A Dissertation on

"A COMPARATIVE ASSESSMENT OF PSYCHIATRIC MORBIDITY, QUALITY OF LIFE AND CARE GIVER BURDEN IN PATIENTS WITH MALIGNANCY AND PATIENTS OF POST MYOCARDIAL INFARCTION"

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CERTIFICATE

This is to certify that this dissertation entitled **"A COMPARATIVE ASSESSMENT OF PSYCHIATRIC MORBIDITY, QUALITY OF LIFE AND CARE GIVER BURDEN IN PATIENTS WITH MALIGNANCY AND PATIENTS OF POST MYOCARDIAL INFARCTION ",** Submitted by **Dr. NATARAJAN. P.** to the faculty of PSYCHIATRY, The Tamil Nadu Dr. M.G.R. Medical University, Chennai, in partial fulfillment of the requirement in the award of degree of M.D., Branch - XVIII (PSYCHIATRY), for the April 2013 examination is a bonafide research work carried out by him during the period of June 2012 to November 2012 at Government Stanley Medical College and Hospital, Chennai, under our direct supervision and guidance of **ProfDr.G.S.CHANDRALEKA**, Professor and Head, Department of Psychiatry at Stanley Medical College, Chennai.

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This is to certify that the dissertation presented herein by **"A COMPARATIVE ASSESSMENT OF PSYCHIATRIC MORBIDITY, QUALITY OF LIFE AND CARE GIVER BURDEN IN PATIENTS WITH MALIGNANCY AND PATIENTS OF POST MYOCARDIAL INFARCTION", Dr.NATARAJAN.P.,** is an original work done in the Department of Psychiatry, Government Stanley Medical College and Hospital, Chennai in partial fulfillment of regulations of the Tamilnadu Dr. M.G.R. Medical University for the award of degree of M.D. (PSYCHIATRY) Branch XVIII, under my supervision during the academic period 2010-2013.

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DECLARATION

I, **Dr.NATARAJAN.P.**, Solemnly declare that the dissertation **"A COMPARATIVE ASSESSMENT OF PSYCHIATRIC MORBIDITY, QUALITY OF LIFE AND CARE GIVER BURDEN IN PATIENTS WITH MALIGNANCY AND PATIENTS OF POST MYOCARDIAL INFARCTION",** is a bonafide work done by me during the period of June 2012 to November 2012 at Government Stanley Medical College and Hospital, under the expert supervision of **Prof.Dr.G.S.CHANDRALEKA, M.D, D.P.M.,** Professor and Head of Department Of Psychiatry, Government Stanley Medical College, Chennai.

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CONTENTS

S.NO.	TITLE	PAGE NO.
1.	INTRODUCTION	1
2.	REVIEW OF LITERATURE	6
3.	AIMS AND OBJECTIVES	20
4.	MATERIALS AND METHODS	24
5.	OBSERVATIONS AND RESULTS	33
6.	DISCUSSION	81
7.	LIMITATIONS AND SUGGESTIONS	91
8.	SUMMARY AND CONCLUSION	92
9.	ANNEXURES	
	(a) BIBLIOGRAPHY	94
	(b) PROFORMA	111
	(c) SCALES	
	(d) MASTER CHART	

INTRODUCTION

Cancer is definitely a life threatening clinical entity and the incidence of Cancer is on the rise. The world wide death toll is about 12% of all diseases(1) and the prevalence of cancer may increase from 11.3 million patients in 2007 to about 15.5 million by the year 2030(1).

According to the International Agency for Research on Cancer of WHO, it has been estimated that the death by cancer in India in the year 2010 about 555000(10). The incidence of cancer in India,(11) lung &bronchus first common, prostate being the second, followed by breast and colorectal and other common cancers are pancreas, stomach and cervix uteri.

For centuries, it had been believed that " cancer equals death"(Jimmie Holland) (40). Even in this modern era of treatment, people still have the belief that, pain and death from cancer is inevitable(3).

Cancer is potentially a dangerous illness, which can have a definite disturbances in the physical as well as psychological wellbeing of the individual with the cancer and thereby affects the emotional and financial needs of family members and their care givers.

The patients of cancer with metastasis, who were previously found to be more fatal, they now turned out to be long time survivors with advancement in treatment modalities. They need palliative care which may have impact on both the patients and the care giver's physical and psychological morbidity and increases the care giver burden.

The diagnosis of malignancy itself can cause significant psychological distress called as sixth vital sign. The commonest psychiatric morbidity seen with cancer patients is depression and once it was considered as the only emotional reaction of the cancer patients. The previous studies conducted on the out patient cancer population, reported 34% to have clinically significant level of psychological disturbances. The studies from USA also confirmed these findings(3)(4) and it is been found that in Indian settings also about 38% of cancer patients have identifiable anxiety or depressive disorder.

In most of the patients with cancer, at advanced stage of illness and even with difficult state of health, prefer to stay at home than at the hospital(44,45,46) and they are taken care by their family members either spouse, daughter and son or parents and in some cases by relatives and they are called as primary care givers. Most of these patients avoid long

term hospital stay except for treatment periods and data from some studies also confirmed these findings(47,48,49).

In the early stage of illness, the diagnosis of cancer and the treatment is having more impact on psychological morbidity, and in the advanced stage of illness, the physical problem and imminent death are causing more distress and increasing the decline in the quality of life and burden to the care givers.

Recent studies have proved, each diagnosis and modality of treatment has varied impact on the psychological morbidity, quality of life and care giver burden and overall outcome in the patient.

The fear of incurability, pain, disfigurement, recurrence of disease and sense of helplessness are the major sources of continuous distress in cancer patients.

A similar life threatening medical illness is myocardial infarction(MI). Many studies have enumerated the relationship between the myocardial infarction and the psychological factors and found to have affected the outcome as well as the quality of life of the patient.

In the causation of myocardial infarction, diabetes mellitus, hypertension, smoking, increased low density lipoprotein and type A

personality are direct risk factors. The genetic factors also play a strong role in the causation of ischemic heart diseases.

Myocardial infarction causes 11% to almost 50% of all deaths in many developed countries and one of the important cause of death in developing countries.

In a study, about 33% of patients with myocardial infarction developed depression and it is also found that there is increased mortality rate after Myocardial Infarction in depressed patients than in non depressed ones(52,53) and it is been proved that lower education, poor income, increased stress, lack of social support are all related to the decline in outcome in these patients(54).The increased burden caused by depression and anxiety following any other co morbid medical illness also has a negative impact in the outcome in myocardial infarction patients.

It is a proven fact that, relief of psychiatric morbidity in patients with Myocardial Infarction improve daily activities, productivity and cost effects to the health services. This has a definite impact on the long term survival and treatment outcome and also the quality of life. It also increases the burden of the primary care givers.

Now a days, much of the burden of care is been shifted from health care professional to the patients and their family members. So the importance of care giving and neglect of health of the care giver are under further research as their burden is not expressed especially in the Indian cultural background.

In India, the studies focused on life threatening illnesses with psychiatric morbidity, quality of life and care giver burden are less compared to western world , hence this study is undertaken to assess these factors in a tertiary care hospital.

REVIEW OF LITERATURE

PSYCHO ONCOLOGY:

The term psycho oncology refers to " diverse psychological, social, behavioral and psychiatric issues related to cancer prevention, cancer illness and treatment and cancer survivorship"(Breitbert & Chochinov:1998), and it concerns with" emotional responses of patients at all stages of disease, their families and care takers as well as psychological, behavioral and social factors that may influence cancer morbidity and mortality"(Holland 1992)(5).

PSYCHIATRIC MORBIDITY IN CANCER PATIENTS:

Psychiatric morbidity is common in cancer patients, especially depression and anxiety. The diagnosis of depression in cancer patients becomes difficult as most of the features fulfilling the criteria for depression are resembling the symptoms of cancer and it may be up to a diagnosing level also(55). The co occurrence of anxiety features seen in cancer patients is more compared to the general population(56), but the anaemia complicating cancer may present with features like increased fatigability, breathlessness, palpitation to be differentiated from anxiety.

Many studies have concluded, the prevalence of anxiety and depression in cancer patients(2).

The common psychological distress seen after diagnosis of cancer include fear, guilt, hopelessness, helplessness, worries of future, hostility and suicidal thoughts ,anger and grief. These features may differ from individual to individual and according to the type & site of cancer and its stage of illness with or without metastasis and other accompanying medical illnesses. All these are predictors for further aggravation of psychological distress.

During diagnosis some cancer patient's presenting complaint itself is depression, mainly the carcinoma pancreas and it is proven in a study that about 50% of patients with ca pancreas presented with depression. So it is becoming important to diagnose depression earlier as it may cause decline the survival rate and may aggravate earlier death rates in cancer patients. The depression may lead to poor compliance for the treatment and further worsen the condition and may induce suicidal thoughts or thoughts of hastening his death(57,58,59).

The severity of psychological symptoms may vary according to cancer types(60.61). Anxiety and depression in cancer patients may be even due to the diagnosis itself and it may become increased with preoccupation

about the outcome, modalities & duration of treatment and fear of treatment complication(62,63,64). Many studies have proved that, the various treatment methods like surgery, chemotherapy and radiotherapy may cause side effects mimicking psychiatric symptoms and many chemotherapeutic agents during treatment produce depression and anxiety especially vinca alkaloids and there are reports says that vincristine induces hallucination in the patients on treatment.

In anxiety disorders, the generalized anxiety disorder is commonly diagnosed, other anxiety disorders include panic disorder, adjustment disorder with anxious mood and post traumatic stress disorder(65,66).

About 10% - 25% of patients presenting with depression, which is four times the depression in general population(67,68) and it was concluded that, even though previous studies states about depression and anxiety co occur, one study revealed that anxiety was not seen as a separate entity once the depression is diagnosed. But in some patients anxiety features were about to be differentiated from depression with clarity(1).

Previous studies have established the association of diagnosis at younger age has increased psychological morbidity(3) and predicts earlier detection and treatment of depression improves the outcome in these patients.

In a study done in breast cancer patients with neo adjuvant therapy, concluded that the chemotherapy had a direct correlation with depression and anxiety which lowered in good responding patients(8) although there was initial surge in psychiatric morbidity, later decreased. It is also stated that earlier diagnosis of breast cancer and use of neo adjuvant therapy increases survival of the patient(69). Depression and anxiety is well documented in women with breast cancer in the earlier stage, in a study, which stressed upon the needs of the psychological services after 1 year of diagnosis and at the time of recurrence of the illness(6).

Over all the presentation of psychosis is less reported in literature. In a study it is found that , psychological distress in these patients predicts the mental and physical out comes and if the intensity varies greatly it is also affecting the family members or care givers(70). And the study concluded that the cancer affects the entire family not only the patients.

Several studies in India, found out the prevalence of psychiatric morbidity between 40% to 80%(5) and these findings are similar to statistical reports from western countries(5) and it is pointed out that low detection and decreased referral to the psychiatric services are the areas to be explored further to find out the exact psychiatric morbidity in these patients.

QUALITY OF LIFE IN CANCER PATIENTS:

Recent advances in the treatment of cancers, has increased more number of patients being benefited there by adding more years of survival, so the research in the quality of life of such survivors has also increased. Studies have been done in various domains of quality of life like, physical activities, psychological and cognitive improvement, social and interpersonal relationship, bodily energy, fatigability and even sexuality(70-80). Some studies even concentrated on spirituality after development of malignant lesions.

Ganz et al, study revealed, no significant results arrived in relation to quality of life, emotionality or energy level and they have found good physical activity on patients who did not receive any adjuvant therapy (71). And in the same study, survivors evaluated after 6 years duration and found, significant changes in quality of life, physical activity and social relationships and adjuvant therapy patients had worse outcome in these domains.

Various studies have found the importance of assessing domains like physical, psychological, social and also spiritual needs (8,82) and Dow et al, in this area of research developed the quality of life cancer survivors

tool. Various modality of treatment has its own outcome in the quality of life (7,82).

In patients with chemotherapy, the therapeutic interventions merely prolonging the survival, but there is less improvement in quality of life. Many previous studies have focused on the survival, not concentrated on quality of life or psychological morbidity. Maguire et al, found, chemotherapy causes more of nausea and fatigability with decline in sexual life also.

Decline in quality of life with decreased physical function reported in some studies(36) by Momis et al 1986 &King 1996 and klee et al 1997& Michelson et al 2000, reported better emotional functioning at the older age. It is shown that younger age and being with spouse had a negative impact in social functioning level(36).

The focus on depression in cancer patients been the area of interest by many researchers, as it has a direct influence on the functioning level and quality of life of patients, which can definitely affect the outcome and compliance of treatment and care by themselves(1).

In Indian settings, studies have shown that the psychological morbidity and well being are not transient in these patients(ca6). A study by

Chawla et al,1999, showed decreased QOL in patients after radiotherapy and the study suggested further exploration is needed in this faculty by more studies, from screening to treatment in full, in remission as well as in the recurrence. Sharma et al 2003, showed that more distress and coping difficulty in woman patients diagnosed to have breast & cervical cancers. Desouza & Desouza, 1979, reported, more Indian woman planned for mastectomy were seeking for information about the procedure. Khiballa & khiballa, 1999, showed high submissiveness in women undergone mastectomy than with others. Khan et al 2000, Khalid & Gul 2000, reported about distressing issues among women with cancer.

CARE GIVERS AND CANCER PATIENTS:

The care givers of cancer patients have to spend a lot of time with them for a week , compared to other chronic illnesses like dementia and others(Haley ; kemonde2001). The burden of care giving is increasing day by day. These primary care givers are exposed to an intense care giving for which they might be unprepared to handle it. The unpredictive duration of illness and the unexpected impact of treatment will be an add to this unpreparedness.

There is an increasing burden to these care givers as more number of patients are managed at home after an initial period of hospitalization. The burden will be increasing if the the duration of illness extending longer. The emotional disturbances, loneliness, feeling low, fear of future, financial burden on family, decline in personal and sexual life in care givers are becoming more pronounced. While patients on palliative care, the care giver has to provide the care to these advanced disease patients for even years together which may lead to show definite effect on QOL and physical health of care giver too(34).

A study by Nijoboer et al, noticed the care givers may be able to sustain their quality of life by increasing their self esteem, to the newly diagnosed patients(34) and found 20% depression in care givers after 6 months of operation for cancer.

More et al showed that, care givers emotional disturbances are persistently present in all age groups (34). Grunfield et al showed, the depression and anxiety in care givers is increasing more from palliative to the terminal stage of illness(34).

Studies have revealed, most of the care givers are females and now the number of male care givers are also increasing (34). To some extent the care giver burden may vary according to the relationship, emotional

bonding and financial status of the patients and it is expected that more emotional bonding may lead to more psychological morbidity in care givers. There is increased features of anxiety in both genders and it is higher in females (34).

A study has shown that, there is 13% of care givers had features of major psychiatric illness and 25% of them met a mental health professional for their distress after diagnosis of cancer in their relatives(4). The psychological burden on care giver is been scientifically established with previous results (4). The care givers at their excess strain may neglect their psychological problems and screening for the symptoms and treatment if necessary may become mandatory(4) and the same study showed at least 46.2% of care givers needed intervention for their psychological problems by psychotherapy or drugs to reduce their burden.

In Indian scenario, very little information available on family care givers. A study by Sharan, Mehta & Chaudry 1999b, 1995b, reported the psychological disturbances, awareness and functioning level of family members after diagnosis of cancer. Kuruvilla & Singh 1985, shown that the care givers of patients on radiotherapy are with anxiety about cancer. Mehta & Abool in 1982, reported family disturbances in 65% of patients

with cancer larynx and they suggested the unmet needs of communication between care giver and the medical team to be explored in future studies.

Latest studies from western world have supported this views especially in managing cancer patients of elderly age (35). A study by Given & Given et al also suggested the need for care giver attention, needs of recognizing the family care giver as care partner in the treating team(13) and other studies also concurred these needs(14,15).

PSYCHIATRIC MORBIDITY AND QUALITY OF LIFE IN MYOCARDIAL INFARCTION PATIENTS:

Ischemic heart disease is the main cause of death in the western countries (22), because of this higher prevalence of disease, more research is focused in this area for prevention, reduction in morbidity and mortality(22).

Pain, coping in changes of life, fear of future can challenge these individuals, which may precipitate psychological morbidity and functioning levels (22). Many studies have shown that depression in the cardiac events may worsen the outcome(22). Even though stress and depression decreases the outcome in myocardial infarction(MI), the role of causation is less clear.

Stress and related factors have direct relationship with the cardiac events like myocardial infarction and its outcome and these factors may become important hindrance to the recovery process. It is been postulated that theory of cortisol reactivity to stressful events, by the hypothalamus-pituitary-adrenal axis over activity may lead to development of depression(20) and depression also can induce adrenal hyperactivity, bradycardia, ventricular dysfunction and ischemia(20).

Depression may increase the incidence other types of ischemic heart disease(IHD) e.g . angina(20). The life events may correlate with depression and development of IHD, similarly lower socio economic status also lead to depression.

The clinical features of myocardial infarction may resemble anxiety at presentation but more pronounced and established anxiety features are usually present after an ischemic event. Anxiety may cause increased breathing sometimes induces arrhythmias and death also (20).

Features of depression is three times higher in cardiac diseases than in general population(25). Even though there is symptoms of decreased appetite, sleep disturbances, anergia, decreased concentration may present in cardiac patients, the presence of depressed mood is not due to the complication of cardiac events.

Carney et al have found 16-22% of patients had major depressive disorder after MI and about 45% of them having some depressive features (20). In an another study, there were no deaths following 6 months of MI in those who were not having associated depression(20), but after a period of 12 months there was a 3 fold increase in depression in the same patients.

The psychiatric syndromes after cardiac events like myocardial infarction is not recognized routinely, and these symptoms may present for years together will definitely have negative effect on the outcome and quality of life (25). With the available effective treatment for psychiatric syndromes, studies have shown an improved outcome in these patients (25).

Barth et al 2004 & Van Mella et al 2004, reported depression increases death rate to two fold after myocardial infarction. Dicken's et al (2006), showed management of depression and anxiety improves the quality of life after MI. It has been stated that, depression may increase1.6 times more risk for development of MI, even if there is well controlled direct risk factors. Blumenthal et al 2003, Porton et al 2003, Dickens et al 2004a also concluded the presence of depression after MI.

Rumsfeld & Ho 2005, have confirmed that more attention is given to depression after MI in recent decades and with latest improvement in treatment, the survival of the patients increased well.

Studies have shown treating depression may reduce angina pain and further recurrences(22) and this may necessary to intervene at the earliest in most of the cardiac events like Myocardial Infarction or angina , during their coping of new life styles. Depression and anxiety present in Myocardial Infarction predicted the quality of life after 1 year period in a study(23). Other studies also confirmed these findings and also reported about the compliance and the physical activity also(24). Some studies have documented that in long term the depression and anxiety may decrease, but there is poor resolution (24).

CARE GIVER BURDEN IN MYOCARDIAL INFARCTION PATIENTS:

There are studies done on the care giving in chronic medical illness like dementia(28). It has been evaluated that the care giver burden is associated with level of depression in care givers(28). The care giver burden is well related with physical activity and functioning level of patients and it further causes decline in health which affects the physical capacity of the care giver.

Good support from family care giver will improve the outcome in patients with ischemic heart disease (susan J. Pressier et al). Poor care by spouse shown to have poor outcome (Vinson JM et al,28). Vinson and colleagues shown in the study that ,21% of patients got readmitted into the hospital because of poor social support(28), and single or unmarried patients were 2.1 times increased risk for readmission(Chin MH et al). Nevertheless the support by the care giver are coming at the cost of some difficulty to the care giver.

In care givers of MI patients, depression is presenting as a common distress due to the supporting role in these patients (Mortenson, Jacobson, Scott LD). In MI care givers it is shown that 23% to 47% of spouse as care givers had considerable depressive features (28) and 45% of other family supporters had depressive features (Scott LD).

AIMS AND OBJECTIVES

AIM OF THE STUDY:

To assess the psychiatric morbidity, quality of life and care giver burden in patients with malignancy and to compare the same with patients of post myocardial infarction

OBJECTIVES:

1. To study the psychiatric morbidity, quality of life and care giver burden in cancer patients.

2. To study the psychiatric morbidity, quality of life and care giver burden in post myocardial infarction patients.

3. To compare the socio demographic variables between cancer patients and post myocardial infarction patients.

4. To compare the psychiatric morbidity, quality of life and care giver burden between cancer patients and post myocardial infarction patients.

5. To study the relationship between the duration of illness and the psychiatric morbidity in cancer patients and myocardial infarction patients.

6. To study the relationship between the socio demographic variables and the care giver burden in cancer patients and myocardial infarction patients.

HYPOTHESIS

1. Depression and anxiety are more common in cancer patients compared to other medical disorders like myocardial infarction.

2. Depression and anxiety have direct relationship to the quality of life in cancer patients.

3. Quality of life is declining after diagnosis and long term treatment in cancer patients.

4. Lower socio economic status in cancer patients causes more depression compared to myocardial infarction patients.

5. Psychiatric morbidity causes decline in quality of life in cancer patients.

6. Increased duration of illness causes more psychiatric morbidity in cancer patients.

7. Site of cancer is directly related to the psychiatric morbidity in cancer patients.

8. Anxiety is the predominant feature in the immediate post myocardial infarction status.

9. Care giver burden is more common in care givers of cancer patients compared to myocardial infarction patients.

10. Spouse as care giver develops more care giver burden in cancer patients compared to other medical disorders like myocardial infarction.

MATERIALS AND METHODS:

SAMPLE OF THE STUDY:

The sample consist of patients with cancer and patients with post myocardial infarction status. The following inclusion and exclusion were used

INCLUSION CRITERIA:

1. Patients diagnosed to have cancer.
2. Post MI patients
3. Between the age of 30-60

EXCLUSION CRITERIA:

1. Patients less than 30 years and more than 60 years
2. Previous history of psychiatric illness.
3. Substance abuse
4. Any chronic major illnesses other than cancer

INSTRUMENTS USED:

1. Semi-structured proforma used, which included the socio demographic details and clinical information.

Socio demographic details included the followings:

- Age
- Sex
- Occupation
- Address
- Education
- Socio economic status
- Family type
- Family status
- Care giver

Clinical information included the followings

- Physical activity
- Referral from
- Smoking/tobacco use
- Diabetes
- Hypertension

- Diagnosis
- Cancer site
- Cancer stage
- Previous surgery for cancer
- Chemotherapy
- Radiotherapy
- Cardiac diagnosis
- Cardiac procedure plan
- Duration since diagnosis

The scales used were :

1 .Hospital Anxiety and Depression Scale

2 .WHO QOL-BREF Scale

3.Burden Assessment Schedule

HOSPITAL ANXIETY AND DEPRESSION SCALE (HADS):

Zigmond and snaith first developed this scale in 1983. This scale mainly used to measure depression and anxiety in the general hospital settings. It was found that HADS scale was very easy to administer in patients by their treating physicians to screen the symptoms of depression and anxiety. World wide this scale has been translated in many languages and found to have good reliability and validity while administering to the medical patients. The use of this scale is well established in general population, general hospital setting, cancer institute and in patients with HIV.

This scale contains 14 items of which 7 items measures anxiety and other 7 items measures depression scoring from 0-3. The final grading done after complete score for depression and anxiety separately.

A score of 0-7 is considered normal

A score of 8-11 is considered as borderline abnormal

A score of 12 and above is considered as abnormal

This scale used in the study because of its usefulness in measuring depression and anxiety in patients attending the general hospital of cancer and myocardial infarction who were enrolled in this study.

WHO QOL-BREF SCALE:

World health organization developed a scale WHO QOL-100 to assess the quality of life which could be used to monitor the morbidity and mortality includes the impairment and functional decline caused by the disease. The WHO QOL 100 is containing 100 items specifying questions related to 24 facets in life, each facet contains 4 questions comprising all aspects of life. WHO QOL BREF – is a shorter version of WHO QOL -100. This scale developed by making one common question from each facet in WHO QOL-100 so it measures all the related questions present in WHO QOL-100.

The quality of life is measured by administering this scale mainly on patients with chronic disabling illness who may be in need of palliative care than curative management. This scale contains 24 questions plus 2 general questions

It has 4 domains to measure

1. Physical health
2. Psychological
3. Social relationships
4. Environmental

WHO QOL BREF- gives a profile of quality of life and the each domain score indicates the individual view of quality of life. The scales score in each domain is in the positive direction. Each domain score is calculated separately to reach a domain score from 0-100.

This scale used in the study as it contains 4 domains which includes all aspects of life in an individual with disabling illness to measure the quality of life.

BURDEN ASSESSMENT SCHEDULE (BAS):

The burden assessment schedule was developed by schizophrenia research foundation(SCARF) and Regional Office for South East Asia of WHO to assess the care giver burden in the families. In families with chronic mentally ill persons(Thara et al,1995) the scale measure the level of burden thereby to help the care giver to reduce their burden and to facilitate the treatment outcome in chronic mentally ill person. An initial study done by Platt who critically evaluated many instrument to quantify the care giver burden. He made an attempt to differentiate there objective and subjective burden. Shrene in 1990, reviewed 12 burden scales and did not deffer much from Platt suggestion scale. Pai and Kapur in 1981 developed first care giver instrument followed by Thara et al who developed this burden assessment schedule

This schedule examines the care giver burden by the following factors

1. Impact on well being

2.Iimpact on marital relationships(can be measure only if the spouse is the care giver

3. Appreciation of caring

4. Impact on relationships with others

5. Perceived severity of the diseases

(complete schedule is given in the annexure)

It was suggested that by using this scale evaluation of the supporting measure to the care giver and burden is possible. This also used to identify the correlation between the psychopathology and the burden. If the burden to the care giver is assessed well the need to intervene by the health professional in reducing this burden would be possible. This may be helpful to the patients and the care givers further it was mentioned that this scale will also be useful to measure the burden in care givers of other chronic illness patients as this scale developed in South East Asia it is

useful to measure in Indian settings so this scale was used in the study to measure the care giver burden.

STUDY PLACE:

This study was done at Govt Stanley Medical College & Hospital Chennai

STUDY PERIOD:

This study was conducted for 6 month duration from June 2012-november2012.

PROCEDURE:

Consecutively attending cancer patients at Dept of Radiotherapy referred from OPD and wards of medical and surgical departments and In Patients of post myocardial infarction status were recruited for this study after applying inclusion and exclusion criteria. Cancer patients about 80 as case group and 80 patients enrolled in the control group. Patients were examined on the regular basis and after obtaining consent they were asked for socio demographic details and then the scales were administered .

During the interview they were communicated in their local language for their better understanding and answering.

This study was conducted after approval from the Ethical Committee of the Institute.

STATISTICAL ANALYSIS:

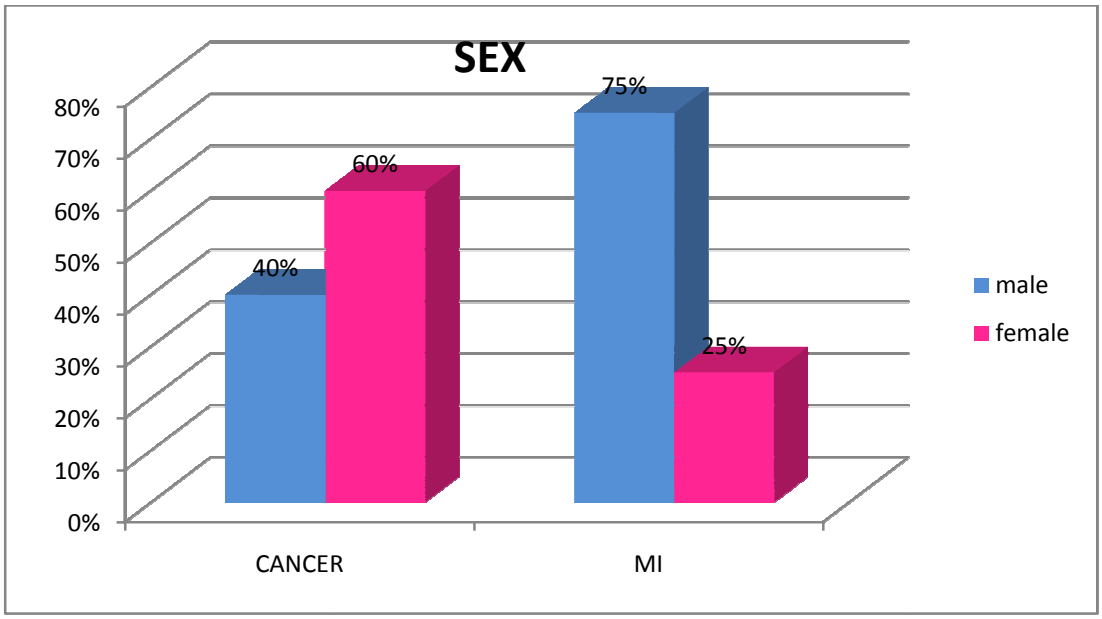
All the data collected were analysed by using the , statistical package for social sciences(SPSS). Data distributions were analysed using descriptive statistics as means, frequencies and standard deviations. T test was used to find out relationship between variables and correlation analysis was done to find out the significant association.

RESULTS

TABLE-1

SEX DISTRIBUTION OF THE SAMPLE

Sex	**case**		**control**		**Total**	
	N	**%**	**N**	**%**	**N**	**%**
Male	32	40.00	60	75.00	92	57.50
Female	48	60.00	20	25.00	68	42.50
Total	80	100	80	100	160	100
Chi-square value	**20.00**					
Df	**1**					
p value	**0.000 (Significant)**					

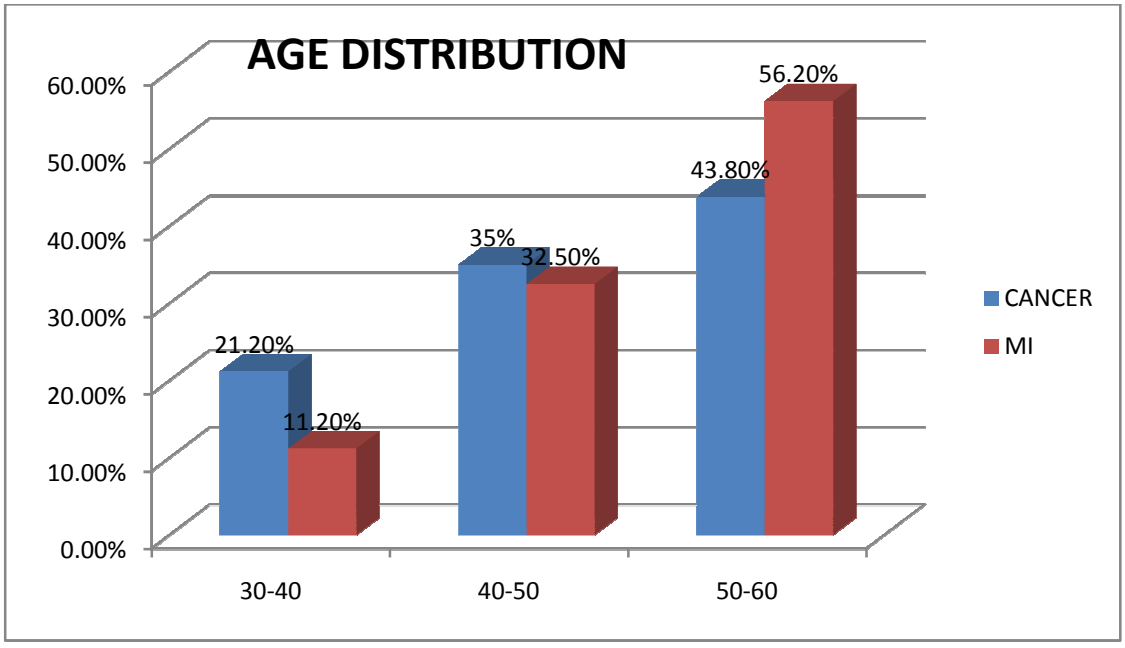


In cases group about 60% are female patients and 40% are males. In control group 75% are male patients and 25% are female patients.

TABLE-2

AGE DISTRIBUTION

Age Group	case		control		Total	
	N	%	N	%	N	%
30 - 40	17	21.20	9	11.20	26	16.20
40 - 50	28	35.00	26	32.50	54	33.80
50 - 60	35	43.80	45	56.20	80	50.00
Total	80	100	80	100	160	100



MEAN AGE

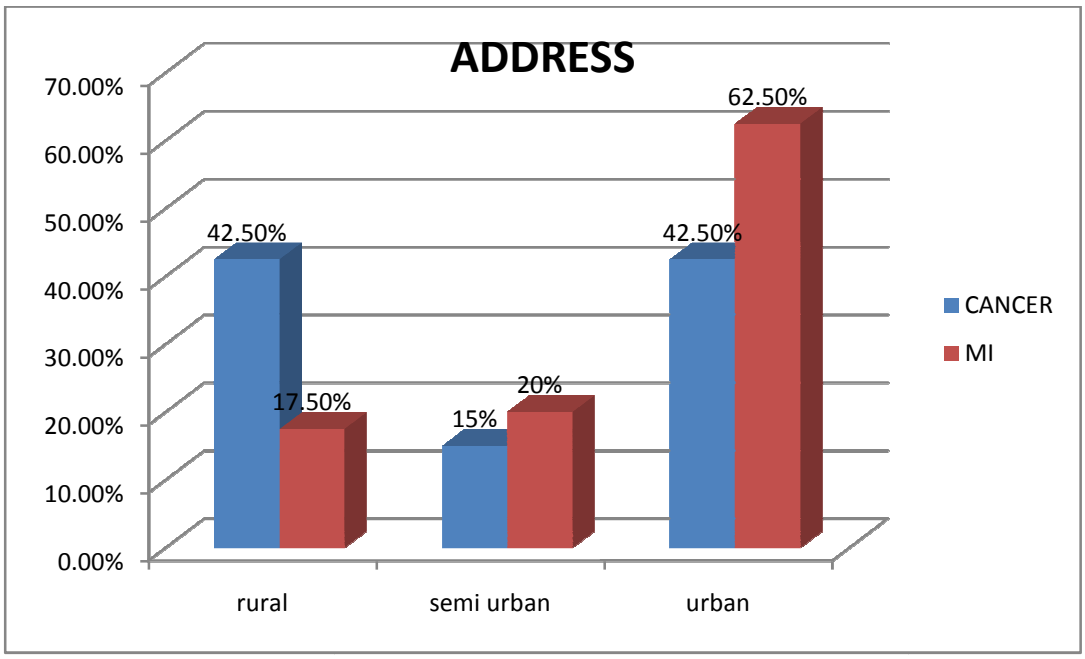
	Cancer pts	**Myocardial infarction pts**
Mean	48.56	51.18
Sd	9.49	7.62
t-Value	**1.92**	
Df	**158**	
p-value	**0.06 (Not Significant)**	

Most of the cases group belong to rural locality about 42.5% compared to 17.5% in control group. Most of the patients in control group belong to urban locality about 62.5% compared to 42.5% in cases group. There is significant difference found with p value of 0.003

TABLE-3

ADDRESS

Address	**case**		**control**	
	N	**%**	**N**	**%**
Rural	34	42.50	14	17.50
Semi Urban	12	15.00	16	20.00
Urban	34	42.50	50	62.50
Total	**80**	**100**	**80**	**100**
Chisquare	**11.95**			
Df	**2**			
p-value	**0.003 (Significant)**			

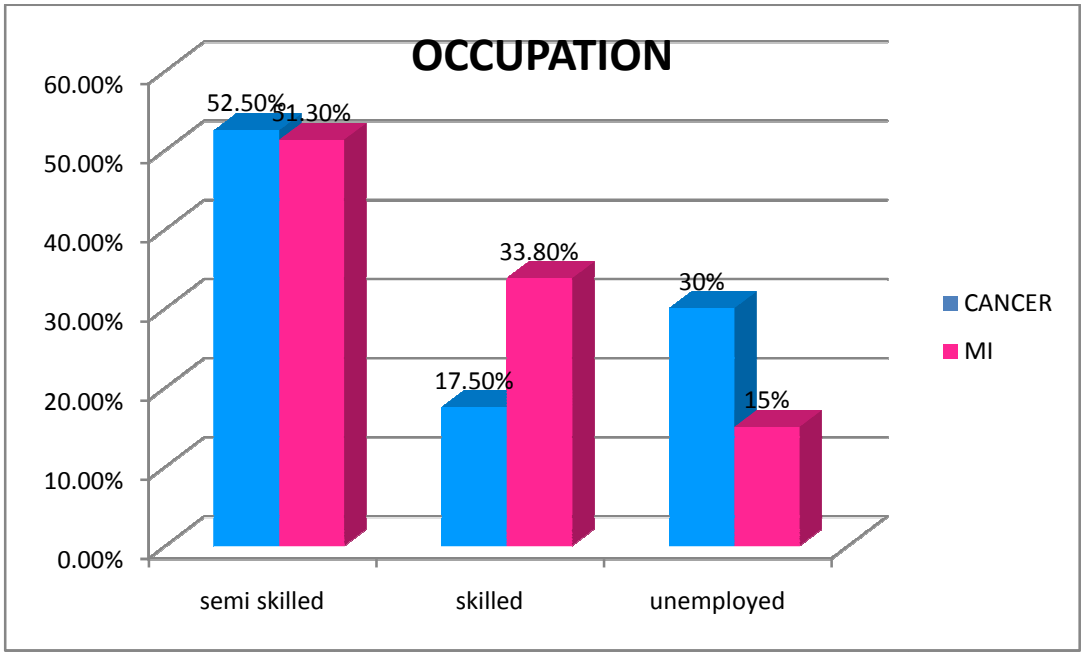


Most of the cases group belong to rural locality about 42.5% compared to 17.5% in control group. Most of the patients in control group belong to urban locality about 62.5% compared to 42.5% in cases group. There is significant difference found with p value of 0.003.

TABLE- 4

OCCUPATION

	Group				**Chisquaretest**
Occupation	**Case**		**Control**		
	N	%	N	%	
Semi Skilled	42	52.2	41	51.3	χ^2=8.134
Skilled	14	17.5	27	33.8	P=0.017
Unemployed	24	30	12	15	Significant

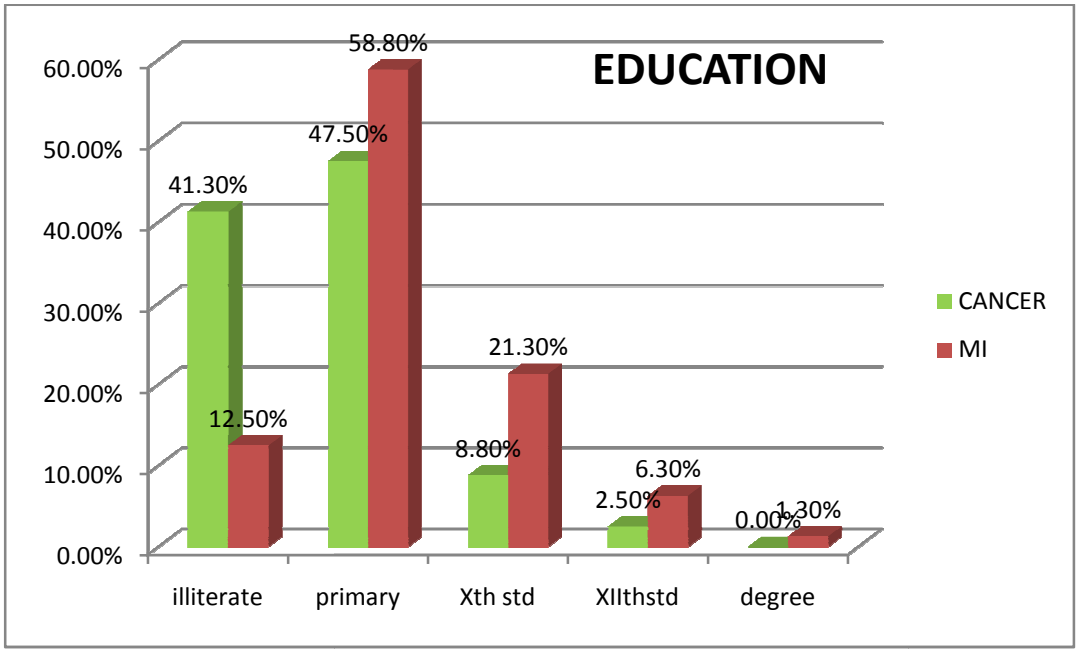


In cases about 52.5% of patients belong to semiskilled workers and in control group 51.3% are semiskilled workers. There is 17.5% of skilled workers in cases group and 33.8% are skilled workers in control group. There are about 30% of unemployed patients in cases group compared to 15% in control group. There is significant difference between cases and control group with a p value of 0.017.

TABLE-5

EDUCATION

	Group				Chisquaretest
Education	**Case**		**Control**		
	N	%	N	%	
Illiterate	33	41.3	10	12.5	χ^2=19.708
Primary	38	47.5	47	58.8	P=0.001
Xth Std	7	8.8	17	21.3	Significant
XIIth Std	2	2.5	5	6.3	
Degree	-	-	1	1.3	

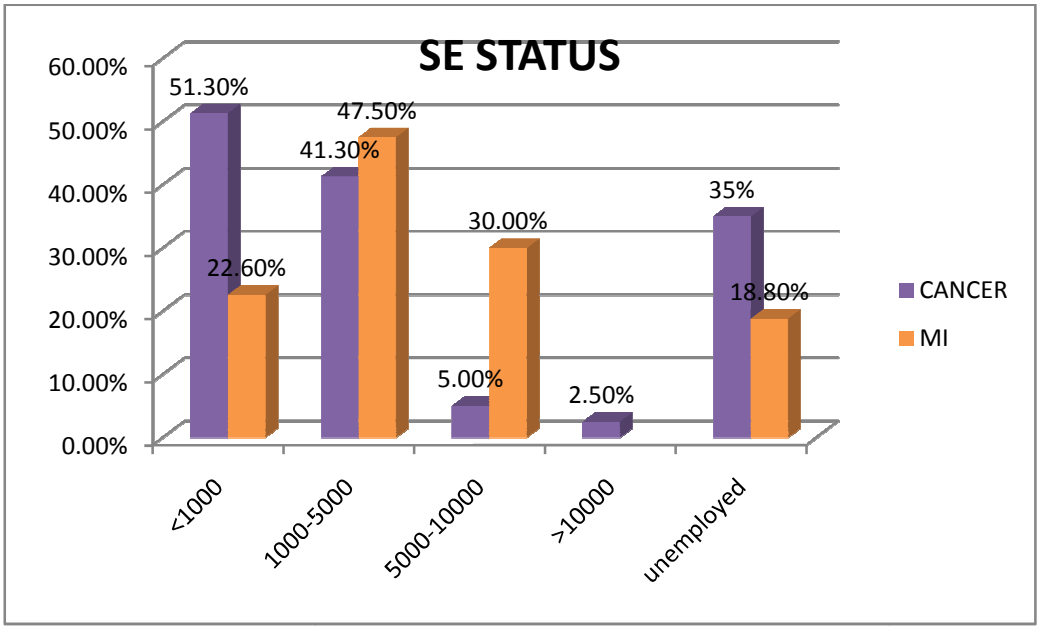


Education wise , 41.3% of patients are illiterate in cases group and about 12.5% of patients are illiterate in control group. In cases group about 47.5% belong to primary education level, compared to 58.8% in control group. Education wise, significant difference between cases and control group seen with p value of 0.001.

TABLE-6

SOCIO ECONOMIC STATUS

	Group				**Chisquaretest**
Socio Economic Status	**Case**		**Control**		
	N	%	N	%	
<1000	41	51.3	18	22.6	χ^2=26.818
1000-5000	33	41.3	38	47.5	P=0.000
5000-10000	4	5.0	24	30.0	Significant
>10000	2	2.5	-	-	

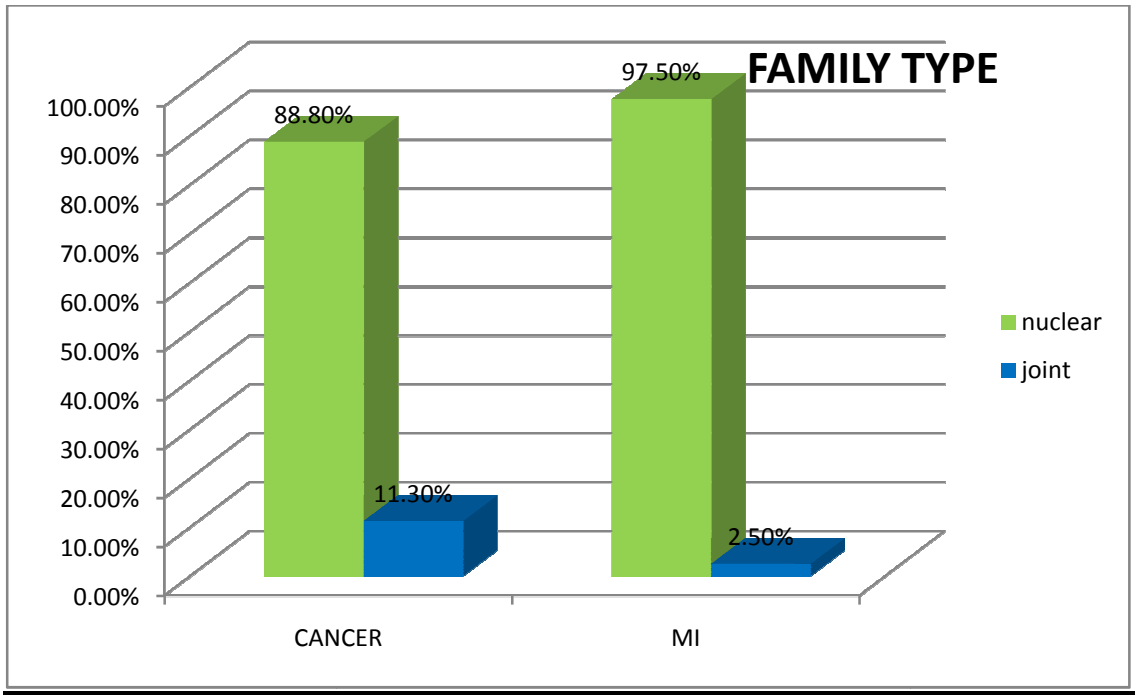


In cases group about 51.3% of people belong to <1000 rupees earning per month Compared to 22.6% in control group. In cases group 41.3% of people belong to 1000-5000 rupees earning per month compared to 47.5% in control group. In control group about 30% of patients belong to 5000-10000 rupees earning per month compared to cases group. There is significant difference between the two groups with p value of 0.000

TABLE-7

FAMILY TYPE

	Group				**Chi-squaretest**
Family Type	**Case**		**Control**		
	N	%	N	%	
Nuclear	71	88.8	78	97.5	χ^2=4.783 P=0.029
Joint	9	11.3	2	2.5	Significant

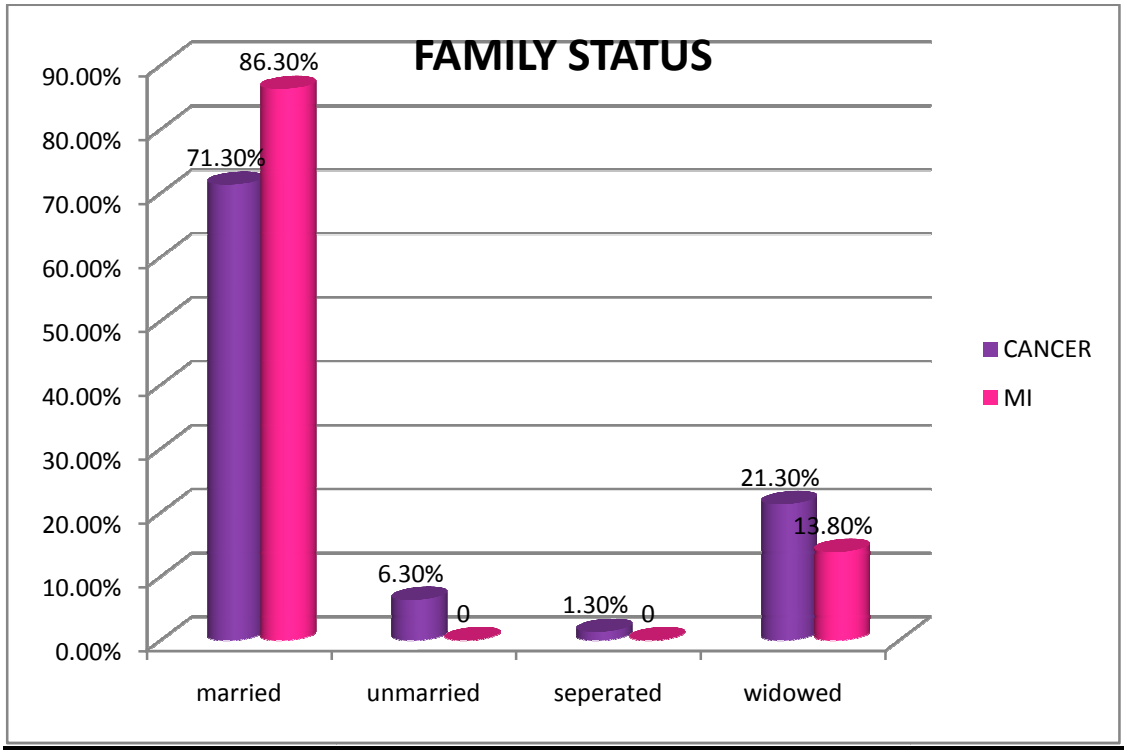


About 88.8% nuclear family in case group compared to 97.5% in control group. There are about 11.3% joint family in case group compared to 2.5% in control group

TABLE-8

FAMILY STATUS

	Group				**Chisquaretest**
Family Status	**Case**		**Control**		
	N	%	N	%	
Married	57	71.3	69	86.3	χ^2=8.429
Unmarried	5	6.3	0	0	P=0.038
Separated	1	1.3	0	0	Significant
Widowed	17	21.3	11	13.8	

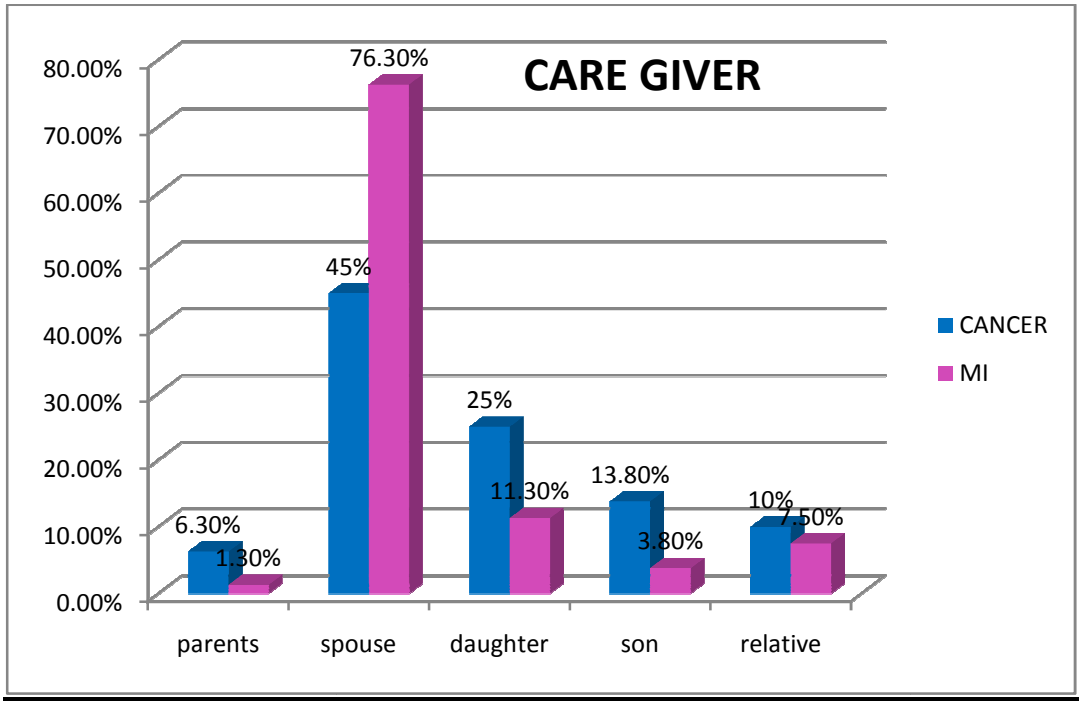


71.3% in case group are married as compared to 86.3% in control group. Unmarried and separated from spouse in case group were 6.3% and 1.3% respectively. Widowed percentage was 21.3 in case and 13.8% in control group.

TABLE : 9

CARE GIVER

	Group				**Chisquaretest**
Care Giver	**Case**		**Control**		
	N	%	N	%	
Patients	5	6.3	1	1.3	χ^2=18.140
Spouse	36	45	61	76.3	P=0.001
Daughter	20	25	9	11.3	Significant
Son	11	13.8	3	3.8	
Relative	8	10	6	7.5	

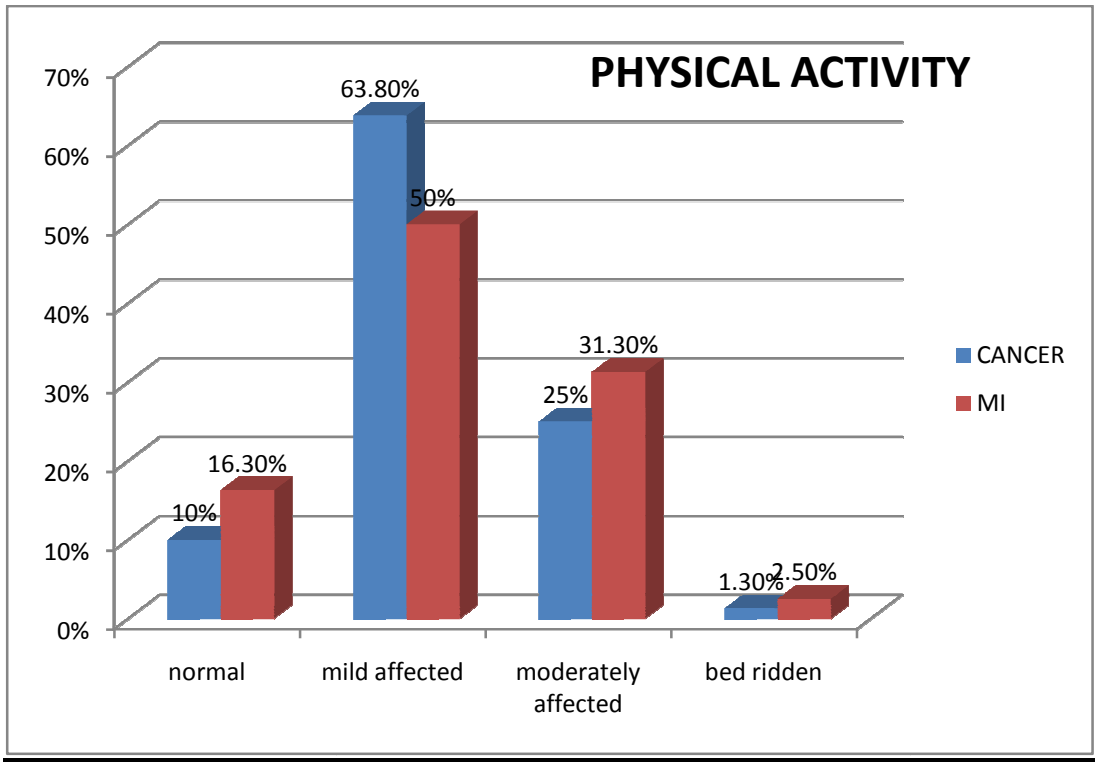


Spouse being the care giver in 45 % of case group compared to 76.3% in the control group. Daughter being the care giver for 25% of cases and 11.3% of control subjects was noted. This female predominance as the care giver in both the group was statistically significant.

TABLE-10

PHYSICAL ACTIVITY

	Group				**Chisquaretest**
Physical Activity	**Case**		**Control**		
	N	%	N	%	
Normal	8	10	13	16.3	χ^2=3.409
Mild affected	51	63.8	40	50	P=0.333
Moderately affected	20	25	25	31.3	Not Significant
Bedridden	1	1.3	2	2.5	

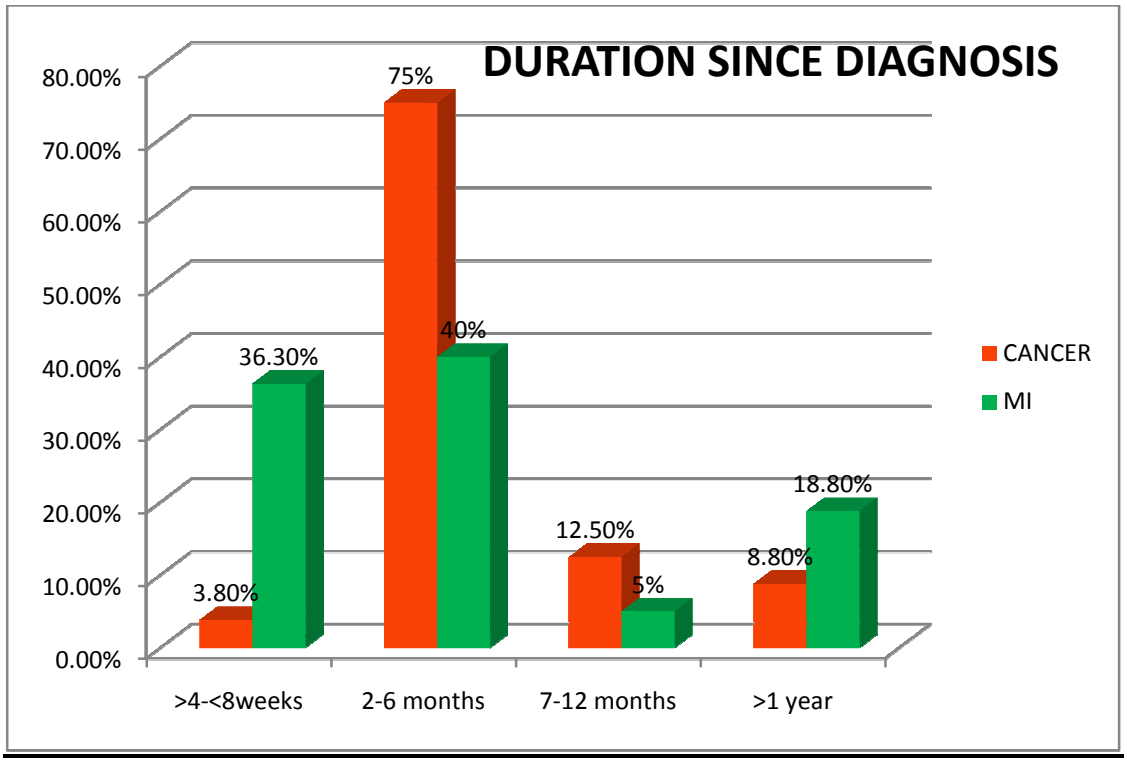


Physical activity with mild affected category were 63.8% in case compared to 50% in control. Moderately affected was 25% in cases and 31.3% in control. 1.3% in case and 2.5% were bed ridden.

TABLE-11

DURATION SINCE DIAGNOSIS

	Group				**Chisquaretest**
Duration of Diagnosis	**Case**		**Control**		
	N	%	N	%	
>4 weeks -<8 weeks	3	3.8	29	36.3	χ^2=35.127
2-6 months	60	75.0	32	40	P=0.000
7-12 months	10	12.5	4	5	Significant
>1 year	7	8.8	15	18.8	

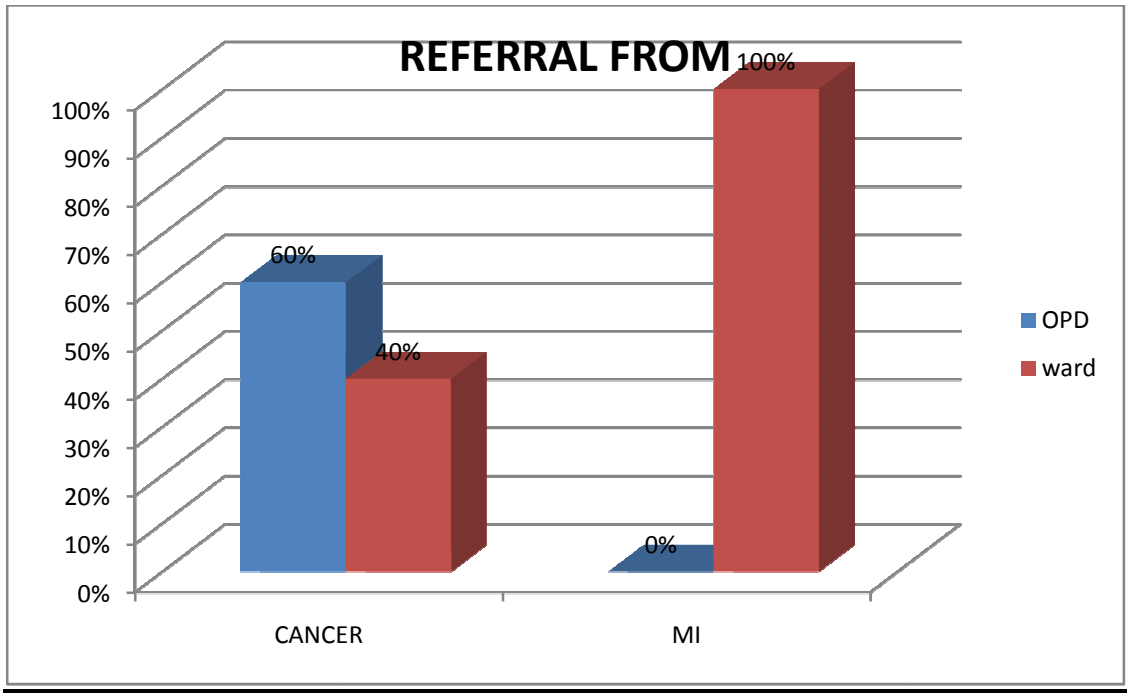


75% of cases and 40% of the control subjects were in their 2nd to 6th month after diagnosis.

TABLE-12

REFERRAL FROM

	Group				**Chisquaretest**
Referral From	**Case**		**Control**		
	N	%	N	%	
OPD	48	60	0	0	χ^2=68.571 P=0.000
WARD	32	40	80	100	Significant

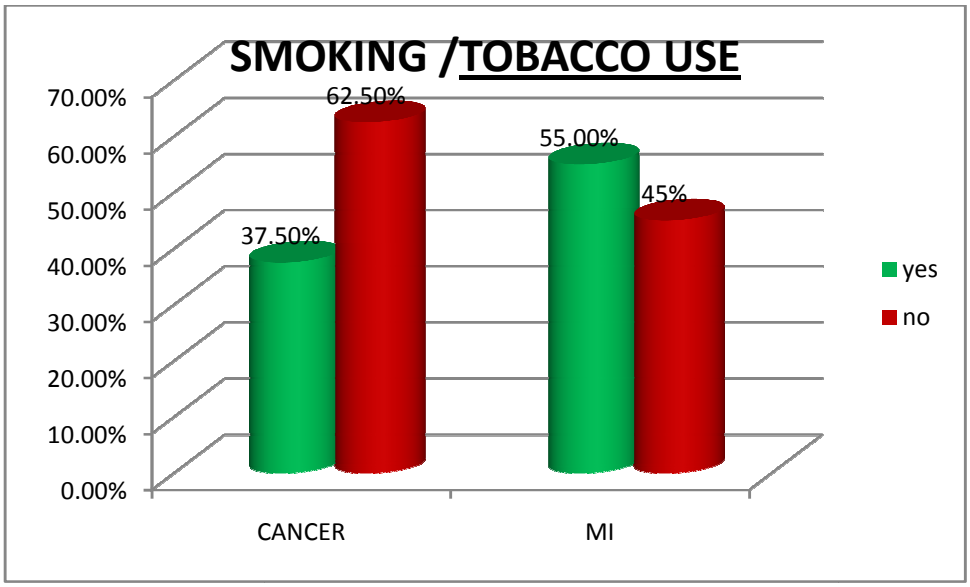


60% of patients are referred from OPD and 40% from ward in cases group whereas all patients in control group were in-patients.

TABLE-13

SMOKING/TOBACCO USE

	Group				**Chisquaretest**
Smoking/Tobacco use	**Case**		**Control**		
	N	%	N	%	
Yes	30	37.5	44	55.0	χ^2=4.928 P=0.026
No	50	62.5	36	45.0	Significant



There is a significant difference(p-0.026) between the two groups with respective to smoking/tobacco use and there was 37.5% use in cases group and 55% in control group.

TABLE-14

DM

	Group				Chisquaretest
DM	**Case**		**Control**		
	N	%	N	%	
Yes	10	12.5	24	30	$\square^2$=7.320
No	70	87.5	56	70	P=0.007 Significant

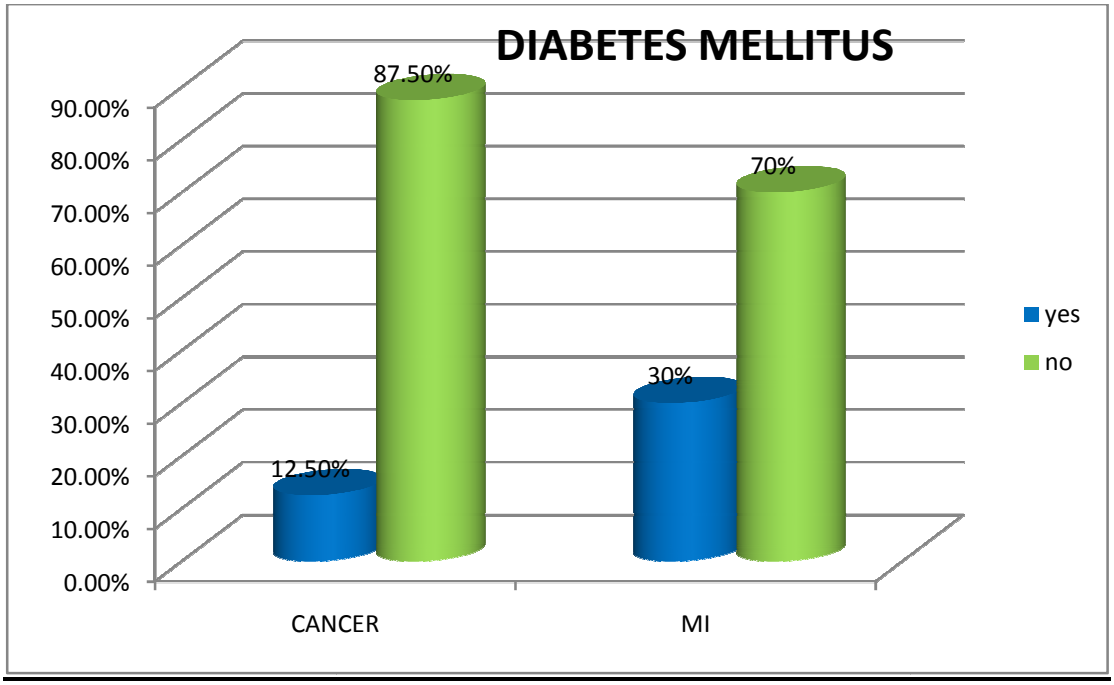


TABLE-15

HTN

	Group				Chisquaretest
HTN	**Case**		**Control**		
	N	%	N	%	
Yes	7	8.8	27	33.8	χ^2=14.939 P=0.000
No	73	91.3	53	66.3	Significant

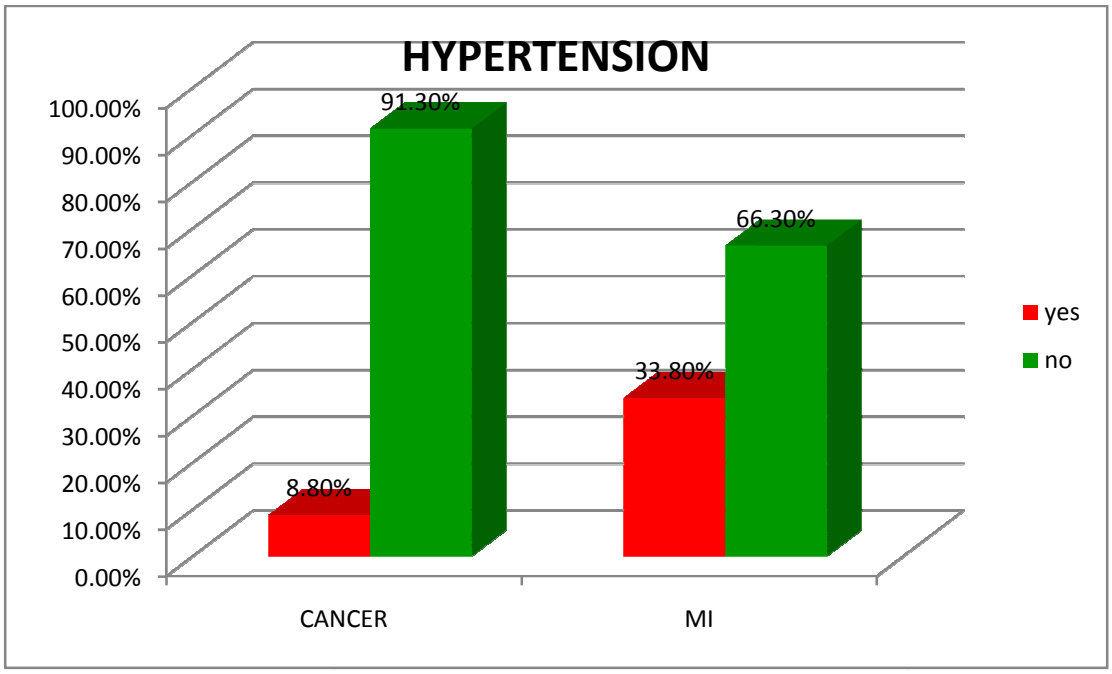


TABLE-16

HADS – SCALE – ANXIETY

HADS – Anxiety	Group				Chisquaretest
	Case		Control		
	N	%	N	%	
Normal	9	11.3	40	50	$\chi^2 = 34.748$
Borderline Abnormal	33	41.3	29	36.3	P = 0.000
Abnormal	38	47.5	11	13.8	Significant

TABLE-17

HADS – SCALE – DEPRESSION

HADS – Depression	Group				Chisquaretest
	Case		Control		
	N	%	N	%	
Normal	3	3.8	16	20	$\chi^2 = 53.044$
Borderline Abnormal	6	7.5	38	47.5	P = 0.000
Abnormal	71	88.8	26	32.5	Significant

TABLE-18

(GROUP-I)

HADS A WITH QOL _D1

HADS_A	Number	Mean ± Sd	Df=2,77 F-value	p-value
Normal	9	51.84 ± 4.71	4.50	0.01
Borderline Abnormal	33	55.29 ± 8.22		
Abnormal	38	50.93 ± 4.07		
Total	80	52.84 ± 6.46		
HADS A WITH QOL _Domain2				
HADS_A	Number	Mean ± Sd	Df=2,77 F-value	p-value
Normal	9	56.11 ± 6.50	6.00	0.004
Borderline Abnormal	33	56.51 ± 7.65		
Abnormal	38	50.50 ± 7.88		
Total	80	53.63 ± 6.12		

HADS A WITH QOL _Domain3				
HADS_A	**Number**	**Mean ± Sd**	**Df=2,77 F-value**	**p-value**
Normal	**9**	**55.56 ± 9.08**	**3.01**	**0.06**
Borderline Abnormal	**33**	**53.65 ± 17.30**		
Abnormal	**38**	**45.92 ± 13.77**		
Total	**80**	**50.19 ± 15.34**		
HADS A WITH QOL _Domain4				
HADS_A	**Number**	**Mean ± Sd**	**Df=2,77 F-value**	**p-value**
Normal	**9**	**65.21 ± 10.60**	**9.26**	**0.000**
Borderline Abnormal	**33**	**62.35 ± 09.51**		
Abnormal	**38**	**53.07 ± 11.12**		
Total	**80**	**58.26 ± 11.46**		

HADS A WITH QOL _TOTAL

HADS_A	Number	Mean ± Sd	Df=2,77 F-value	p-value
Normal	9	56.97 ± 6.02	8.84	0.000
Borderline Abnormal	33	56.91 ± 7.92		
Abnormal	38	50.19 ± 6.68		
Total	80	53.73 ± 7.84		

TABLE-19

GROUP-I

HADS D WITH QOL _D1				
HADS_D	**Number**	**Mean ± Sd**	**Df=2,77 F-value**	**p-value**
Normal	3	**55.55 ± 2.41**		
Borderline Abnormal	6	**55.54 ± 9.01**	**0.89**	**0.42***
Abnormal	71	**52.49 ± 6.34**		
Total	**80**	**52.83 ± 6.47**		
HADS D WITH QOL _Domain2				
HADS_D	**Number**	**Mean ± Sd**	**Df=2,77 F-value**	**p-value**
Normal	3	**61.67 ± 2.89**	**3.43**	**0.04**
Borderline Abnormal	6	**59.17 ± 5.84**		
Abnormal	71	**52.80 ± 8.10**		
Total	**80**	**53.61 ± 8.12**		

HADS D WITH QOL _Domain3				
HADS_D	**Number**	**Mean ± Sd**	**Df=2,77 F-value**	**p-value**
Normal	3	**66.67 ± 19.09**	**2.51**	**0.09***
Borderline Abnormal	6	**56.25 ± 17.23**		
Abnormal	71	**48.99 ± 14.76**		
Total	**80**	**50.19 ± 15.34**		
HADS D WITH QOL _Domain4				
HADS_D	**Number**	**Mean ± Sd**	**Df=2,77 F-value**	**p-value**
Normal	3	**73.61 ± 2.41**	**6.67**	**0.002**
Borderline Abnormal	6	**68.75 ± 7.34**		
Abnormal	71	**56.72 ± 11.06**		
Total	**80**	**58.26 ± 11.46**		

HADS D WITH QOL _TOTAL

HADS_D	Number	Mean ± Sd	Df=2,77 F-value	p-value
Normal	3	63.71 ± 6.33	**5.35**	**0.01**
Borderline Abnormal	6	59.92 ± 7.38		
Abnormal	71	52.78 ± 7.48		
Total	**80**	53.73 ± 2.84		

TABLE-20

(GROUP-II)

HADS A WITH QOL _D1				
HADS_A	**Number**	**Mean ± Sd**	**Df=2,77 F-value**	**p-value**
Normal	**40**	**59.39 ± 6.47**	**2.96**	**0.06***
Borderline Abnormal	**29**	**56.49 ± 7.69**		
Abnormal	**11**	**54.35 ± 5.99**		
Total	**80**	**57.64 ± 7.05**		
HADS A WITH QOL _Domain2				
HADS_A	**Number**	**Mean ± Sd**	**Df=2,77 F-value**	**p-value**
Normal	**40**	**62.38 ± 4.53**	**6.94**	**0.002**
Borderline Abnormal	**29**	**60.78 ± 5.78**		
Abnormal	**11**	**55.11 ± 8.88**		
Total	**80**	**60.80 ± 6.14**		

HADS A WITH QOL _Domain3				
HADS_A	**Number**	**Mean ± Sd**	**Df=2,77 F-value**	**p-value**
Normal	**40**	**63.13 ± 13.26**	**4.07**	**0.02**
Borderline Abnormal	**29**	**65.94 ± 13.31**		
Abnormal	**11**	**52.27 ± 15.63**		
Total	**80**	**62.66 ± 14.13**		
HADS A WITH QOL _Domain4				
HADS_A	**Number**	**Mean ± Sd**	**Df=2,77 F-value**	**p-value**
Normal	**40**	**73.80 ± 5.74**	**14.20**	**0.000**
Borderline Abnormal	**29**	**73.58 ± 6.30**		
Abnormal	**11**	**61.95 ± 10.73**		
Total	**80**	**72.08 ± 7.84**		

HADS A WITH QOL _TOTAL

HADS_A	Number	Mean ± Sd	Df=2,77 F-value	p-value
Normal	40	64.57 ± 5.44	9.13	0.000
Borderline Abnormal	29	64.02 ± 6.19		
Abnormal	11	55.96 ± 7.78		
Total	80	63.19 ± 6.66		

TABLE-22

GROUP-II

HADS D WITH QOL _D1				
HADS_D	**Number**	**Mean ± Sd**	**Df=2,77 F-value**	**p-value**
Normal	**16**	**60.81 ± 4.47**	**3.51**	**0.04**
Borderline Abnormal	**38**	**58.01 ± 8.32**		
Abnormal	**26**	**55.15 ± 5.43**		
Total	**80**	**57.64 ± 7.05**		
HADS D WITH QOL _Domain2				
HADS_D	**Number**	**Mean ± Sd**	**Df=2,77 F-value**	**p-value**
Normal	**16**	**61.02 ± 4.81**	**1.83**	**0.17***
Borderline Abnormal	**38**	**61.94 ± 5.40**		
Abnormal	**26**	**58.99 ± 7.53**		
Total	**80**	**60.80 ± 6.14**		

HADS D WITH QOL _Domain3				
HADS_D	**Number**	**Mean ± Sd**	**Df=2,77 F-value**	**p-value**
Normal	**16**	**66.41 ± 13.48**	**0.99**	**0.38***
Borderline Abnormal	**38**	**62.83 ± 12.83**		
Abnormal	**26**	**60.10 ± 16.21**		
Total	**80**	**62.66 ± 14.13**		
HADS D WITH QOL _Domain4				
HADS_D	**Number**	**Mean ± Sd**	**Df=2,77 F-value**	**p-value**
Normal	**16**	**73.67 ± 3.33**	5.22	**0.01**
Borderline Abnormal	**38**	**74.07 ± 7.33**		
Abnormal	**26**	**68.21 ± 9.22**		
Total	**80**	**72.08 ± 7.84**		

HADS D WITH QOL _TOTAL

HADS_D	Number	Mean ± Sd	Df=2,77 F-value	p-value
Normal	16	65.45 ± 5.15	3.41	0.04
Borderline Abnormal	38	64.01 ± 6.24		
Abnormal	26	60.58 ± 7.43		
Total	80	63.19 ± 6.66		

TABLE-23

DOMAIN SCORES

	case **Mean ± sd**	**control** **Mean ± sd**	**t-value**	**(Df=158)** **p-value**
QOL Domain 1	52.83 ± 6.47	57.64 ± 7.05	**4.50**	**0.000**
QOL Domain 2	53.61 ± 8.12	60.80 ± 6.14	**6.31**	**0.000**
QOL Domain 3	50.19 ± 15.34	62.66 ± 14.13	**5.34**	**0.000**
QOL Domain 4	58.26 ± 11.46	72.08 ± 7.84	**8.90**	**0.000**
QOL TOTAL	53.73 ± 7.84	63.19 ± 6.66	**8.22**	**0.000**
CG Burden Score	38.45 ± 4.94	29.09 ± 4.70	**12.28**	**0.000**

Table-24

SIGNIFICANT CHI SQUARE VALUES AMONG VARIABLES

CASES				
VARIABLE 1	**VARIABLE 2**	**CHI SQUARE**	**DF**	**P VALUE**
SES	CG SCORE	162.534	120	0.006
FAMILY TYPE	QOL-1	28.510	12	0.005
FAMILY TYPE	QOL-4	22.868	13	0.043
FAMILY TYPE	BPRS			0.000
FAMILY TYPE	QOL-3	43.24	24	0.009
CAREGIVER	QOL-1	66.627	48	0.043
PHYSICAL ACTIVITY	HAD-A	19.527	6	0.003
PHYSICAL ACTIVITY	HAD-D	42.481	6	0.000
REFERRAL FROM	QOL-1	24.998	12	0.015
CA SIZE	HAD-D	31.70	12	0.002
CA SIZE	QOL-1	101.9	72	0.012
SES	QOL-3	58.379	32	0.003

Table-24 contd..

SIGNIFICANT CHI SQUARE VALUES AMONG VARIABLES

CONTROLS				
VARIABLE 1	VARIABLE 2	CHI SQUARE	DF	P VALUE
SEX	HAD-D			0.041
SEX	QOL3	12.482	5	0.029
SEX	CG Score	37.659	25	0.05
EDUCATION	QOL-4	87.965	56	0.004
EDUCATION	CG SCORE	127.666	100	0.032
SES	QOL-3			0.007
FAMILY TYPE	CG SCORE	38.974	25	0.037
FAMILY TYPE	QOL-4	38.769	39	0.003
CAREGIVER	CG SCORE	162.732	100	0.000
PHYSICAL ACTIVITY	QOL-1	14.238	45	0.000
PHYSICAL ACTIVITY	CG SCORE	116.002	75	0.002

TABLE-25

LEVENE'S T TEST

Variables	Study Group	Mean	Standard Deviation	T Value	P Value
Age	Case	48.56	9.493	-1.920	0.057
	Control	51.18	7.617		
Duration	Case	2.26	0.670	1.404	0.162
	Control	2.06	1.083		
HADS_A	Case	2.36	0.680	6.569	0.000
	Control	1.64	0.716		
HADS_D	Case	2.85	0.403	7.637	0.000
	Control	2.13	0.718		
QOL_D1	Case	52.829	6.4669	-4.502	0.000
	Control	57.645	7.0501		
QOL_D2	Case	53.61	8.122	-6.311	0.000
	Control	60.80	6.141		
QOL_D3	Case	50.19	15.343	-5.344	0.000
	Control	62.66	14.133		
QOL_D4	Case	58.41	11.381	-8.789	0.000
	Control	72.08	7.843		
CG Score	Case	38.45	4.940	12.280	0.000
	Control	29.09	4.698		

TABLE-26

CORRELATION ANALYSIS

V2			CARE GIVER	QOL D1	QOL_ D2	QOL D3	QOL _D4	CG_ SCORE
QOL-D1	Cases	Pearson Correlation	-.143	1	**.330****	**.274***	**.387****	-.119
		Sig. (2-tailed)	.206		**.003**	**.014**	**.000**	.293
		N	80	80	80	80	79	80
	Controls	Pearson Correlation	-.063	1	**.294****	**.489****	**.292****	-.110
		Sig. (2-tailed)	.581		**.008**	**.000**	**.009**	.332
		N	80	80	80	80	80	80
QOL-D2	Cases	Pearson Correlation	-.088	**.330****	1	**.422****	**.583****	-.191
		Sig. (2-tailed)	.436	**.003**		**.000**	**.000**	.089
		N	80	80	80	80	79	80
	Controls	Pearson Correlation	.051	**.294****	1	**.329****	**.627****	-.123
		Sig. (2-tailed)	.655	**.008**		**.003**	**.000**	.277
		N	80	80	80	80	80	80

V2			CARE GIVER	QOL D1	QOL_ D2	QOL D3	QOL _D4	CG_ SCORE
QOL-D3	Cases	Pearson Correlation	-.192	**.274***	**.422****	1	**.464****	-.218
		Sig. (2-tailed)	.088	**.014**	**.000**		**.000**	.052
		N	80	80	80	80	79	80
	Controls	Pearson Correlation	**-.305****	**.489****	**.329****	1	**.406****	.059
		Sig. (2-tailed)	**.006**	**.000**	**.003**		**.000**	.601
		N	80	80	80	80	80	80
QOL-D4	Cases	Pearson Correlation	-.137	**.387****	**.583****	**.464****	1	**-.384****
		Sig. (2-tailed)	.227	**.000**	**.000**	**.000**		**.000**
		N	79	79	79	79	79	79
	Controls	Pearson Correlation	-.052	**.292****	**.627****	**.406****	1	-.156
		Sig. (2-tailed)	.646	**.009**	**.000**	**.000**		.166
		N	80	80	80	80	80	80
CG-SCORE	Cases	Pearson Correlation	.045	-.119	-.191	-.218	**-.384***	1
		Sig. (2-tailed)	.690	.293	.089	.052	**.000**	
		N	80	80	80	80	79	80
	Controls	Pearson Correlation	-.174	-.110	-.123	.059	-.156	1
		Sig. (2-tailed)	.122	.332	.277	.601	.166	
		N	80	80	80	80	80	80

DISCUSSION

This study focuses on the psychiatric morbidity, quality of life predictors and assessment of care giver burden among patients with malignancy and myocardial infarction to identify the causative factors and to foster better intervention strategies by modulating psychiatric issues and improving the quality of life of patients.

Prospective research in these two different population would assume greater significance with larger samples. Hence an attempt is made in this study, focusing on psychiatric morbidity, quality of life and care giver burden among cancer patients and myocardial infarction patients.

SOCIO DEMOGRAPHIC AND CLINICAL ASPECTS

In this study, most our patients belonging to female gender in cases group with carcinoma cervix and carcinoma breast. With the control group, most patients observed were males, the reason being increased preponderance to ischemic heart disease. This finding is in tandem with the observation of Sinha et al in 1970(83) which highlighted male

gender, smoking, Diabetes Mellitus, Hypertension as main etiological predispositions.

Age group between 50 and 60 was identified as a risk factor in both groups(cancer patients47.8%, myocardial infarction patients53.2%). Diabetes mellitus(33.8%) and Hypertension(30%) found in control group compared to cases, might be adding up to the causative factors in myocardial infarction patients.

Occupational drift was significantly prompts among cancer patients, due to restricted physical activity, increased pain perception and allied somatic interferences among malignancy population.

Because of the expected transition of the care giver, to the role of a main earning member to address financial constraints ,higher was the perception of the burden among the key relatives of cancer patients . This finding is in concordance with reports by Barbara Given et al in 2005(37)

Illiteracy was more in case group and most of them were from rural locality comparatively. Maximum number of patients in both group were from nuclear type of family. Joint family types were higher in cases compared to control group. In both the groups females were assuming the

care giver role may be because of maintain family systems in the Indian cultural background.

In our study, the mean duration of illness among the cases were high, in comparison to control group which concurred with findings in a study done by Jadoon et al in 2003 demonstrated that mean duration of illness among the patients with malignancies was about 6 months duration based on his work on the psychiatric morbidity on cancer patients . An understandable explanation could be such that, time could have been lapsed before the patients were able to detect the symptoms of the underlying illness & seek intervention.

PSYCHIATRIC MORBIDITY

Depression and anxiety are common in medical disorders and this has been established in many previous studies (3,38). Studies done by Brown et al(ca5)and Jadoon et al(ca3) conclude that psychiatric morbidity are common in cancer patients compared to other medical disorders. They reported about 56% of cancer patients had depression and anxiety compared to about 40% in medical diseases. Psychiatric disorders complicating medical disorder's outcome have also been well documented. (38).

Analysis of depression among the groups revealed that cancer patients had higher incidence of depression, when compared to patients with myocardial infarction. The possible reasons ,that can be ascribed are the effect of previous surgery and chemotherapy prior to this assessment, longer duration of illness in most of the individuals, the terminal nature of the illness, most of them being females ,more vulnerable for the mood changes (Lua Pei Lin et al in 2011) and deficits in the social support amongst them. This study differed from the studies of Jadoon et al in the view of greater incidence of depression, because of the reasons quoted above.

Further this could be understood on the basis that most of them belonging to the cases group were from rural areas, illiterate and were belonging to low socio economic status which are all the possible risk factors for psychiatric morbidity as evidenced in a study by Azeem MW et al, in 2009(3).

Patients from rural background were more anxious, when compared with those from urban community in reason of their poor socio economic status, literacy levels and fear of the impending consequences, owing to the illness.

Lua Pei Lin et al in 2011(2) emerged with the findings of the carcinomatous site being an instrumental factor for the higher prevalence of depression ,which was in agreement with the results of this study.

Our study has established the significance between psychiatric morbidity and quality of life in post myocardial infarction patients in accordance with the studies of Anne John Michel et al and J K Trivedi et al(19,20)

In this study, the control group had shown depressive features in about 32.5% patients which is well related to the previous results (19) & (20). Previous studies reported the prevalence of depressive symptoms of 10-45% in MI patients. The significant positive correlation between the depression score and caregiver burden can be explained by the fact that most of the patients in the control group were males who were the soul earning members of the family.

In this study, HADS anxiety in cancer group had higher scores than MI patients. We found, about 50% of MI patients scores well within the normal range of anxiety scores which concurs with (20) study by Colditz GA et al, who found no significant relation between MI & anxiety scores. This finding in our study can be illustrated by the fact that most of the patients interviewed were in-patients of the cardiology department

undergoing treatment and all the patients examined had more than one month illness duration and may have been relieved of transient anxiety features expected in the acute phase. Though the patients were admitted in ward for therapeutic interventions which might be expected to precipitate anxiety, since they had been treated for acute illness and being in a secure environment and having no associated physical complications, the anxiety scores were less than expected. Another explanation could be because in the control group, most of the patients were males whose caregivers predominantly were their spouse and had good social support from friends and family members which could explain the lesser anxiety scores.

QUALITY OF LIFE:

In our study the total QOL score in case group was 53.73 as opposed to 63.19 in the control group suggesting a decreased QOL in the case group which in confirmed by a statistical significance(p value- 0.00) which is consistent with the study done by Catherine Hsieh et al in 2010(18).

Further analyzing the individual domains, in all the four domains the scores were significantly lesser in all the four domains in the cases when compared to controls. Moreover, the difference was especially in domains 3 and 4. Cancer patients had lesser social support, more unemployment

and also tended to be more secluded because of the chronic nature of illness and

From the correlation analysis, the physical health domain has positive significant correlation with the other three domains, shows that decline in physical activity due to disease has an impact on the psychological well being, social relationships and also the environmental interactions of the individual. In the same way the psychological domain also positively correlated with the social and environmental domains which very well understandable that with increasing psychiatric symptoms there will be decline in the social and interpersonal relationships.

In correlation analysis of myocardial infarction patient groups had similar positive correlation of the physical and psychological domains, but these patients also showed impairments in social and environmental interactions are affecting functioning of all other three domains of the patient.

In our study higher depressive score were reported but it was not statistically significant. In the control group males had better Quality of life than females and in Myocardial Infarction patients the quality of life total score was better in joint family than nuclear family.

PSYCHIATRIC MORBIDITY AFFECTING QUALITY OF LIFE

Previous studies done by Deirde Lane et al(23) and Shannon Gravely-Witte et al, to evaluate the effect of psychiatric morbidity on the quality of life in myocardial infarction patients found significant relations between the two.

In our study, we have found the depression and anxiety were having significant relationship with the quality of life of the patients in both the groups.

In the cancer patients the anxiety was having impact over the total quality of life but it had no impact in the social relationships and the depression had the impact over the psychological and environmental relations only.

In the myocardial infarction patients, anxiety had affected the psychological, social and environmental relations but it had not affected the physical activity of the patients. The depression in myocardial infarction patients had affected the physical activity and the environmental relations

CAREGIVER BURDEN :

The increasing survival rate in chronic medical illnesses has increased the caregiver burden inadvertently as evidenced by previous study done by Susan J Pressier et al(28) in patients with cardiac diseases and Rose E et al(15), Barbara Given et al(37) in cancer patients.

In this study as expected in the Indian scenario, the spouse were the most common care giver in both cases(45%) and control(76%) . The mean care giver burden score in cancer was 38.15 compared to 29.09 in controls which was statistically significant (p – 0.001).

Our study has shown increased care giver burden in cancer patients due to chronic debilitating course of the illness. The decreased physical activity and psychiatric morbidity might cause more financial burden to the family thereby increasing the care giver burden. This was evident from our study that the lower socio economic status negatively correlated with care giver score.

Increased caregiver burden score in control group maybe due to the acute onset of illness when patients are most often treated in the intensive care settings which may induce apprehensions in the

Caregiver concerning the patients survival and a later dawning of the prospects of financial difficulties.

LIMITATIONS OF THE STUDY

1. Follow up study may reveal the true presentation of quality of life, care giver burden in reference to intricate issues.
2. Affordability, economics of therapy and accessibility of care , they have to be individually studied with age matched population with reference to these group of patients.
3. Disintegration of joint family system and separation of the spouse, decline in the financial status, personality make up of the individual, impact of comorbid medical conditions may be studied with the prospective study.
4. As this study sample from a tertiary care hospital, we could not generalize our findings. A larger sample from the community may conclude these findings.

SUMMARY AND CONCLUSION;

Psychiatric manifestations in medical disorders have gained much importance in recent years. Psychiatric disorders among cancer patients and myocardial infarction patients have been well studied in previous researches. Studies have proved that, quality of life and care giver burden are altered due to the psychiatric morbidity among the patients.

Cancer patients and patients of post myocardial infarction status were enrolled for this study for comparative assessment of psychiatric morbidity, quality of life and care giver burden. The cancer patients are selected from department of radiotherapy and myocardial infarction patients enrolled were in patients from cardiology ward of the department of cardiology at Govt.Stanley Medcial College and Hospital. Informed consent was taken from patients included in the study. After obtaining information for socio-demographic data, the subjects were administered HADS, WHO-QOL BREF scale followed by Burden Assessment Schedule.

The data was collected and analysed by SPSS, the results showed the psychiatric symptoms of depression and anxiety were present in both the groups.

Depression and Anxiety were more common in cancer patients than myocardial infarction patients. The Quality of Life score was decreased in cancer patients compare to myocardial infarction. The Quality of Life significantly affected by the psychiatric morbidity present in both case and controls. Care giver burden increased in cancer patients.

In this study females were predominant in cancer group and males were more in myocardial infarction. Illiteracy, poor income, low socio-economic status were having significant relationship with psychiatric morbidity and quality of life.

These results are in keeping with previous results of cancer patients and myocardial infarction patients.

This study is an initial step in comparing two life threatening medical illnesses. Further work up will be needed to conclude these findings with large sample and prospective study.

From the study it is concluded that psychiatric intervention is mandatory in the view of reducing the psychiatric morbidity and care giver burden there by improving the Quality of life of both the patients and the care giver.

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aPROFORMA

NAME:

1. Age:
2. Sex: 1. Male 2.female
3. OCCUPATION: 1. Semiskilled, 2. Skilled, 3. Professional, 4. unemployed
4. ADDRESS: 1.Rural/2.Semi Urban/3.Urban

Contact number:

5.EDUCATION:

1. Illiterate
2. Primary
3. 10^{TH} std
4. Secondary
5. Graduate
6. Post Graduate
7. Professional

6.SOCIO ECONOMIC STATUS

1. <1000

2. 1000-5000

3.5000-10000

4. >10000

7. FAMILY

1. Nuclear

2. Joint

8. Family Status

1. Married

2. Unmarried

3. Divorced

4. Separated

5. Widowed

9. Care Giver

1. Parents

2. Spouse

3. Daughter

4. Son

5. Relative

6. Friend

7. Alone

10. Physical activity 1. Normal 2. Mild affected 3. Moderately affected

4. bed ridden

11. Referral from

1. Opd 2. Ward

12. Smoking/ Tobacco: 1. Yes, 2. no

13. Diabetes: 1.Yes 2. No

14. HTN: 1. Yes, 2. No

15. Diagnosis: 1. Cancer, 2. Ischemic heart disease

16. Cancer Site: 1. CA CX, 2. CA Breast, 3. CA tongue & oral cavity, 4. GIT, GB 5. parotid region, 6. Penile CA, 7. others

17. Cancer Stage: 1. Without metastasis, 2. With metastasis

18. Undergone surgery for cancer 1.yes 2.no

19. Chemotherapy 1.yes 2.no

20. Radio therapy 1. Yes 2. No

21. cardiac diagnosis

1. MI

2. unstable angina

3. stable angina

22. cardiac procedure planned: 1. Angiogram, 2. Angioplasty, 3. CABG

23. Duration since diagnosis: 1. >4 wks-<8wks, 2. 2-6 months, 3. 7months – 1yr 4. >1yr

24. HADS- Anxiety: 1. Normal, 2. Borderline abnormal, 3. Abnormal

25. HADS- Depression: 1. Normal, 2. Borderline abnormal, 3. Abnormal

26. QOL- DOMAIN 1

27. QOL- DOMAIN 2

28. QOL- DOMAIN 3

29. QOL- DOMAIN 4

30. Care Giver Burden Score:

31.Total QOL - Score

name	age	sex	occupation	address	education	SES	family type	family status	care giver	physical activity	refer from	smoking	DM	HTN	DX	CA SITE	CA STAGE	SURGERY FOR CA	CHEMO	RT	CARDIO DX	CARDIO PROCEDRE	DURATION	HADS-A	HADS-D	BPRS	QOL-D1	QOL-D2	QOL-D3	QOL-D4	CG SCORE	TOTAL QOL
Komala	52	2	4	3	2	5	1	5	4	2	1	2	2	2	1	7	2	2	2	2			3	1	2	28	54.16	60	50	75	35	59.77
sekar	51	1	1	1	2	2	1	1	3	3	1	1	2	2	1	6	2	1	2	2			2	3	3	42	56.25	55	62.5	41.66	38.75	53.85
anjalai	50	2	4	3	1	5	2	1	3	2	1	2	2	2	1	7	2	1	1	1			2	1	3	37	45.83	55	62.5	62.5	37.5	56.45
palaiyam	45	2	1	3	1	2	2	5	3	2	1	1	2	2	1	1	1	2	2	2			2	2	3	31	58.33	50	50	66.66	33.75	56.24
kalyani	38	2	1	1	1	2	2	5	3	2	1	2	2	2	1	1	2	2	2	1			2	2	3	27	45.8	55	25	50	31.25	43.95
mohanaundaram	53	1	1	3	2	2	1	1	2	3	2	1	2	2	1	4	1	2	1	2			2	2	3	26	58.33	50	45	58.33	51	52.41
nagaratinam	60	2	4	3	1	5	2	5	3	2	1	2	2	2	1	5	1	1	2	1			3	3	3	28	45.83	50	50	58.33	35	51.02
feilsaya	43	2	4	1	3	5	1	5	4	2	1	2	1	1	1	2	1	1	1	2			3	2	2	29	41.6	55	50	66.66	35	53.31
roja	55	2	4	1	1	5	2	5	4	2	1	2	2	2	1	1	1	2	2	3			2	1	3	21	45.8	40	50	45.8	40	45.4
muniammal	45	2	1	2	2	2	2	1	2	3	1	1	2	2	1	7	1	1	2	1			2	2	3	32	45.8	55	87.5	70.8	33	64.78
uthrapathi	60	1	4	2	1	5	1	1	2	2	1	1	2	2	1	7	1	2	2	2			2	2	3	36	62.5	45	37.5	58.33	45	50.83
baby	50	2	1	1	1	2	2	1	3	2	1	2	1	2	1	1	1	2	2	1			2	3	3	34	50	55	75	58.33	41.25	59.58
jagadeswari	55	2	4	3	1	5	2	5	4	4	2	2	2	2	1	2	2	2	1	2			3	2	3	24	45.8	45	37.5	54.16	44	45.61
ramanujamma	60	2	4	3	1	5	1	5	3	2	1	2	2	2	1	1	1	2	2	2			2	2	3	26	54.16	50	37.5	62.5	36.25	51.04
shanthi	30	2	4	3	2	5	1	1	2	1	1	2	2	2	1	5	1	1	2	2			2	2	1	32	54.16	65	87.5	75	35	70.41
dehli	37	1	2	1	2	4	2	1	1	1	1	1	2	2	1	7	1	1	2	2			2	2	2	33	62.5	70	87.5	62.5	31.25	70.62
kanniammal	55	2	1	1	1	1	1	5	5	3	2	2	2	2	1	1	1	2	2	2			2	2	3	31	50	60	50	50	42.5	52.5
ashok	31	1	2	1	4	2	1	2	1	3	2	2	2	2	1	4	1	2	1	2			4	3	3	42	50	50	25	41.66	41.25	41.66
baskar	40	1	2	1	2	3	1	2	3	2	1	1	2	2	1	7	1	2	2	2			2	3	3	34	45.83	55	32.5	41.66	50	44.99
padmini	44	2	4	3	2	5	1	1	2	2	1	2	2	2	1	2	1	1	1	2			3	1	3	30	50	55	62.5	54.1	35	55.41
selvi	48	2	4	3	3	5	1	1	2	2	2	2	2	2	1	4	1	2	1	2			2	2	3	29	54.16	65	75	70.83	36	66.24
vijaya	50	2	1	1	1	1	1	1	5	2	2	2	2	2	1	1	1	2	2	2			2	3	3	31	58.33	55	50	50	40	53.33
anwarbasha	55	1	2	2	2	3	1	1	2	2	1	1	2	2	1	7	1	1	2	2			4	2	3	26	66.66	65	62.5	66.66	35	65.2
amrumuga	60	1	1	2	1	2	1	1	4	2	1	1	1	1	1	6	1	1	2	2			2	2	3	38	54.16	50	50	54.16	36.25	52.08
srinivasan	43	1	2	1	3	2	1	2	2	2	1	1	2	2	1	3	1	1	2	2			2	2	3	34	62.5	60	87.5	66.25	41	69.18
stephenraj	43	1	2	3	3	2	1	1	2	2	2	2	2	2	1	7	1	1	2	2			2	1	3	27	50	60	62.5	70.3	34	60.83
jothi	30	2	1	1	2	1	1	1	2	2	1	2	2	2	1	2	1	1	1	2			2	3	3	33	58.33	65	62.5	66.66	43	63.12
karnan	54	1	1	3	2	2	1	1	2	2	1	1	2	2	1	7	1	2	2	2			2	3	3	25	50	65.62	62.5	66.66	41	61.19
maheswari	45	2	1	1	2	1	1	1	4	2	1	2	2	2	1	7	1	2	1	2			3	3	3	33	54.16	60	62.5	66.66	43	60.83
porkodi	48	2	4	2	2	5	1	1	5	2	1	2	2	2	1	1	1	2	2	2			2	2	3	30	66.62	65	62.5	66.66	31	65.18
dosswell	47	1	2	3	2	3	1	1	2	2	1	1	2	2	1	3	1	2	2	2			2	2	3	30	54.16	70	75	62.5	41	65.41
umarani	30	2	4	3	4	5	1	1	2	2	1	2	1	2	1	2	1	1	1	2			2	3	3	34	45.8	50	75	75	39	61.45
chellammal	30	2	1	1	2	2	1	1	2	3	1	2	2	2	1	2	1	1	1	2			3	2	3	31	54.1	55	50	41.66	41	50.19
pandian	50	1	1	3	2	2	1	1	2	3	2	1	2	2	1	3	1	2	2	2			2	3	3	40	50	50	75	54.16	39	57.29
natarajan	60	1	1	1	2	2	1	1	2	2	2	1	2	2	1	7	1	2	2	2			2	3	3	26	50	60	37.5	75	40	55.62
malliga	45	2	1	1	1	1	1	1	2	3	2	2	2	2	1	1	1	2	2	2			2	3	3	28	58.33	60	37.5	62.5	37	54.58
varalakshmi	60	2	4	3	1	5	1	5	3	2	1	2	2	2	1	1	1	2	2	1			4	3	3	38	45.83	40	25	41.66	35	38.12
mariammal	50	2	1	1	1	1	1	1	5	3	2	2	2	2	1	3	1	2	2	2			2	2	3	29	50	45	62.5	41.66	41.25	49.79
thangamani	57	2	4	3	2	5	1	1	3	3	2	2	2	2	1	1	1	2	2	2			2	3	3	35	50	45	62.5	54.16	36.25	52.91
pappathi	50	2	1	1	1	1	1	1	4	2	1	2	2	2	1	1	1	2	2	2			2	2	3	25	66.66	60	50	75	38.75	62.9
saroja	55	2	1	1	2	1	1	1	2	3	2	2	2	2	1	4	1	2	2	2			2	3	3	34	50	50	50	41.66	46	47.91
ranganathan	60	1	1	3	2	2	1	1	4	3	1	1	2	2	1	3	1	2	2	1			2	3	3	47	54.16	45	37.5	41.66	51.25	44.56
ramalingam	60	1	2	1	3	4	1	1	2	3	1	2	2	2	1	4	1	1	2	2			2	3	3	28	54.16	33.33	62.5	50	26	49.99
pappathi	60	2	4	2	2	5	1	5	3	2	2	2	2	2	1	2	2	1	1	2			4	3	3	27	50	50	37.5	54.16	37.5	47.91

name	age	sex	occupation	address	education	SES	family type	family status	care giver	physical activity	refer from	smoking	DM	HTN	DX	CA SITE	CA STAGE	SURGERY FOR CA	CHEMO	RT	CARDIO DX	CARDIO PROCEDRE	DURATION	HADS-A	HADS-D	BPRS	QOL-D1	QOL-D2	QOL-D3	QOL-D4	CG SCORE	TOTAL QOL
senthilnath	40	1	2	3	1	2	1	1	1	2	2	2	2	2	1	7	1	1	2	2			2	3	3	35	50	50	37.5	41.66	46	44.79
muthaian	59	1	2	3	2	2	1	1	2	3	2	2	2	2	1	4	1	2	2	2			2	3	3	34	50	50	37.5	41.66	37	44.79
dhavmani	38	1	1	1	2	2	1	1	2	3	1	2	2	2	1	3	1	2	2	2			1	3	3	36	50	33.33	37.5	41.66	40	40.62
sushila	35	2	4	3	3	5	1	1	2	2	1	2	1	2	1	2	1	1	1	2			2	3	3	30	50	50	37.5	58.33	32	46.45
razia	42	2	1	1	1	1	1	4	5	2	2	2	1	2	1	3	1	1	2	2			2	3	3	39	50	50	37.5	41.66	38.75	44.79
rangasami	57	1	1	3	2	2	1	1	2	2	1	1	2	1	1	7	1	1	1	2			2	3	3	32	50	33.33	37.5	45.83	37	41.66
thangaraj	53	1	1	3	2	2	1	1	2	2	1	1	2	2	1	5	1	1	2	2			2	2	3	27	58.33	65	37.5	70.83	31	57.91
kuppammal	60	2	1	1	1	1	1	5	5	3	2	2	2	2	1	1	1	1	2	2			2	3	3	29	50	55	25	54.16	38.75	46.04
nisha ahmed	43	1	1	1	2	2	1	1	4	3	1	1	2	2	1	4	1	2	2	2			2	3	3	31	50	50	37.5	41.66	42.5	44.79
poosammal	60	2	1	1	1	1	1	5	3	2	2	1	2	2	1	1	1	2	2	2			2	3	3	30	54.16	50	37.5	50	43.75	49.16
pechiammal	55	2	1	1	2	2	1	1	3	2	2	2	2	2	1	1	1	2	2	2			2	3	3	29	45.8	55	50	62.5	41.25	53.32
vimala	32	2	1	1	1	2	1	1	2	3	2	2	2	2	1	1	1	2	2	2			2	3	3	35	50	50	50	45.83	41	51.45
savithri	45	2	4	3	2	5	1	1	5	2	1	2	1	2	1	7	1	1	2	2			3	3	3	27	62.5	55	50	75	37.5	60.62
tamilselvan	49	1	1	1	3	2	1	1	2	2	2	1	2	2	1	4	1	1	2	2			3	3	3	34	50	45	37.5	54.16	40	46.6
ratinam	60	1	1	1	2	1	1	1	5	2	1	1	2	2	1	4	1	1	2	2			2	3	3	37	41.66	50	37.5	41.66	40	42.7
kamachi	45	2	1	1	1	2	1	1	3	2	2	2	2	2	1	1	1	2	2	2			2	2	3	24	58.33	55	50	66.66	38.75	57.49
mangammal	45	2	4	1	1	5	1	1	2	3	2	2	2	2	1	7	1	2	2	2			2	2	3	27	50	50	37.5	41.66	42	44.79
ramalingam	60	1	1	3	2	2	1	1	3	3	1	1	2	2	1	4	2	1	1	2			4	3	3	34	50	33.33	37.5	45.83	40	42.66
mahabujailani	42	2	4	1	1	5	1	5	4	2	1	2	1	1	1	2	1	1	1	2			4	2	3	27	50	50	37.5	58.33	42.5	48.95
sundar	49	1	2	2	2	3	1	1	2	2	2	1	1	2	1	4	1	2	1	2			2	2	3	30	50	45	38	58.33	36	47.7
selvamangalam	48	2	1	3	1	2	1	1	4	2	1	1	2	2	1	4	1	2	2	2			2	2	3	30	41.6	55	50	70.83	32.5	54.35
balachandranpandian	31	1	2	3	2	2	1	2	1	2	2	2	2	2	1	3	1	2	2	2			1	2	3	31	66.66	60	75	75	36.25	69.15
muniammal	58	2	1	3	1	2	1	1	3	2	1	2	2	1	1	1	1	2	2	2			2	2	3	31	54.16	55	50	66.66	38.75	56.45
paranthaman	53	1	2	2	2	2	1	1	2	1	2	1	2	2	1	5	1	2	2	2			2	1	1	22	58.33	60	62.5	70.83	44	62.9
antonyammal	55	2	4	3	1	5	1	1	3	1	1	2	2	2	1	1	1	1	2	2			2	3	3	30	50	55	37.5	70.83	36.25	53.3
krishnamachari	59	1	2	2	2	5	1	1	2	2	1	1	2	2	1	3	1	2	2	2			2	3	3	32	50	55	37.5	41.66	43	46.04
ekabaran	55	1	1	2	2	2	1	1	2	2	1	1	2	2	1	3	1	2	2	2			2	2	3	31	50	50	37.5	62.5	41	50
guna	48	2	4	2	1	5	1	5	3	2	1	2	1	1	1	1	1	2	2	2			2	3	3	34	54.16	55	50	62.5	42.5	55.4
remija	37	2	1	3	1	2	1	1	2	1	2	2	2	2	1	1	1	1	2	2			2	1	2	27	58.33	60	62.5	75	28	63.98
deivanayagi	35	2	1	1	1	5	1	1	2	2	2	2	2	2	1	4	2	1	1	2			4	3	3	33	50	50	50	58.33	37	52.08
ammu	30	2	1	3	1	1	1	2	1	1	2	2	2	2	1	7	1	1	1	2			2	1	2	24	50	55	37.5	58.33	45	50.2
kuladhaiammal	60	2	4	2	1	5	1	5	3	2	2	2	2	2	1	1	1	2	2	2			1	2	3	29	50	70	37.5	58.33	30	53.95
dhakshinamoorthy	60	1	1	3	2	5	1	1	2	2	1	1	2	1	1	3	1	2	2	2			2	2	2	29	66.66	55	50	75	38	61.66
selvamani	35	1	1	3	2	2	1	1	2	2	1	1	2	2	1	1	1	1	2	2			2	2	3	28	45.83	65	50	66.66	35	56.37
ponnammal	48	2	4	1	1	5	1	1	2	1	2	1	2	2	1	7	1	1	2	2			2	2	3	31	75	55	50	66.66	32	61.66
vanaja	60	2	1	3	2	5	1	5	3	1	1	2	2	2	1	2	1	1	1	2			3	1	1	26	54.16	60	50	75	30	57.82

name	age	sex	occupation	address	education	SES	family type	family status	care giver	physical activity	refer from	smoking	DM	HTN	DX	CA SITE	CA STAGE	SURGERY FOR CA	CHEMO	RT	CARDIO DX	CARDIO PROCEDRE	DURATION	HADS-A	HADS-D	BPRS	QOL-D1	QOL-D2	QOL-D3	QOL-D4	CG SCORE	TOTAL QOL
arumugam	57	1	2	2	2	3	1	1	2	2	2	2	2	2	2						1	1	4	2	2	27	46	65	75	75	25	65.25
kesavan	48	1	1	3	2	2	1	1	2	2	2	1	2	2	2						1	1	2	2	2	26	58.33	62.5	75	75	30	67.65
mani	49	1	1	3	3	3	1	1	2	1	2	1	2	2	2						1	1	1	3	3	30	56.25	56.25	75	62.5	26	62.4
ayyadurai	56	1	1	3	3	2	1	1	2	2	2	1	1	1	2						1	1	4	2	3	30	50	50	75	75	26	62.5
rajendran	55	1	2	1	2	3	1	1	2	2	2	1	2	1	2						1	1	4	2	2	33	62.5	45	75	45.83	30	57.02
mani	35	1	1	1	2	2	1	1	2	3	2	1	2	2	2						1	1	4	3	3	27	58.33	50	75	56.25	32	59.82
kumar	47	1	1	3	2	3	1	1	2	2	2	2	2	2	2						1	1	4	2	2	23	62.5	62.5	75	75	27	68.75
robert	44	1	2	2	3	2	1	1	2	2	2	1	2	1	2						1	1	1	3	3	31	50	45	62.5	62.5	33	55
ilias basha	55	1	2	3	3	3	2	1	2	2	2	1	2	2	2						1	2	1	2	3	22	62.5	62.5	87.5	75	31	71.87
panchalai	60	2	1	1	2	1	1	1	3	3	2	2	1	1	2						1	1	2	3	3	23	56.25	65	62.5	66.66	30	63.17
geetha	39	2	2	2	2	2	1	1	3	3	2	2	2	1	2						1	1	3	2	2	24	50	60	62.5	75	28.5	61.87
chinnaponnu	55	2	1	1	2	1	1	5	3	3	2	2	2	2	2						1	1	3	3	3	19	50	60	37.5	66.66	30	53.54
marimuthu	55	1	1	3	1	2	1	1	2	2	2	2	2	2	2						1	1	2	1	1	24	56.25	62.5	62.5	75	28	64.05
saraladevi	42	2	4	2	2	5	1	1	5	2	2	2	1	2	2						1	1	2	1	2	26	56.25	62.5	50	69	27.5	59.42
shankar	53	1	2	3	2	3	1	1	2	2	2	1	2	1	2						1	1	2	2	2	27	50	62.5	62.5	75	30	62.5
rajeswari	48	2	1	3	1	2	1	1	2	3	2	2	1	2	2						1	1	1	3	3	32	50	62.5	37.5	75	29	56.25
saraswathi	50	2	4	3	2	5	1	5	5	3	2	2	1	1	2						1	1	1	2	3	32	46	50	50	71	27.5	54.25
gopalakrishnan	52	1	2	3	4	2	1	1	2	3	2	1	1	2	2						1	1	1	3	3	27	50	40	37.5	44	27	42.87
sasidaran	48	1	2	3	3	3	1	1	2	2	2	2	1	2	2						1	1	4	2	3	33	58.33	65	75	75	38	68.32
prince david	47	1	2	1	3	3	1	1	2	3	2	2	1	2	2						1	1	2	1	3	28	69	65	75	75	33	71
das	60	1	1	1	1	2	1	5	4	2	2	1	2	2	2						1	1	1	1	1	21	71	65	62.5	75	30	68.37
umapathy	60	1	2	3	2	3	1	1	2	2	2	1	2	1	2						1	1	3	1	1	21	62.5	62.5	87.5	75	49	71.87
malika begum	60	2	4	3	2	5	1	1	2	3	2	2	2	1	2						1	1	1	3	3	27	50	45	37.5	44	34	44.12
ettiappan	60	1	1	3	2	2	1	1	2	1	2	1	2	2	2						1	1	2	2	3	25	58.33	65	50	75	29	62.02
loganathan	55	1	1	3	2	3	1	1	2	3	2	2	1	1	2						1	1	2	3	3	30	58.33	62.5	50	75	28	61.45
ravi	43	1	1	3	1	2	1	1	2	2	2	2	2	2	2						1	1	2	2	2	24	46	65	37.5	75	34	55.87
dhanasekar	55	1	2	2	2	3	1	1	2	2	2	1	2	2	2						1	1	1	1	1	18	62.5	62.5	87.5	75	47	71.87
suresh	31	1	2	3	4	3	1	1	2	3	2	1	2	2	2						1	1	2	2	3	29	56.25	62.5	75	75	35	67.17
annadurai	55	1	2	3	3	2	1	1	2	3	2	1	1	2	2						1	1	1	1	2	24	50	62.5	50	75	26	59.3
arumugam	60	1	2	3	2	3	1	1	2	2	2	2	2	2	2						1	1	4	2	3	22	62.5	62.5	87.5	75	29	71.8
mohamed rafee	55	1	2	3	2	2	1	1	2	1	2	1	2	1	2						1	1	1	1	2	23	46	62.5	62.5	75	26	61.4
manikam	60	1	1	3	2	3	1	1	2	3	2	2	1	1	2						1	1	1	1	1	23	58.33	50	50	75	25	58.2
parthasarathy	58	1	1	2	3	2	1	1	4	2	2	1	2	1	2						2	1	1	1	2	22	75	62.5	50	68.7	26	60.05
kribanatham	54	1	2	3	2	3	1	1	2	2	2	1	1	2	2						1	1	1	1	2	24	62.5	62.5	62.5	75	25	65.6
kanagavalli	55	2	4	3	1	5	1	1	3	3	2	2	2	2	2						1	2	2	1	1	24	58.33	50	37.5	62.5	28.75	52.02
arumugam	54	1	2	1	2	3	1	1	2	3	2	2	1	1	2						1	1	2	1	2	27	56.25	65	75	75	28	67.8
nagalingam	55	1	1	1	2	2	1	1	2	2	2	1	2	2	2						1	1	2	1	2	25	58.33	62.5	62.5	75	28	64.5
elango	60	1	1	3	2	2	1	1	2	2	2	1	2	2	2						1	1	1	1	1	22	56.25	62.5	75	75	24	67.25
saravanan	40	1	1	3	3	2	1	1	2	2	2	1	2	2	2						1	1	2	2	2	27	62.5	65	75	75	28	69.3
amsa	60	2	4	3	3	5	1	5	5	3	2	2	2	2	2						1	1	4	2	3	24	56.25	62.5	62.5	75	25	64
rani	55	2	1	3	2	2	1	5	3	3	2	2	1	1	2						1	1	4	2	3	32	50	65	62.5	75	31.25	63.12
senthil kumar	40	1	2	2	4	3	1	1	2	3	2	1	2	2	2						1	1	2	1	2	23	70.6	65	87.5	100	26	80.7
mythili	44	2	4	2	2	5	1	1	3	3	2	2	2	1	2						1	1	2	2	3	27	58.5	62.5	62.5	75	27.5	64.57
kasim	58	1	2	3	3	3	2	1	2	3	2	1	1	2	2						1	2	4	1	2	26	58.5	62.5	62.5	75	31	64.57

name	age	sex	occupation	address	education	SES	family type	family status	care giver	physical activity	refer from	smoking	DM	HTN	DX	CA SITE	CA STAGE	SURGERY FOR CA	CHEMO	RT	CARDIO DX	CARDIO PROCEDRE	DURATION	HADS-A	HADS-D	BPRS	QOL-D1	QOL-D2	QOL-D3	QOL-D4	CG SCORE	TOTAL QOL
arul	36	1	2	3	2	3	1	1	2	4	2	1	2	2	2						1	1	2	2	2	31	41.66	55	50	75	37	55.41
jayalakshmi	44	2	1	3	1	2	1	5	5	2	2	2	2	2	2						1	1	1	2	3	29	50	65	50	68.7	26.25	58.4
meiyazhagan	60	1	1	3	2	5	1	1	2	3	2	2	2	1	2						1	2	2	1	2	25	56.25	62.5	62.5	75	24	64.05
paneerselvam	59	1	2	3	2	2	1	1	2	2	2	2	2	2	2						1	1	1	1	1	24	58.33	62.5	62.5	75	25	64.57
azeem	58	1	2	3	1	2	1	1	1	2	2	1	2	2	2						1	1	1	2	3	31	56.25	62.5	62.5	75	23	64.05
sivakumar	47	1	2	3	3	3	1	1	2	1	2	1	2	1	2						3	1	2	2	1	25	58.33	62.5	62.5	75	27	64.5
babu	38	1	1	3	2	2	1	1	2	1	2	1	2	2	2						1	1	2	2	2	27	62.5	65	62.5	75	27	66.2
mohan	45	1	1	3	2	2	1	1	2	2	2	2	2	2	2						1	1	2	3	2	29	68.7	65	62.5	70.6	27	66.7
jayalakshmi	42	2	4	3	2	5	1	1	2	2	2	2	2	2	2						1	1	2	1	1	25	68.7	62.5	75	75	24	70.3
durairaj	60	1	1	2	2	2	1	1	2	2	2	1	2	2	2						1	1	2	1	2	24	58.33	45	50	75	28	57.02
murthy	47	1	2	3	5	3	1	1	2	3	2	1	2	2	2						1	1	4	1	1	28	58.33	65	75	70.6	23	67.32
rajasekar	60	1	1	3	4	5	1	1	2	1	2	1	2	2	2						1	1	2	1	1	27	66.66	65	62.5	70.6	24	66.24
fathima	60	2	4	3	2	5	1	5	3	2	2	1	2	1	2						1	1	2	2	3	26	62.5	62.5	62.5	68.7	27.5	60.05
nallatambi	50	1	1	2	3	3	1	1	2	2	2	1	2	1	2						1	1	2	2	2	24	81.2	70	100	87.5	27	84.6
kadirvel	59	1	1	3	2	2	1	1	2	2	2	1	2	2	2						1	1	4	2	2	25	58.33	56.25	62.5	75	27	62.9
kesavan	53	1	1	1	2	2	1	1	2	2	2	2	2	1	2						1	2	2	1	2	25	62.5	65	62.5	75	28	66.25
zafarulla	52	1	2	3	2	2	1	1	4	2	2	1	1	1	2						1	1	1	1	1	23	58.33	62.5	50	75	23.75	61.4
seenu	42	1	1	1	2	2	1	1	2	2	2	1	2	2	2						1	1	2	1	1	23	62.5	65	75	75	29	69.3
rajan	60	1	2	3	3	5	1	5	3	2	2	2	2	2	2						1	2	4	1	2	23	58.33	65	62.5	83.1	29	67.17
murugesan	60	1	1	3	2	1	1	1	2	2	2	2	1	2	2						1	1	2	2	1	26	58.33	56.25	62.5	75	31	62.95
natarajan	46	1	1	3	2	3	1	1	2	1	2	1	2	2	2						1	1	2	1	2	26	62.5	65	75	75	27	69.3
mumtaz	45	2	1	3	2	2	1	1	2	1	2	2	1	2	2						1	1	1	1	2	26	62.5	65	62.5	75	29	66.2
elammal	46	2	4	2	1	5	1	1	2	3	2	2	1	1	2						1	1	3	2	2	30	58.33	62.5	62.5	75	27	64.5
selvarani	40	2	1	2	2	2	1	5	5	1	2	2	1	1	2						1	1	1	1	2	27	58.33	65	62.5	75	25	65.1
duraisami	58	1	1	1	2	2	1	1	2	4	2	1	2	2	2						1	1	1	1	2	23	44	62.5	37.5	69	36	53.25
elangovan	42	1	1	3	2	2	1	1	2	1	2	2	2	2	2						1	1	1	1	1	23	58.33	60	75	75	30	67.02
sureshkumar	44	1	2	3	3	2	1	1	2	3	2	1	2	1	2						1	1	4	3	3	32	50	55	37.5	58.33	43	50.2
gracy	48	2	4	2	4	5	1	1	2	3	2	2	1	2	2						1	1	2	1	2	27	54.16	65	62.5	75	28	64.16
nandagopal	45	1	1	2	3	3	1	1	2	2	2	1	2	2	2						1	1	1	1	2	32	62.5	65	75	70.83	31	68.33
indrani	54	2	4	1	2	5	1	5	3	2	2	2	1	1	2						1	1	4	2	2	25	54.16	50	50	66.66	30	55.2
shanthi	60	2	4	2	2	5	1	5	5	1	2	1	1	1	2						1	1	1	1	3	27	54.16	65	37.5	66.66	26.75	58.95
das	57	1	1	1	2	2	1	1	2	1	2	1	2	2	2						1	1	1	1	2	28	54.16	65	50	66.66	24	58.95
madusudanan	51	1	1	3	2	2	1	1	2	2	2	1	2	2	2						1	1	1	1	2	28	50	65	75	75	29	66.2
kannaiah	44	1	1	1	1	2	1	1	2	2	2	1	2	2	2						1	1	1	1	3	28	54.16	65	75	62.5	32	64.16
eswaran	40	1	1	2	1	2	1	1	2	1	2	1	2	2	2						1	1	2	1	2	25	58.33	65	50	70.83	29	61.03
singarayar	60	1	1	3	3	2	1	1	2	2	2	2	1	2	2						1	1	1	1	2	25	66.66	55	50	70.83	34	58.5