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COST OF CANCER TREATMENT: A PUBLIC –PRIVATE COMPARISON

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ABSTRACT

Cancer is the one of the important non communicable disease and its impact on human is very large. In India nearly four lakhs of people are affected by Cancer every year. Out of them two lakhs of people die. In Kerala there are almost 35,000 cancer cases reports each year as newly occurs. Kerala is one of the Indian state have comparitably better health care facilities and has long been known for spectacular feats in the field of health and social development indicators comparable to developed countries. There are 55857 new cases of cancer are reported in this year as per the cancer registry. About 2, 50,000 people in Kerala undergo cancer treatment. Cancer is curable, if it is detected at early stages. The patient enjoys full life without recurrence of the disease. Cancer has a significant social and economic impact on individuals, families, and the community in terms of the provision of health care infrastructure, absence from work and premature mortality. This is a study to analyze the socio-economic background of the cancer patients and to find the cost difference in treatment in public sector and private sector hospitals in Pathanamthitta district. The study also tries to evaluate the social isolation of cancer patients and how the cost of treatment affects household's wealth.

Keywords: Health care, Cancer, cost of treatment, social isolation.

INTRODUCTION

The World Health Organization (WHO) has defined health as "a state of complete physical, mental, and social well being and not merely the absence of disease or infirmity". Better health is the core of human happiness and well-being. It also makes an important contribution to economic progress, as healthy population live longer is more productive and save more. Good health boosts labor productivity, educational attainment and income and so reduces poverty.

Cancer is one of the most important non communicable diseases. In India nearly four lakhs of people are affected by Cancer every year. Out of them two lakhs of people die. The main reason for the alarming rate of deaths is due to the lack of health care facilities in our country. In Kerala

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

there are almost 35,000 cancer cases reports each year as newly occurs. Kerala is one of the Indian state have comparitably better health care facilities and has long been known for spectacular feats in the field of health and social development indicators comparable to developed countries. There are 55857 new cases of cancer are reported in 2016 as per the cancer registry. About 2, 50,000 people in Kerala undergo cancer treatment. Cancer is curable, if it is detected at early stages. The patient enjoys full life without recurrence of the disease. Cancer has a significant social and economic impact on individuals, families, and the community in terms of the provision of health care infrastructure, absence from work and premature mortality.

"Cancer is referred to as an ailment characterized by an unrestrained growth of abnormal cells which if untreated and unchecked eventually kills the patient." (Priyadarshini n.d.). There are over 100 types of cancers that affect humans. Of them Tobacco causes of about 22% of cancer deaths and another 10% is due to obesity, poor diet, lack of physical activities, and excessive drinking of alcohol. Other factors include certain infections, exposure to ionizing radiation and environmental pollutants.

Cancer is a leading cause of death worldwide, accounting for 8.8 million deaths in 2015. The most common causes of cancer death are cancers were, Lung (1.69 million deaths), Liver (788 000 deaths),Colorectal (774 000 deaths) ,Stomach (754 000 deaths),Breast (571 000 deaths) (world health organisation n.d.). Lung cancer was the most common cancer worldwide contributing 13% of the total number of new cases diagnosed in 2012. Breast cancer (women) was the second most common cancer which having 1.7 million cases in 2012.Colorectal cancer was the third most common cancer with nearly 1.4 million new cases in 2012.The countries in the top ten come from Europe, Oceania, Northern America and Asia. (wcrf: cancer facts and figures n.d.)

As a consequence of continuing socio-economic development and increasing control of communicable diseases, life expectancy in all Asian countries has significantly increased. The proportion of people aged 65 years and above is likely to double from the current 7% by 2030. It is well known that cancer risk increases with age. Changing lifestyles, increasing urbanization, changes in reproductive patterns and diet, obesity, tobacco use, alcohol drinking, chronic infection and increasing lifespan contribute to an ever-increasing cancer burden and changing cancer pattern in Asian countries. Excluding rich economies such as Japan, Hong Kong, Singapore, South Korea, Saudi Arabia, United Arab Emirates, Kuwait, Qatar and Bahrain, these region, with 56% of the world's population (3.8 billion), contributes 44% of all cancer cases (6.4 million out of 14.1 million) and 51% of all cancer deaths (4.3 million out of 8.2 million) globally, with China representing the majority of the cancer burden. Incidence rates vary by almost fourfold, being highest in the Republic of Korea (307.8 per 100,000) and lowest in

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

Bhutan (79.2 per 100,000), and mortality varies by threefold—from the highest in Mongolia (161 per 100,000) to the lowest in Maldives (53.7 per 100,000). (THE CANCER ATLAS n.d.)

The current Indian population is 1,270,272,105 (1.27 billion) as per 2011 census. The incidence of cancer in India is 70-90 per 100,000 populations and cancer prevalence is established to be around 2,500,000 (2.5 million) with over 800,000 new cases and 5, 50,000 deaths occurring each year. More than 70% of the cases present in advanced stage accounting for poor survival and high mortality. About 6% of all deaths in India are due to cancers which contribute to 8% of global cancer mortality.

According to Indian Council of Medical Research (ICMR) data on site specific cancer burden, in males, the most common are cancers of mouth/pharynx, esophagus, stomach, lung/bronchi while as in females, the common cancers are cervix, breast, mouth/ pharynx and esophagus. Carcinoma breast is more common in urban females. Cancer breast is the leading cancer among females as reported in registries from Mumbai, Delhi and Bangalore while in rest of registries, cancer cervix is the leading cancer followed by breast cancer. The estimated number of breast cancer cases in India for the year 2010, 2015 and 2020 will be approximately 90,659; 106,124 and 123,634 respectively. So breast cancer is expected to cross the figure of 100,000 cases in year 2015.The annual global incidence of carcinoma cervix is approximately 500,000 cases and India contributes about one-fifth of the burden ,ie,100,000 cases annually. In South India, cancer cervix is the most common cancer among females. The incidence of cancer cervix in Chennai is 99 per 100,000. Over the years in spite of decreasing incidence of cervical cancers, the gynecologic cancers have increased in India and are contributing about 30% of total cancers among women in India. Among these carcinoma cervix followed by carcinoma ovary and corpus uteri are the major contributors. The estimated numbers of cancer cases related to digestive system were 107,030 in males and 86,606 in females for the year 2010. The major three cancers contributing were stomach cancers (19.8%), esophagus (18.6%) and colon cancers (14.2%). Esophageal cancers are reported maximum from South India (Karnataka, Tamil Nadu) and also from states of Maharashtra, Gujarat, Jammu & Kashmir and parts of Northeastern states.

Age adjusted incidence of esophageal cancers in females in Bangalore is one of the highest in the world (8.3/100,000). Carcinoma stomach has highest incidence from South India especially Chennai and Bangalore. Age adjusted incidence of gall bladder cancers in Delhi is one of the highest in the world (8.9/100,000). Also gall bladder cancers are reported in increasing incidence from North Indian states and West Bengal. Carcinoma lung is having highest incidence from Mumbai, Delhi, Bhopal registries and hypo pharyngeal and penile cancers were more reported in Baarshi registry. Overall high incidence of oral cavity cancers has been reported

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

from Ahmadabad while as tongue cancers were reported more in Bhopal (8.8/100,000). Cancers of oral cavity, tongue and laryngeal cancers contribute maximum towards head and neck cancers. (Bhusan 2014)

REVIEW OF LITERATURE

Chandralekha Mukerji on her article 'Can You bear cost of Cancer?' in the newspaper Times of India (June 6, 2015) had expressed various views on the cost of cancer treatment. According to WHO, 10 lakh new cases are reported in India every year. While the risk of dying from cancer before the age of 75 is only 7.1%, according to Globocan 2012, an international cancer research project, insurers claim that one in five cancer claims is by those between 36 and 45 years.

Business Day newspaper had published an article named 'India has 1.8 million cancer patients only one oncologist to treat every 2,000'by Sushmi Dey (May 24, 2014) has reported the lack of oncologist in India. As per the report, cancer is fast turning into an epidemic in India with about two million registered patients, the country is facing an acute shortage of oncologist , surgical oncologist and radio therapists.

Rengaswaami Sankaranarayanan, Kunnambath Ramadas and You-lin Qiao in their article 'Managing the changing burden of cancer in Asia' which was published in 2014 reveals that Asia accounts 60% of the world population and half of the global burden of cancer. This article shows the importance of health and health care services in Asia. As per this article cancer health services includes policies and governance , integrated infrastructure and systems of awareness creation ,prevention, early detention ,staging, diagnosis, treatments follow up care, palliative care and regular auditing of health services via monitoring and evaluation. It also suggested that carefully planned public/voluntary sector /private sector partnerships and phased development of health care financing involving government sponsored social security schemes, universal health coverage and industrial sector and alignment of donor funds to national planning can lead to development cancer health services in low and middle income countries.

David j hunter and K.Srinath Reddy on their article 'Non Communicable Diseases' which was published in the New England Journal of medical Science(2013) has expressed the impact and spread of non communicable diseases. Non communicable diseases will be the predominant global public health challenge of the 21st century. Prevention of premature deaths due to non communicable diseases and reduction of related health care costs will be the main goals of health policy. Improving the detection and treatment of non communicable diseases and preventing complications and catastrophic events will be the major goals of clinical medicine. A multilevel approach that integrates policy actions, regulations, health education, and efficient health systems to achieve these goals will be the mission of public health. All countries can benefit by

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

sharing experience and pooling expertise for the prevention and control of non communicable diseases.

Rebecca Siegal, Carol Desantis and et.al in their article 'cancer treatment and survivorship Statistics' which was published in CA: A Cancer journal for clinicians(2012) provides statistics on cancer prevalence ,common treatment modalities and survival and review issues related to cancer treatment and survivorship .The study estimated that there are nearly 3 million breast cancer cases in US which is considered as higher and childhood cancer which is commonly rare but representing 1% of all new cancer diagnosis. The study also discuss the methods and treatment and its aftereffects upon patient along with most common cancers.

'Global Cancer Statistics' which was published in CA: A cancer journal for all clinicians by Ahamedin jemal, Freddie bray and et.al (2011) states that the global burden of cancer continues to increase largely because of the aging and growth of the world population alongside an increasing adoption of cancer causing behavior, particularly smoking, in economically developing countries. It suggests that a substantial proportion of the world wide burden of cancer could be prevented through the application of existing cancer control knowledge and by implementing programes.

Markman Maurie and Luce Ryan(2010) on their study 'Impact of the cost of cancer treatment, An Internet based survey' which published in Journal of Oncology Practices states that there had out of pocket expenditure on treatment and medical care on cancer patients. Patients with cancers of the breast, colon, lung and prostate were consider for the survey, 44% were answered the questionnaire. Since diagnosis, 20% and 4% of patients reported having spend out of pocket money more than $10,000 and more than $50,000, respectively, on treatment and medical care. Overall 19% of patient and 39% of individuals with an yearly income less than $40,000 reported the financial costs of treating their cancer had caused a large amount of distress.9% of the patients stated they had decided to not have are commended cancer treatment because it was too expensive.This survey suggests that a substantial proportion of patients and their families experience considerable distress associated with the cost of cancer care delivery recommended treatment. This is a particular serious issue for individuals with modest annual income.

Mukhyopadhyay Abhiroop, Mohanti B Kalyan, Sharma Kuldeep and et.al conducted a study named 'Estimating the Economic Burden of Cancer at Tertiary Public hospital: A Study at All India Institute of Medical Sciences'(2010) estimated the expenditure done by the surveyed patients for diagnosis and initial cancer directed treatment as direct and indirect costs. The study soundly constructed analysis of economic burden to the patients at a public tertiary cancer centre with comprehensive treatment facility.

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

Out of 1 million newely diagnosed cancer patients in India every year, approximately 56% are likely to be suitable for curative aim of cancer care, involving surgery, chemotherapy and radiotherapy. In order to calculate this provision of cancer treatments at the designated Regional Cancer centres, under the National Cancer control programme of the Government of India, an amount of Rs.40,000 for a patient whose MPCI is less than the national average should be reasonable arrangement between the hospitals and its nodal health ministry or funding agency. For treating approximately 1000 patients per year this will involve a sanction of 40 million rupees to the cancer centre. It will be a highly justifiable amount for the public good .

World Cancer Report 2008 by WHO and IARC (edited by Boyle Peter and Levin Bernard) reveals that, Cancer is not a modern disease but has clearly existed for many centuries. The International Agency For Reasearch on Cancer (IARC) estimated that the year 2008,there were 12.4 million incidence of cancer,7.6 million deaths from cancer and 28 million alive with cancer within five years of initial diagnosis. Around the year 2000,less than 20% of the world population was covered by cancer registration and it has been estimated 56.8 million people died in 2004.

Stommel Manfred, Given C W, Given Barbara A in 1993 published an article 'The cost of cancer house to Families' in Cancer Journal emphasized on various costs related to cancer treatment. As per the article, many researches on the costs of cancer care has focused on the formal medical care cost. Research on homecare for patients with cancer has emphasized direct care costs. The research studied , the cost of family labour ,estimated by imputing monetary values for the time spend caring for the patients with cancer. When family labour is included in the cost calculations average cancer home care costs for three months period are not much lower than the cost of nursing home care. The substantial variations in the home care cost appears to be unrelated to the type of cancer diagnosis, type of treatment, or time since diagnosis but seems to be driven by the functional state of the patients an family living arrangements.

Schulman Kevin A and Meropol Neal J published their research on Journal of Clinical Oncology under the head 'Cost of Cancer care; issues and Implications' (2007). This article reviews the macroeconomic principles and individual behavior that govern medical spending and examines how cost disproportionately affects various populations, with special reference to USA. It also analyses the impact of increasing costs and found the reason for disparities in cancer care. Numerous studies have documented that individuals from lower socio economic groups and specific racial and ethnic minorities have greater cancer risk and worse cancer related outcomes .The risk of un-insurance is highest among those in lower income brackets, thus disproportionately affecting those most in need. Even among individuals with insurance, highest financial burden is from the decision of physicians and hospitals.

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

Mallath Mohandas K conducted a study in on 'The growing burden of cancer in India; epidemiology and social context'(2014) stated that cancer can have profound social and economic consequences for people in India, often leading to family impoverishment and societal inequality. Slightly more than one million new cancer cases are diagnosed every year in a population of 1.2 million. Many cancer cases in India are associated with tobacco use, infections and other avoidable cases.

Sinha, D Anderson and et.al on their combained study on 'Cancer Risk an Diet in India'(2003) analyses the role of Indian diet and its various components in prevention of cancer. The article suggests from a public health perspective,there is an increasing need to develop cancer prevention programmes responsive to the unique diets and cultural practices of people in India.

Michael J thum, John Olivet Delancey, Melissa M center and et al published their study based on 'The global burden of cancer: priorities for prevention' in the journal Carcinogenesis on 2009 which reveals various aspects that contributes to the cancer causing and other diseases. This article gives a vivid account on how smoking contributes to ill health and draws out various cancer types that casually relates to smoking. The paper identifies several preventive measures that offer the most feasible approach to mitigate the anticipated global increase in cancer in countries that can least afford it.

Chandralekha Mukerjeein her article 'Can you bear the cost of cancer?' which was published in the Times of business India (2015) emphasized on burden of cost of cancer. According to research done in 2004,the spending in a cancer-afflicted home was 36-44% more than in other households with similar demographics. In the past 10 years, these costs have risen significantly. "The costs have gone up due to more expensive infrastructure, new technology-based investigation costs and newer drugs,". A skewed doctor-to-patient ratio (one for 2,000 patients) worsens the situation. The scenario not only calls for ways to prevent the disease but also adequate financial security to tackle treatment costs. While there are several players in the insurance market offering a variety of products to combat the costs, it is not easy zeroing in on a product.

There were several studies carried out in global, national and state level, analyzed the burden and incidence of cancer. But only few studies analyzed the cost of cancer treatment and its socio-economic impact on households in Kerala. Keeping in view the research gaps, the present study examined these issues in details.

KERALA AND INCIDENCE OF CANCER

Kerala's remarkable achievements in health in spite of its economic backwardness has provoked many analysts to talk about the unique "Kerala Model of Health" worth emulating by other

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

developed countries. The hall mark of Kerala model is low cost of health care, universal accessibility and availability even to the poor sections of the society. There are many socio-economic conditions unique to the states which have been postulated to make this health model possible. The widely accepted health indication viz death rate, Infant Mortality Rate (IMR) and expectation of life at birth too are far advanced than the rest of the states in India and are even comparable with developed countries. Such that in Kerala, the expectation of life has increased, infant mortality rate is very low and there is decline in death rate. Also the health awareness among the citizens of the state maintains to be at a very high level.

As per cancer registry data, in Kerala there are 974 female cancer and 913 male cancer patients per million. In one year, Kerala has roughly 35,000 new cancer cases occurs. In this 50% of cancers are in the throat, mouth and lungs in male & 15% in women caused by tobacco and alcohol habits. Actually in Kerala overall tobacco is responsible for 50% and diet for 10-20% of cancers. Breast cancer is the most common malignancy among the women in Kerala; about 30 to 35% is accounted by breast cancer. According to the data available with the Thiruvananthapuram Cancer Registry, the prevalence rate in rural areas is 19.8 per 100,000; while in the urban areas, it is 30.5 per 100,000. Because of the Kerala population eat more meat than rest of the Indian population so the incidence of colorectal cancer in Kerala is about 5.5/ 100,000. Also it leads to increased risk for large bowel cancer. Also, the incidence of thyroid and ovarian cancers is up among women in Kerala .Prostate cancer, the most common malignancy among men worldwide, is among the 10 leading cancers in Kerala.

Kerala has long been known for spectacular feats in the field of health and boasting of social development indicators comparable to developed countries. But an alarming increase in cases of killer ailments cancer, kidney and liver diseases is threatening to put its reputation in jeopardy. About 2,50,000 people in the state undergo cancer treatment with the addition of at least 42,000 every year while liver and kidney transplants are becoming common in super specialty hospitals. (krishnakumar 2016)

COST OF CANCER TREATEMENT

India is among a few affordable destination of the world for cancer treatment. It has witnessed a surge in the international patients from the US, UK , Africa ,UAE, Bangladesh, Srilanka, Mauritius etc, coming here for procedures like cancer surgery and chemotherapy. The reason being although one of the expensive treatments, in India cancer treatment is still very economical compared to developed countries. The treatment in India is at par with developed nations available almost 1-10th of what it would be in the US or UK.

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

Different types of cancer have different approaches of treatment. For some types of cancer, oncologist use radiation therapy only as a treatment approach while some other cancer types are treated through a combination of surgery, radiation, chemotherapy, hormone therapy or immunotherapy. Thus accordingly the expenses vary.

A cancer diagnosed early in first or second stage can be cure completely or comparatively lower cost than the third or advanced stage cancer that would cost much higher. The cancer treatment approach depends upon the patients age and medical history, which influences the cost.

The other treatment variability factors are,

- Drugs (Indian manufactured or imported medicines)
- Cancer Surgery: not required in all cancer cases. Some are treated through Drug therapy only.
- Chemotherapy : Type of chemotherapy performed (Standard chemotherapy, Traditional chemotherapy or Cytotoxic chemotherapy.) and number of sessions per cycle.
- Radiation Therapies : Type(Intra-operative radiation therapy [IORT], Systemic radiotherapy ,Radioimmunology therapy, Radio sensitizer or Radio protectors) and the frequency of the radiation therapy given purely based on medical condition. Over half of the cancer treatment expenses go in radiotherapy. (MedGurus n.d.)

1. COMMON CANCER PROCEDURE COSTS

Table 1: common cancer procedure costs

THERAPIES	COSTS (INR)
CHEMOTHERAPY	30,000 – 1,00000 per session
TARGETED THERAPY	20,00,000 (five to six session would cost approximately)
RADIATION THERAPY	1,50,000 per cycle
A HEAD AND NECK CANCER SURGERY	2,00000
TOTAL MASTECTOMY	About 4,50,000

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

BREAST CANCER LUMPECTOMY	About 2,00000
C.T SCAN	About 24,000

Source: secondary data

WELFARE SCHEMES FOR CANCER PATIENTS.

Cancer remains a leading cause of mortality in Kerala. Among children, though many types of cancer are curable today, the treatment is often prolonged and expensive. The patients and their families therefore face a dilemma -- the painful choice of cost versus care. Several families abandon treatment mid way, which also contributes to the high mortality rate.

CANCER SURAKSHA SCHEME

As per the estimate of Regional Cancer Centre, Thiruvananthapuram, there are 800-850 new pediatric cancer patients every year. Realizing that cancer is curable among children and that there is an urgent need to support families which are `too poor to afford treatment'; the Government of Kerala has introduced the **Cancer Suraksha Scheme** on 1-11-2008. Under this scheme, children, under 18 years, would be given free treatment for cancer through designated Government hospitals in the state. Children, under 18 years, who have been diagnosed with cancer either radiologically or on biopsy and are under treatment in the designated hospitals, shall be the beneficiaries. In case, the child completes 18 years during the course of treatment, then the benefits under the scheme shall be made available for a further period of one year.(http://www.socialsecuritymission.gov.in/index.php/cancer-suraksha-scheme1)

THALOOLAM

Children below 18 years of are eligible for this scheme. This scheme is applicable to patients belonging to families too poor to afford treatment irrespective of BPL/APL category. Maximum assistance given under this scheme is RS.50,000/- for diseases other than cancer which are lethal or fatal.

COMPREHENSIVE HEALTH CARE PROGRAMME FOR SCHEDULED TRIBES (GOVT OF KERALA)

A patient in this category is eligible for full treatment, including food and travelling expenses for himself. In one day ,an APL patient is eligible for treatment worth Rs.10,000/- and BPL patient for Rs.50,000/-.

FINANCIAL AID FROM THE SOCIETY FOR THE POOR (GOVT OF KERALA)

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

Cancer patients from low socio-economic backgrounds are helped by paying Rs.10,000/- for their treatment.

PRIME MINISTER'S NATIONAL RELIEF FUND (PMNRF)

Patients belonging to low socio economic status get financial aid from PMNRF for treatment. The maximum amount sanctioned for an individual patient is rs.2,00,000.

RASHTRIYA AROGYA NIDHI (RAN)

This scheme provides financial aid for specific investigations and treatments. Eligible amount for one patient is Rs.100000.The Government of India has provided a scale for each state-rural and urban area. The amount can be only utilized only for surgery, chemotherapy medicines, radiology scans and IP care.

CANCER PENSION

Pension is given to cancer patients after completion of treatment for supportive care. The patient has to produce a certificate from the treating doctor to that affect each year and apply to the government on the basis of this certificate. All BPL patients get a pension of Rs 200L- per month on a lifelong basis.

KARUNYA BENOVELNCE SCHEME

Under Karunya, families with income below Rs 3 lakh per annum (these would also include those above the poverty line) are given financial assistance up to a maximum of Rs 2 lakh. The ailments covered under the scheme are cancer, heart disease, kidney trouble and palliative care. For some diseases like haemophilia the assistance is up to Rs 3 lakh. The treatment under the Karunya scheme was initially provided through the government medical colleges and hospitals. But now 62 private hospitals have selected under this.

ANALYSIS OF DATA

The present study is conducted in Pathanamthitta district. The study examined the problems and cost of cancer patients in the district. The sample population is divided into two strata's such as patients in public hospitals and private hospital patients. A total sample of 40 respondents have been selected, 20 each from the two strata's.

The risk of cancer mainly occurs after 40 years. The study shows out of 40 samples both from public and private, 90% of cancer risk occurs after 30 years of age. The risk of Childhood cancer

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

is 5%. 35% of cancer occurrence among public patients is between 60 – 70 years of age but the occurrence of cancer risk is 40%.

In both public and private cases 45% have an educational qualification of high school level .Only 5% of public sector patients have no educational qualification and also 5% public sector patients completed lower primary. The important point is that none of the public sector patients have degree level educational qualification, but in the private sector patients 40% have degree level qualification.

55% of the public respondents are unemployed and remaining consists of various jobs. In the private sector, out of 20 samples 45 % are unemployed, 25% worked abroad and the remaining engaged in various other jobs. The unemployed category includes housewives and educationally unemployed.

DETAILS ON CANCER TYPES AND TREATEMENT

2. TYPES OF CANCERS

Table 2: TYPES OF CANCERS

SL.NO	CANCER TYPES	PUBLIC (%)	PRIVATE (%)
1	BREAST CANCER	6 (30%)	6 (30%)
2	HEAD AND NECK CANCER	4 (20%)	0 (0)
3	LUNG CARCINOMA	3 (15%)	2 (10%)
4	ORAL CAVITY CANCER	2 (10%)	1 (5%)
5	MULTIPLE MYELOMA	0 (0)	3 (15%)
6	LUKEMIA	0 (0)	2 (10%)
7	HEPATIC CANCER	1 (5%)	1 (5%)
8	PANCREATIC CANCER	0 (0)	1 (5%)
9	OVARIAN CANCER	0 (0)	1 (5%)
10	ENDOMETRICAL CANCER	1 (5%)	0 (0)
11	COLONCANCER	1 (5%)	1 (5%)
12	LYMPHOMA	0 (0)	1 (5%)
13	METASTASIS	2 (10%)	1 (5%)

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

	TOTAL	20	20

Source: Primary Data

Out of the total 20 respondents in the public and the private sector, breast cancer has the highest incidence(30%). 20% of the public respondents is suffering with Head and Neck cancers including Throat ,Mouth ,Tongue etc. The 15% of the private sample respondents is affected with multiple myeloma commonly called as Bone Cancer. The remaining (5%) affected with other types of cancers

3. STAGES OF CANCER PATIENTS

Table 3: STAGES OF CANCER PATIENTS

SL.NO	STAGES OF CANCER	PUBLIC (%)	PRIVATE (%)
1	1st	3 (15 %)	9 (45%)
2	2nd	7 (35%)	4 (20%)
3	3rd	4 (20%)	3 (15%)
4	4th	6 (30%)	4 (20%)
	TOTAL	20 (100%)	20 (100%)

Source: Primary Data

Out of the 20 public sample respondents, 35% were under the 2nd stage of cancer treatment. 30% were under the 4th, generally considered as the last stage of cancer. 20% were under 3rd stage and the remaining 15% were under the 1st or initial stage of cancer treatment. Out of the 20 private respondents 45% were in the 1st stage of the cancer treatment and 20% each in the second and the 4 th stage of treatment.15% of the respondents were under the 3rd stage of cancer.

4. NUMBER OF YEARS AFFECTED CANCER

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

TABLE 4: NUMBER OF YEARS AFFECTED CANCER

YEARS AFFECTED WITH CANCER	PUBLIC (%)	PRIVATE (%)
BELOW 6 MONTHS	1 (5%)	2 (10%)
6 MONTHS -1 YEAR	1 (5%)	1 (5%)
1 YEAR -2 YEARS	4 (20%)	7 (35%)
2 YEARS – 3 YEARS	3 (15%)	5 (25%)
3 YEARS – 4 YEARS	1 (5%)	0 (0)
4 YEARS – 5 YEARS	3 (15%)	2 (10%)
5 YEARS AND ABOVE	7 (35%)	3 (15%)
TOTAL	20	20

Source: Primary Data

Out of the 20 public respondents 35% of the patients are under treatment of about 5 years and above .20% were between 1 and 2 years ,15% under 2nd and 3rd years and under between 4 and 5 years. 5% is treating less than 6 months. Out of the 20 private respondents 35% of the patents are affected by cancer under 1 to 2 years.25% is between 2 to 3 years,15% is under 5 years and above.

5. TREATMENT CURRENTLY TAKING

TABLE 5: TREATMENT WHICH IS CURRENTLY TAKING.

TREATMENT AT PRESENT	PUBLIC	PRIVATE
SURGERY	0 (0)	1 (5%)
CHEMOTHERAPY	9 (45%)	9 (45%)
RADIATIONTHERAPY	2 (10%)	1 (5%)
IMMUNOTHERAPY	0 (0)	0 (0)
HORMONETHERAPY	0 (0)	0 (0)
TARGETED THERAPY	0 (0)	0 (0)

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

CHECK UP	9 (45%)	9 (45%)
TOTAL	20	20

Source: Primary Data

Out of 20 public respondents 45% each were currently taking regular checkups and chemotherapy.10% is taking radiation therapy. Out of the 20 private respondents, 45% is currently taking chemotherapy and 45% is taking regular checkups. Only 5% each is taking surgery and radiation therapy.

6. FREQUENCY OF TREATMENT AT PRESENT

TABLE 6: FREQUENCY OF TREATMENT AT PRESENT.

FREQUENCY OF TREATMENT	PUBLIC	PRIVATE
DAILY	1 (5%)	1 (5%)
7 DAYS	3 (15%)	1 (5%)
14 DAYS	3 (15%)	1 (5%)
21 DAYS	2 (10%)	3 (15%)
ONCE IN A MONTH	7 (35%)	8 (40%)
ONCE IN 3MONTH	3 (15%)	1 (5%)
ONCE IN SIX MONTHS	0 (0)	1 (5%)
ONCE IN AN YEAR	1 (5%)	4 (20%)
TOTAL	20	20

Source: Primary Data

Out of the 20 public respondents,5% have treatment daily,15% have between 7 days, another 15% have between 14 days , 10% have between 21 days, 35% treats once in a month, another 15% have treatment once in 3 months and remaining 5% have treatment once in an year. Out of

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

the 20 public respondents,40% have treatment once in a month,20% have treatment once in an year,15% have treatment between 21 days, remaining 5% each have treatment between 14 days, Daily ,Once in 3 months, once in 6 months.

7. COST OF TREATMENT AT PRESENT

A. PUBLIC HOSPITALS

TABLE 7 (a): COST OF TREATMENT AT PRESENT IN PUBLIC HOSPITALS

COST OF TREATMENT	PUBLIC HOSPITALS
NO COST	11 (55%)
0 -25000	6 (30%)
25000 -50000	1 (5%)
50000 -75000	1 (5%)
75000 -1,00000	1 (5%)
ABOVE 1,00000	0 (0)
TOTAL	20

Source: Primary Data

Out of 20 public respondents, 55% have no cost for their present treatment.30% have spend between 0 – 25000 rupees, 5% spend between 25000-50000 rupees, another 5% spend between 50000-75000 rupees and the remaining 5% spend between 75000-100000 rupees. As per the data public respondents spend less than one lakh rupees for the present cancer treatment.

B. PRIVATE HOSPITALS

TABLE 7 (b): COST OF TREATMENT AT PRESENT IN PRIVATE HOSPITALS

COST OF TREATEMENT	PRIVATE HOSPITALS
NO COST	4 (20%)
0-25000	3 (15%)
25000-50000	2 (10%)
50000-75000	2 (10%)

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

75000-100000	1 (5%)
100000 and above	8 (40%)
TOTAL	20

Source: Primary Data

Out of the 20 private respondents,40% had spend more than 1,00,000 rupees for their present treatment.20% have no cost at presents because they only have regular checkups.15% spends between 0-25000 rupees,10 % spends between 25000-50000 rupees and another 10% spends between 50000-75000 rupees.5% had spend between 75000-100000 rupees.

8. TREATMENT TAKEN AT EARLIER

TABLE 8: TREATMENT TAKEN EARLIER

TREATEMENT	PUBLIC	PRIVATE
SURGERY	5 (25%)	5 (25%)
CHEMOTHERAPY	2 (10%)	3 (15%)
RADIATION THERAPY	4 (20%)	0 (0)
IMMUNOTHERAPY	0 (0)	0 (0)
HORMONE THERAPY	0 (0)	0 (0)
TARGETED THERAPY	0 (0)	0 (0)
SURGERY + CHEMOTHERAPY	3 (15%)	1 (5%)
SURGERY+RADIATION THERAPY	1 (5%)	1 (5%)
SURGERY+CHEMO+RADIATION	0 (0)	4 (20%)
CHEMO+RADIATION	1 (5%)	0
CHECK UP and MEDICINES	4 (20%)	6 (30%)
TOTAL	20	20

Source: Primary Data

Out of the 20 public respondents 25% had taken surgery as an early treatment.20% each had taken Radiation therapy and checkups and medicines, 15% had taken surgery and chemotherapy, 10% had taken chemotherapy. Only 5% had taken surgery and radiation therapy. Out of 20 of the

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

private respondents 30% had taken checkups and medicines as a part of their treatement.25% had taken surgery.20% had taken surgery ,chemotherapy and radiation as part of their treatement.15% had taken chemotherapy and 5 % each had taken surgery with chemotherapy and surgery and radiation therapy.

9. COST OF TREATMENT WHICH HAD TAKEN EARLIER

A. PUBLIC HOSPITALS

TABLE 9 (a): COST OF EARLY TREATMENT IN PUBLIC HOSPITALS

COST OF TREATMENT	PUBLIC HOSPITALS
NO COST	10 (50%)
0-25000	1 (5%)
25000-50000	6 (30%)
50000-75000	0 (0)
75000-100000	0 (0)
ABOVE 1 LAKH	3 (15%)
TOTAL	20

Source: Primary Data

Out of the 20 public respondents 50% have no cost for early treatments,30% had spend in between 25000-50000 rupees followed by 15% spends above one lakh rupees.5% spends below 25000 rupees for their early treatment for cancer.

B. PRIVATE HOSPITALS

TABLE 9 (b): COST OF EARLY TREATEMENT IN PRIVATE HOSPITALS

COST OF TREATMENT	PRIVATE HOSPITALS
NO COST	5 (25%)
0-25000	0 (0)
25000-50000	1 (5%)
50000-75000	1 (5%)

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

75000-100000	0 (0)
ABOVE 100000	13 (65%)
TOTAL	20

Source: Primary Data

Out of the 20 private respondents 65% spends more than one lakh rupees for their early treatment for cancer.25% have no cost of treatment .5% each had spend between 25000-50000 rupees and 50000- 75000 rupees.

10. COST OF MEDICINES FOR ONE MONTH

TABLE 10: COST OF MEDICINES

COST OF TREATEMENT	PUBLIC	PRIVATE
NO MEDICINES	5 (25%)	5 (25%)
ZERO COST	4 (20%)	0 (0)
BELOW 1000	6 (30%)	2 (10%)
BETWEEN 1000 TO 10000	4 (20%)	7 (35%)
10000 AND ABOVE	1 (5%)	6 (30%)
TOTAL	20	20

Source: Primary Data

Out of the 20 respondents in public, 30% have to spend below 1000 rupees for their medicines for one month.25% have no medicines and 20% have zero cost of medicines under various schemes. Another 20% have to spend in between 1000 and 10,000 for their medicines.5% have to spend more than above 10,000 rupees as their cost of medicines for one month. Out of 20 private respondents, 35% have to spend in between 1000 and 10,000 rupees to meet their medicines for one month.

11. TRANSPORTATION COST (FOR ONE TIME)

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

TABLE 11: COST OF TRANSPORTATION (FOR ONE TRIP)

COST OF TRANSPORTATION	PUBLIC	PRIVATE
ZERO COST	0	0
100 – 1000	10 (50%)	5 (25%)
1000 -10000	10 (50%)	12 (60%)
10000 AND ABOVE	0	3 (15%)
TOTAL	20	20

Source: Primary Data

In the case of cost of transportation, out of 20 public respondents 50% spends in between 100 and 1000 for one trip and the remaining 50% spends in between 1000 and 10000 for one trip. Out of the 20 private respondents 60% spends in between 1000 and 10000 for one trip.25% spends in between 100 and 1000 for a trip and 15% spends above 10000 for a trip as transportation cost.

12. BENEFICIARY SCHEMES

TABLE 12: BENEFICIARY SCHEMES

SL.NO	SCHEMES	PUBLIC	PRIVATE
1	KARYUNA BENOVELENCE SCHEME	11 (55%)	0
2	HEALTH CARD/INSURANCE	4 (20%)	1 (5%)
3	OTHERS	1 (5%)	1 (5%)
4	NO SCHEMES	4 (20%)	18 (90%)
	TOTAL	20	20

Source: Primary Data

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

Out of the 20 public respondents 55% have treatment under Karyuna Benevolence Scheme .20% have health insurance and another 20% have no schemes.5% have cost relaxation under from chief ministers funds. Out of the 20 private respondents, 90% have no cost relaxation from any schemes.5% have health insurance and 5% have other schemes like ex. service health card.

13. DEBT FROM BANK, INDIVIDUALS AND NON-BANKING FINANCIAL SECTOR.

TABLE 13: DEBTS TAKEN FOR CANCER TREATMENT.

DEBTS FROM	PUBLIC	PRIVATE
BANKS (20)	1 (5%)	1 (5%)
INDIVIDUALS(20)	10 (50%)	5 (25%)
NON BANKINING INSTITUTIONS(20)	1 (5%)	1 (5%)

Source: Primary Data

The study founded that more than 50 % of public respondents were taken loans from banks, individuals and other financial institutions for meeting their cost of treatment.25% of private respondents were in debts due to fund the cost for cancer treatment.

14. TOTAL SPENDING FOR CANCER TREATMENT

TABLE 14: TOTAL SPENDINGS FOR CANCER TREATMENT

TOTAL SPENDINGS	PUBLIC	PRIVATE
BELOW 1LAKH	5 (25%)	0
1LAKH -3 LAKHS	6 (30%)	2 (10%)
3 LAKHS -6 LAKHS	8 (40%)	10 (50%)
6 LAKHS -9 LAKHS	1 (5%)	5 (25%)
9 LAKHS -12 LAKHS	0	2 (10%)
12 LAKHS – 15 LAKHS	0	0
15 LAKHS AND ABOVE	0	1 (5%)

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

TOTAL	20	20

Source: Primary Data

Out of the 20 public respondents 40% had to spend between 3 to 5 lakhs for the cancer treatement.30% spend between 1 to 3 lakhs and 25% spends below one lakhs .5% of the public patients had to spend 6 to 9 lakhs for the cancer treatment. Out of the 20 private respondents,50% had to spend between 3 to 6 lakhs for the cancer treatement.25% had spend 6 to 9 lakhs .10% had spend 9 to 12 lakhs and another 10 % had spend 1 to 3 lakhs for the treatement.5% had spend above 15 lakhs and above for the treatment.

15. DEPLETED FINANCIAL STABILITY

TABLE 15: DEPLETED FINANCIAL STABILITY

DEPLETION OF FINANCIAL STABILITY	PUBLIC	PRIVATE
DEPLETED	15 (75%)	9 (45%)
NOT MUCH DEPLETED	1 (5%)	6 (30%)
NOT DEPLETED	4 (20%)	5 (25%)
TOTAL	20	20

Source: Primary Data

Out of the 20 public respondents 75% have financially depleted with the cancer disease and 20% are not affected financially.5% have less affected with the cancer treatment. Out of the 20 private respondents 45% had financially depleted with cancer treatment.30% is less depleted with treatment and 25% are not financially depleted with cancer treatment.

ANALSIS ON SOCIAL AND PSYCHOLOGICAL BEHAVIOUR OF CANCER PATIENTS

16. GET COUNSELING AS A PART OF CANCER TREATMENT

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

TABLE 16: GET COUNSELING AS A PART OF CANCER TREATMENT

COUNSELING	PUBLIC	PRIVATE
YES	12 (60%)	8 (40%)
NO	8 (40%)	12 (60%)
TOTAL	20	20

Source: Primary Data

Out of the 20 public respondents 60% get counseling as a part of the treatment and 40% haven't get any counseling. Out of the 20 private respondents 60% doesn't get any counseling and 40% get counseling as a part of their treatment.

17. ATTITUDES OF RELATIVES TOWARDS CANCER PATIENT

TABLE 17: ATTITUDES OF RELATIVES TOWARDS CANCER PATIENT

ATTITUDES	PUBLIC	PRIVATE
SUPPORTIVE	16 (80%)	15 (75%)
SYMPATHETIC	3 (15%)	3 (15%)
NOT SUPPORTIVE	1 (5%)	2 (10%)
TOTAL	20	20

Source: Primary Data

Out of the 20 public respondents 80% of the patients relatives are very supportive to the patients condition.15% of patients relatives are sympathetic to their conditions. And the remaining 5 % of patients relative are not supportive. Out of the 20 private respondents, 75% of patients relatives are supportive to their condition.15% of the patients relatives are sympathetic towards their condition and the remaining 10 % of patients relatives are not supportive.

18. MORAL SUPPORT FROM NEIGHBOURS TOWARDS CANCER PATIENTS

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

TABLE 18: MORAL SUPPORT FROM NEIGHBORS

MORAL SUPPORT	PUBLIC	PRIVATE
YES	16 (80%)	18 (90%)
NO	4 (20%)	2 (10%)
TOTAL	20	20

Source: Primary Data

80% of the public respondents got moral support from the neighbors and 20% doesn't get any moral support.90% of the private respondents got moral support and the remaining 10% doesn't get any support from their neighbors.

19. MORAL OR FINANCIAL SUPPORT FROM LOCAL GOVERNING BODIES

TABLE 19: MORAL AND FINANCIAL SUPPORT FROM LOCAL GOVERNING BODIES

MORAL/FINANCIAL SUPPORTS	PUBLIC	PRIVATE
YES	7 (35%)	5 (25%)
NO	13 (65%)	15 (75%)
TOTAL	20	20

Source: Primary Data

Out of the 20 public respondents of cancer patients, 35% got moral and financial support from their local governing bodies and 65% doesn't get any support. Out of the 20 private respondents only 25% get moral and financial support from the local governing bodies, but 75% doesn't get any supports.

20. PATIENTS SATISFACTION WITH DOCTOR AND NURSES

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

TABLE 20: PATIENT'S SATISFACTION WITH DOCTOR AND NURSES

SATISFACTION	PUBLIC	PRIVATE
SATISFIED	20 (100%)	20 (100%)
NOT SATISFIED	0 (0)	0 (0)
TOTAL	20	20

Source: Primary Data

For the question, Are you satisfied with the doctor and nurse who treating you? Had a positive approach from all the respondents .Both public and private patients are 100% are satisfied with doctors and nurse.

21. FAMILY MEMBERS SUFFERING WITH CANCER

TABLE 21: FAMILY MEMBERS SUFFERING WITH CANCER

FAMILY MEMBERS SUFFERING WITH CANCER	PUBLIC	PRIVATE
YES	6 (30%)	5 (25%)
NO	14 (70%)	15 (75%)
TOTAL	20	20

Source: Primary Data

Out of the 20 public respondents 70% of the patient's relatives or family members are suffering with cancer.30% of patient's family members is suffering with cancer. Out of the 2o private respondents 75% of the patient's family patients are suffering with cancer and the remaining 25% is not affected with cancer.

22. ADDITION/ CONSUMPTION OF ALCOHOL AND TOBACCO PRODUCTS

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

TABLE 22: ADDITION TO ALCOHOL AND TOBACCO PRODUCTS

ADDICTED TO ALCOHOL AND TOBACCO PRODUCTS	PUBLIC	PRIVATE
YES	7 (35%)	4 (20%)
NO	13 (65%)	16 (80%)
TOTAL	20	20

Source: Primary Data

65% of the public participants are not addicted to alcohol and other tobacco products.35% was addicted to alcohol and other tobacco products. Out of the 20 private respondents 80% were not addicted and 20% were addicted to the alcohol and tobacco products.

FINDINGS OF THE STUDY

Cancer is the one of the most occurrences in non communicable diseases in Kerala. There are global treatment facilities in many hospital including Regional Cancer Centers, Government Hospital (medical college), District Cancer Centers and many private hospital .But the cost of treatment varies between hospital to hospitals irrespective of cancer medicines and treatments. The study attempted to find and compare the cost differences along with considering the socio-economic background of the samples.

- According to the study, out of the total respondents 90% of cancer occurs above the age of 40 years.
- There is an emerging risk of childhood cancer.
- 35% of cancer risk had occurred between 60-70years of age in public respondents and 40% of cancer risk had occurred between 60-70 years of age in private respondents.
- The gender status shows that 55% of females and 45% males are affected with cancer in both public and private.
- 95% of public respondents are literate and 5% is illiterate.45% had completed their high school education and 15% had attained higher education.
- 100% of private respondents are literate and 40% have completed high school qualification.40% are graduates and remaining 20 have upper primary and higher secondary education.

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

- The marital status shows,80% of public patients are married followed by 15% of widowed and 5% remains single.85% of the private respondents are married followed by 15% of widowed.
- As per the occupational status 55% of public respondents and 45% of the private respondents are educationally unemployed.
- Out of the 40 samples, 13 types of cancers were found. Breast cancer (30%), Head and Neck cancer (20%), Lung cancer (15%), Hepatic cancer and endometrial cancer constitutes the remaining, are among the public respondents. In private respondents, Breast cancer (30%), Multiple Myeloma (15%), lung cancer (10%), Leukemia (10%), oral cavity cancer Hepatic cancer, colon cancer, Lymphoma and Metasis constitute the remaining.
- Out of public respondents, 35% were under second stage of cancer followed by 30% were under fourth stage (last stage)of cancer. Out of the private respondents, 45% were under first stage of cancer treatment.
- 35% of the public respondents are affected with cancer more than five years and above and remaining is between 6 months to five years.35% of the private respondents is affected with cancer between 1 to 2 years and the remaining spreads between 6 months to more than five years.
- According to the study, the common cancer treatments were checkups, surgery, and chemotherapy and radiation therapy.
- More than half of the public respondents (55%) have no costs for present treatment and the remaining 45% have cost less than 1lakh.
- Only 20% of the private respondents have no cost for present treatment (only checkups) and remaining 80% have costs that vary between 25,000 to 25, 000, and 00.
- For the cancer medicines, public respondents had to pay less than 10000 rupees and private respondents had to pay between 1000 to above 10000 rupees.
- According to the study there is transportation cost for cancer treatment. 50% of public respondents had to spend between 100 -1000 and 50% had to spend above 10000. 25% of the private spends between 100-1000, 75% spends above 10,000 as transportation cost.
- Cancer patients have a variety of beneficiary schemes including Karyuna benevolence fund, cancer pension scheme, Health insurance etc.
- 90% of private respondents have no beneficiary schemes yet they have to pay full cost for treatment.80% of public respondents were cost relaxation under karyuna benevolence fund and health insurance schemes.
- The study found that more than 50 % of public respondents were taken loans from banks, individuals and other financial institutions for meeting their cost of treatment.25% of private respondents were in debts due to fund the cost for cancer treatment.

ISSN: 2455-8834

Volume:04, Issue:02 "February 2019"

- According to the study, 25% of public had spent below 1 lakhs followed by30% spend in between 1-3 lakhs.40% spend between 3-6 lakhs.50% of the private had spend between 3-6 lakhs followed by 25% spends between 6-9 lakhs.10% spends 1-3 lakhs and another 10% spends 9-12 lakhs for the cancer treatement.5% spends above 12 lakhs.
- 75% of public were have a depleted financial stability with the cancer treatment and 45% of the private had depleted financial stability with the cancer treatment.
- Almost more than half of the public patients had got counseling as a part of their treatment. Only 40% of private had got counseling as a part of their treatment.
- According to the study 85% respondents believes that they will survive cancer.
- The study founded that there is very little moral and financial support from local self governing bodies towards cancer patients.
- 100% of respondents are satisfied with the attitudes and behavior of treating doctors and nurses
- 35% of the public respondents were addicted to alcohol and tobacco products and 20% private respondents were addicted to alcohol and tobacco products.

SUGGESTIONS

Firstly, there should be proper awareness on health and healthy diets on individuals in our society. There should have early diagnosis centers for cancer maybe that ought to set up in every primary health centers. It would be beneficial to people to detect the disease at an early stage and thereby reduce the impact of cancer. Government should set up more Regional Cancer Centers and research institute and provide global treatment facilities at a minimized cost. Free and Compulsory health checkups should provide to all in all government hospitals. Government should put slabs on cost of treatment in private hospital and make available all medicines within the territory of our country. Encourage more research on medicines and treatments with the help of foreign nations. Take away the APL/BPL criteria from treatment and consider all as equal. Health is a basic necessity and basic right. It is the responsibility of the state should provide the rights equally. Provide more awareness on dietary habits and should include in school curriculum. Impose cent % tax on alcohol and tobacco products even it is difficult to ban by the government. Set up a Health Committee in local self governing bodies and they should visit and enquire the needs of cancer patients and cancer survivors. Banks should provide Health Loans and health insurances at a lower rate of interest. Set up more cancer registries in Kerala.

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