not have to be any injury or harm,* just the potential for injury or harm. If person pulls trigger while gun is in mouth but gun is broken so no injury results, this is considered an attempt.
Inferring Intent: Even if an individual denies intent/wish to die, it may be inferred clinically from the behavior or circumstances. For example, a highly lethal act that is clearly not an accident so no other intent but suicide can be inferred (e.g., gunshot to head, jumping from window of a high floor/story). Also, if someone denies intent to die, but they thought that what they did could be lethal, intent may be inferred.
Have you made a suicide attempt?
Have you done anything to harm yourself?
Have you done anything dangerous where you could have died?
   What did you do?
   Did you_____ as a way to end your life?
   Did you want to die (even a little) when you____?
   Were you trying to end your life when you____?
   Or Did you think it was possible you could have died from____?
Or did you do it purely for other reasons / without ANY intention of killing yourself (like to relieve stress, feel better, get sympathy, or get something else to happen)? *(Self-Injurious Behavior without suicidal intent)*
If yes, describe:

Has subject engaged in Non-Suicidal Self-Injurious Behavior?

Actual Attempt: — Yes ☐ No ☐ (Lifetime); Yes ☐ No ☐ (Past 3 months); Total # of Attempts _____ / Total # of Attempts

Non-Suicidal Self-Injurious Behavior: Yes ☐ No ☐ / Yes ☐ No ☐

Interrupted Attempt: Yes ☐ No ☐ / Yes ☐ No ☐
When the person is interrupted (by an outside circumstance) from starting the potentially self-injurious act *(if not for that, actual attempt would have occurred).*
Overdose: Person has pills in hand but is stopped from ingesting. Once they ingest any pills, this becomes an attempt rather than an interrupted attempt. Shooting: Person has gun pointed toward self, gun is taken away by someone else, or is somehow prevented from pulling trigger. Once they pull the trigger, even if the gun fails to fire, it is an attempt. Jumping: Person is poised to jump, is grabbed and taken down from ledge. Hanging: Person has noose around neck but has not yet started to hang - is stopped from doing so.
Has there been a time when you started to do something to end your life but someone or something stopped you before you actually did anything?
If yes, describe:

Total # of interrupted _____ / Total # of interrupted

Aborted or Self-Interrupted Attempt: Yes ☐ No ☐ / Yes ☐ No ☐
When person begins to take steps toward making a suicide attempt, but stops themselves before they actually have engaged in any self-destructive behavior. Examples are similar to interrupted attempts, except that the individual stops him/herself, instead of being stopped by something else.
Has there been a time when you started to do something to try to end your life but you stopped yourself before you actually did anything?
If yes, describe:

Total # of aborted or self-interrupted _____ / Total # of aborted or self-interrupted

Preparatory Acts or Behavior: Yes ☐ No ☐ / Yes ☐ No ☐
Acts or preparation towards imminently making a suicide attempt. This can include anything beyond a verbalization or thought, such as assembling a specific method (e.g., buying pills, purchasing a gun) or preparing for one's death by suicide (e.g., giving things away, writing a suicide note).
Have you taken any steps towards making a suicide attempt or preparing to kill yourself (such as collecting pills, getting a gun, giving valuables away or writing a suicide note)?
If yes, describe:

Suicidal Behavior: Yes ☐ No ☐ / Yes ☐ No ☐
Suicidal behavior was present during the assessment period?

	Most Recent Attempt Date:	Most Lethal Attempt Date:	Initial/First Attempt Date:
Actual Lethality/Medical Damage: 0. No physical damage or very minor physical damage (e.g., surface scratches). 1. Minor physical damage (e.g., lethargic speech; first-degree burns; mild bleeding; sprains). 2. Moderate physical damage; medical attention needed (e.g., conscious but sleepy, somewhat responsive; second-degree burns; bleeding of major vessel). 3. Moderately severe physical damage; medical hospitalization and likely intensive care required (e.g., comatose with reflexes intact; third-degree burns less than 20% of body; extensive blood loss but can recover; major fractures). 4. Severe physical damage; medical hospitalization with intensive care required (e.g., comatose without reflexes; third-degree burns over 20% of body; extensive blood loss with unstable vital signs; major damage to a vital area). 5. Death	Enter Code _____	Enter Code _____	Enter Code _____
Potential Lethality: Only Answer if Actual Lethality=0 Likely lethality of actual attempt if no medical damage (the following examples, while having no actual medical damage, had potential for very serious lethality: put gun in mouth and pulled the trigger but gun fails to fire so no medical damage; laying on train tracks with oncoming train but pulled away before run over). 0 = Behavior not likely to result in injury 1 = Behavior likely to result in injury but not likely to cause death 2 = Behavior likely to result in death despite available medical care	Enter Code _____	Enter Code _____	Enter Code _____

Female Sexual Function Index (FSFI) ©

Subject Identifier _____   Date _____

INSTRUCTIONS: These questions ask about your sexual feelings and responses during the past 4 weeks. Please answer the following questions as honestly and clearly as possible. Your responses will be kept completely confidential. In answering these questions the following definitions apply:

Sexual activity can include caressing, foreplay, masturbation and vaginal intercourse.

Sexual intercourse is defined as penile penetration (entry) of the vagina.

Sexual stimulation includes situations like foreplay with a partner, self-stimulation (masturbation), or sexual fantasy.

CHECK ONLY ONE BOX PER QUESTION.

Sexual desire or interest is a feeling that includes wanting to have a sexual experience, feeling receptive to a partner's sexual initiation, and thinking or fantasizing about having sex.

1. Over the past 4 weeks, how **often** did you feel sexual desire or interest?

   ☐ Almost always or always
   ☐ Most times (more than half the time)
   ☐ Sometimes (about half the time)
   ☐ A few times (less than half the time)
   ☐ Almost never or never

2. Over the past 4 weeks, how would you rate your **level** (degree) of sexual desire or interest?

   ☐ Very high
   ☐ High
   ☐ Moderate
   ☐ Low
   ☐ Very low or none at all

Sexual arousal is a feeling that includes both physical and mental aspects of sexual excitement. It may include feelings of warmth or tingling in the genitals, lubrication (wetness), or muscle contractions.

3. Over the past 4 weeks, how **often** did you feel sexually aroused ("turned on") during sexual activity or intercourse?

☐ No sexual activity
☐ Almost always or always
☐ Most times (more than half the time)
☐ Sometimes (about half the time)
☐ A few times (less than half the time)
☐ Almost never or never

4. Over the past 4 weeks, how would you rate your **level** of sexual arousal ("turn on") during sexual activity or intercourse?

☐ No sexual activity
☐ Very high
☐ High
☐ Moderate
☐ Low
☐ Very low or none at all

5. Over the past 4 weeks, how **confident** were you about becoming sexually aroused during sexual activity or intercourse?

☐ No sexual activity
☐ Very high confidence
☐ High confidence
☐ Moderate confidence
☐ Low confidence
☐ Very low or no confidence

6. Over the past 4 weeks, how **often** have you been satisfied with your arousal (excitement) during sexual activity or intercourse?

☐ No sexual activity
☐ Almost always or always
☐ Most times (more than half the time)
☐ Sometimes (about half the time)
☐ A few times (less than half the time)
☐ Almost never or never

7. Over the past 4 weeks, how **often** did you become lubricated ("wet") during sexual activity or intercourse?

- ☐ No sexual activity
- ☐ Almost always or always
- ☐ Most times (more than half the time)
- ☐ Sometimes (about half the time)
- ☐ A few times (less than half the time)
- ☐ Almost never or never

8. Over the past 4 weeks, how **difficult** was it to become lubricated ("wet") during sexual activity or intercourse?

- ☐ No sexual activity
- ☐ Extremely difficult or impossible
- ☐ Very difficult
- ☐ Difficult
- ☐ Slightly difficult
- ☐ Not difficult

9. Over the past 4 weeks, how often did you **maintain** your lubrication ("wetness") until completion of sexual activity or intercourse?

- ☐ No sexual activity
- ☐ Almost always or always
- ☐ Most times (more than half the time)
- ☐ Sometimes (about half the time)
- ☐ A few times (less than half the time)
- ☐ Almost never or never

10. Over the past 4 weeks, how **difficult** was it to maintain your lubrication ("wetness") until completion of sexual activity or intercourse?

- ☐ No sexual activity
- ☐ Extremely difficult or impossible
- ☐ Very difficult
- ☐ Difficult
- ☐ Slightly difficult
- ☐ Not difficult

11. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **often** did you reach orgasm (climax)?

☐ No sexual activity
☐ Almost always or always
☐ Most times (more than half the time)
☐ Sometimes (about half the time)
☐ A few times (less than half the time)
☐ Almost never or never

12. Over the past 4 weeks, when you had sexual stimulation or intercourse, how **difficult** was it for you to reach orgasm (climax)?

☐ No sexual activity
☐ Extremely difficult or impossible
☐ Very difficult
☐ Difficult
☐ Slightly difficult
☐ Not difficult

13. Over the past 4 weeks, how **satisfied** were you with your ability to reach orgasm (climax) during sexual activity or intercourse?

☐ No sexual activity
☐ Very satisfied
☐ Moderately satisfied
☐ About equally satisfied and dissatisfied
☐ Moderately dissatisfied
☐ Very dissatisfied

14. Over the past 4 weeks, how **satisfied** have you been with the amount of emotional closeness during sexual activity between you and your partner?

☐ No sexual activity
☐ Very satisfied
☐ Moderately satisfied
☐ About equally satisfied and dissatisfied
☐ Moderately dissatisfied
☐ Very dissatisfied

15. Over the past 4 weeks, how **satisfied** have you been with your sexual relationship with your partner?

- [ ] Very satisfied
- [ ] Moderately satisfied
- [ ] About equally satisfied and dissatisfied
- [ ] Moderately dissatisfied
- [ ] Very dissatisfied

16. Over the past 4 weeks, how **satisfied** have you been with your overall sexual life?

- [ ] Very satisfied
- [ ] Moderately satisfied
- [ ] About equally satisfied and dissatisfied
- [ ] Moderately dissatisfied
- [ ] Very dissatisfied

17. Over the past 4 weeks, how **often** did you experience discomfort or pain <u>during</u> vaginal penetration?

- [ ] Did not attempt intercourse
- [ ] Almost always or always
- [ ] Most times (more than half the time)
- [ ] Sometimes (about half the time)
- [ ] A few times (less than half the time)
- [ ] Almost never or never

18. Over the past 4 weeks, how **often** did you experience discomfort or pain <u>following</u> vaginal penetration?

- [ ] Did not attempt intercourse
- [ ] Almost always or always
- [ ] Most times (more than half the time)
- [ ] Sometimes (about half the time)
- [ ] A few times (less than half the time)
- [ ] Almost never or never

19. Over the past 4 weeks, how would you rate your **level** (degree) of discomfort or pain during or following vaginal penetration?

- [ ] Did not attempt intercourse
- [ ] Very high
- [ ] High
- [ ] Moderate
- [ ] Low
- [ ] Very low or none at all

Thank you for completing this questionnaire

EORTC QLQ-C30 (version 3)

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.

Please fill in your initials: ☐☐☐☐

Your birthdate (Day, Month, Year): ☐☐☐☐☐☐

Today's date (Day, Month, Year): 31 ☐☐☐☐☐☐

		Not at All	A Little	Quite a Bit	Very Much
1.	Do you have any trouble doing strenuous activities, like carrying a heavy shopping bag or a suitcase?	1	2	3	4
2.	Do you have any trouble taking a <u>long</u> walk?	1	2	3	4
3.	Do you have any trouble taking a <u>short</u> walk outside of the house?	1	2	3	4
4.	Do you need to stay in bed or a chair during the day?	1	2	3	4
5.	Do you need help with eating, dressing, washing yourself or using the toilet?	1	2	3	4

During the past week:		Not at All	A Little	Quite a Bit	Very Much
6.	Were you limited in doing either your work or other daily activities?	1	2	3	4
7.	Were you limited in pursuing your hobbies or other leisure time activities?	1	2	3	4
8.	Were you short of breath?	1	2	3	4
9.	Have you had pain?	1	2	3	4
10.	Did you need to rest?	1	2	3	4
11.	Have you had trouble sleeping?	1	2	3	4
12.	Have you felt weak?	1	2	3	4
13.	Have you lacked appetite?	1	2	3	4
14.	Have you felt nauseated?	1	2	3	4
15.	Have you vomited?	1	2	3	4
16.	Have you been constipated?	1	2	3	4

<u>Please go on to the next page</u>

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During the past week:	Not at All	A Little	Quite a Bit	Very Much
17. Have you had diarrhea?	1	2	3	4
18. Were you tired?	1	2	3	4
19. Did pain interfere with your daily activities?	1	2	3	4
20. Have you had difficulty in concentrating on things, like reading a newspaper or watching television?	1	2	3	4
21. Did you feel tense?	1	2	3	4
22. Did you worry?	1	2	3	4
23. Did you feel irritable?	1	2	3	4
24. Did you feel depressed?	1	2	3	4
25. Have you had difficulty remembering things?	1	2	3	4
26. Has your physical condition or medical treatment interfered with your family life?	1	2	3	4
27. Has your physical condition or medical treatment interfered with your social activities?	1	2	3	4
28. Has your physical condition or medical treatment caused you financial difficulties?	1	2	3	4

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

URKUND

Urkund Analysis Result

Analysed Document: the.docx (D31190839)
Submitted: 10/10/2017 5:18:00 PM
Submitted By: punithan4u@rediffmail.com
Significance: 1 %

Sources included in the report:

1341040005-S.doc (D25136174)

Instances where selected sources appear:

1

MASTER CHART