

Food Practices and Dietary Intakes of Cancer Patients in Raipur City

Abhaya R. Joglekar^a, Monika Sahu^b

^aProfessor, Department of Home Science, D B Girls PG College, Raipur.

^bAssistant Professor, Department of Home Science, Shri Kuleshwar Mahadev Government College Gobra Nawapara, Raipur

Corresponding authors: Monika Sahu

Assistant Professor, Department of Home Science, Shri Kuleshwar Mahadev Government College Gobra Nawapara, Raipur

Abstract

It has been observed from previous literature that diet plays an important role in treatment of cancer. This type of studies had been conducted in other states. In our study we will observe the food practices and dietary intake of cancer patients in Raipur city. 50 subjects were interviewed with the help of questionnaire. Information based on family background, nutritional status, dietary intake and clinical symptoms of diseases were collected and analyzed.

Data on dietary intake was obtained using 24 hr. recall method. Nutritive value was calculated by using ICMR standards and their average nutritive value was assessed. The result indicate that cancer was less prevalent in males 44% than female 56%.

It was found that protein, energy, iron and B-Complex vitamin intake were much below the recommendation. Whereas intake of fat and vitamin C were adequate. Lack of awareness and knowledge about promoters and inhibitors of food for cancer was also obtained and was concluded that faulty food habits also enhanced the effect of chemotherapy and recovery from the disease.

Apart from this, nutrition counseling was imported to the patients to observe the effect of antioxidants and vitamins supplements.

Keywords : Cancer, food practices, nutritive value, nutritional counseling, antioxidants

INTRODUCTION

Cancer is among the important cause of death in the United States with over 1.8 million newly diagnosed cases expected for 2018. Within that group, a cancer diagnosis, estimated for 40% of all cancer diagnoses, that connected to being overweight and obese. The patients weighted both before and after has a significant impact on the diagnostic and clinical result. Further both overweight and underweight patients receiving chemotherapy and other cancer treatments are at greater risk for treatment-related side effects, such as loss of appetite oral mucositis, nausea, vomiting, diarrhea, xerostomia, and dysphagia, dysgeusia which can in turn modify dietary habits.

Several Organization provide patients with access to dietary guidelines for cancer patients, including the American Cancer Society and medical centers such as Memorial Sloan Kettering Cancer center which provide a variety of dietary

recommendations to ensure patients are sufficiently nourishment during their cancer treatment. of particular concern is ensuring patients consume sufficient calories and protein, as well as vitamins, minerals and other micronutrients.

Nutritional guidelines during cancer treatment

Here are some overall nutrition recommendations for people receiving cancer treatment:

- **Maintain a healthy weight.** For many people, this means avoiding weight loss by getting sufficient calories every day. For people who are obese, the result could be weight loss. consult your doctor to determine whether you should attempt to weight loss during therapy. It may be better to wait until after treatment so that you have all the nutrition requirement to stay strong. If you do try to lose weight during treatment, it should be moderate, meaning only about a pound a week.
- **Get vital nutrients.** These include protein, fat carbohydrates, vitamin, minerals and water.
- **Try to be as active as you can.** For example, walk every day. If you sit or sleep too much, even if you are not gaining weight, you may lose muscle mass and increase in body fat.

Role of Antioxidants in cancer treatment

- Antioxidants are a conspicuous first-line and are able to slow all major steps in the process of free radical induction of cancer. Anti-oxidants also can induce cancer cells to kill themselves called apoptosis, or cell suicide and can boost aspects of immune responses that can limit metastasis and help to eliminate some cancer cells. Sizable epidemiological literature indicates that a diet rich in fruits and vegetables that contains high amount of anti-oxidant (vitamin c, B-carotene, and bioflavonoid. In humans, some or the more carefully done studies have reported that vitamin E, beta-carotene and selenium decrease the incidence lung and stomach cancer, that selenium supplements decrease both the incidence and death rate of cancer in general) by half, and that vitamin E supplements decrease the incidence of prostate cancer.
- Not all studies involving anti-oxidants produce similar results study variation may include the type of anti-oxidants used, amount of the supplements, duration of treatment, inclusion criteria for the study and many other aspects of cancer. Long term studies, in which a life time of anti - oxidant supplements is studied with regard to the incidence and progression of various cancer are not available.

OBJECTIVES

To collect general information regarding the patients. To evaluate their food practices and dietary intake. To study the nutritional status of the patients. To give diet counseling to the patients. To study the impact of diet counseling of patient's health.

HYPOTHESES

It was hypothesized that the nutritional status of cancer patients will enhance significantly due to three month of antioxidant effect. Impact of nutritional counseling will significantly modify lifestyle pattern of cancer patients. The incident of cancer patients will show significant variation on the basis of socio-demographic factor. It

was hypothesized that the insufficient knowledge of nutrition among the cancer patients.

MATERIALS AND METHODS

The study was conducted on patients visiting AIIMS hospital in Raipur city. 50 patients both the sex suffering from cancer.

MATERIAL

Sample Covered

In this work samples were collected randomly. Among them some were working and non working. They were at different stages of this disease.

Sample Size

50 patients were selected for the study. Some patients were already registered in the hospital and some visited the hospital for the first time on the recommendation of their previous hospital where they were taking treatment.

Data collection

The data was collected by questionnaire come interview schedule during-

a) General information schedule

Information regarding age, sex, family size and Types of family, education status, occupation etc. was collected.

b) Period of study

The duration of study was 6 months in this period information regarding dietary intake and other related problem of cancer patients was collected.

METHODOLOGY

Anthropometrics Measurement The pattern of growth and physical state of the body through genetically determined are profoundly influenced by diet and nutrition. Hence anthropometrics measurement is a useful criteria for assessing nutritional status.

However, if the body measurements are to be used for assessing human nutrition it of measurement are essential. In the present work following measurements are used.

(a) Height (cm)

The Height was determined by Tape" The subjects were made to stand straight on a flat floor after removing shoes and their height was measured.

(b) Weight (kg)

Weight is the simplest measurement of growth and nutritional status of growth weight of the patients was detected by using weighing machine which was accurate and reliable. To maintain standardization patients were asked to remove their shoes before standing on the weighting machine.

(c) Questionnaire method

In this method individual assessment of the person was done. Set of questions were asked to the patients. A brief format of the questionnaire is as follows.

(i) General information

(ii) Anthropometry

(iii) Family History

(iv) Habits

(v) Medical History

(vi) General Health Information

(vii) Food Habits

(d) Dietary Survey

Dietary survey is the method to find out the food consumption of the people in their daily routine. It constitutes an essential part or any study to assess the nutritional status of individual or group. It provides essential information regarding the nutrient intake, source of nutrient, food habits, attitudes and awareness of people suffering from cancer.

In this survey, questions were asked about the likes and dislikes of food, their daily nutrient intake and type of food they consume and also about the restrictions if they follow any.

(i) Assessment of food consumption

This was done by 24 hour recall method.

(ii) Calculation of nutritive values

The collected data was converted into uniform terms of weight and their nutritive value and then calculated by mean of appropriate food consumption table (Indian Food Composition Tables 2017).

(iii) Comparison with ICMR

The total nutrient intake was calculated and compared with that recommended by ICMR (2020).

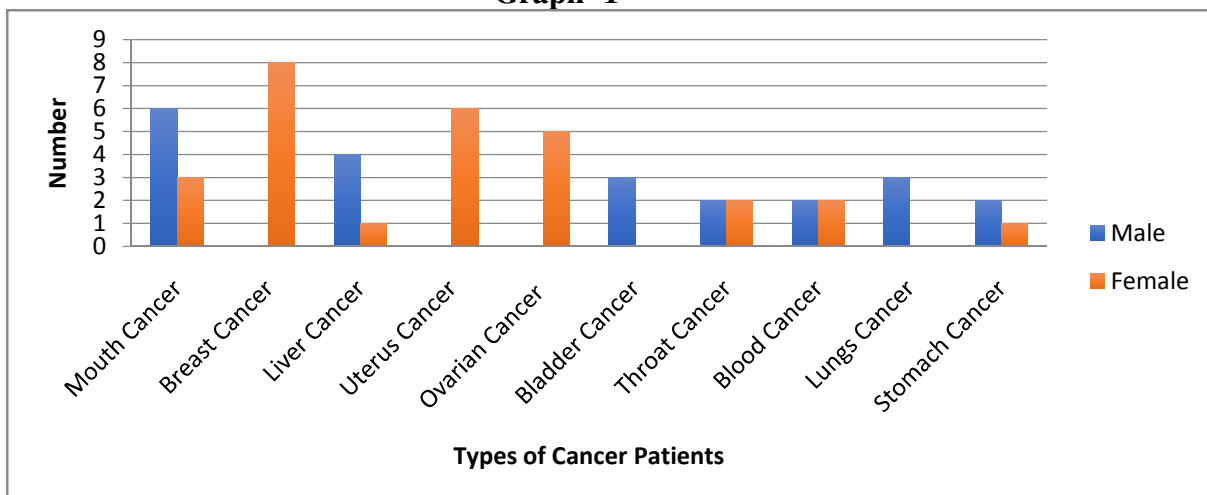
RESULTS AND DISCUSSION

Table NO. 1

Distribution of 50 individuals selected for present study

S.No.	Types of cancer patient	Sex	
		Male	Female
1	Mouth Cancer	6	3
2	Breast Cancer	-	8
3	Liver Cancer	4	1
4	Uterus Cancer	-	6
5	Ovarian Cancer	-	5
6	Bladder Cancer	3	-
7	Throat Cancer	2	2
8	Blood Cancer	2	2
9	Lungs Cancer	3	-
10	Stomach Cancer	2	1
	Total	22 (44%)	28 (56%)

Graph -1



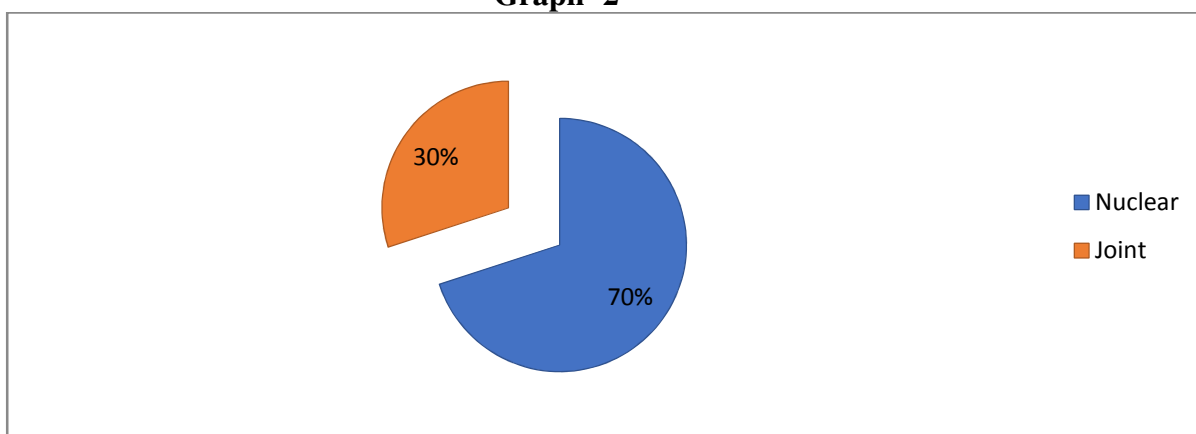
- Shows the distribution of selected cancer patients. Cancer was found to be more common in females (56%) than male (44%).

Table No. 2

Distribution showing Types of family

Types of Family	Number	Percent (%)
Nuclear	35	70
Joint	15	30
Total	50	100

Graph- 2

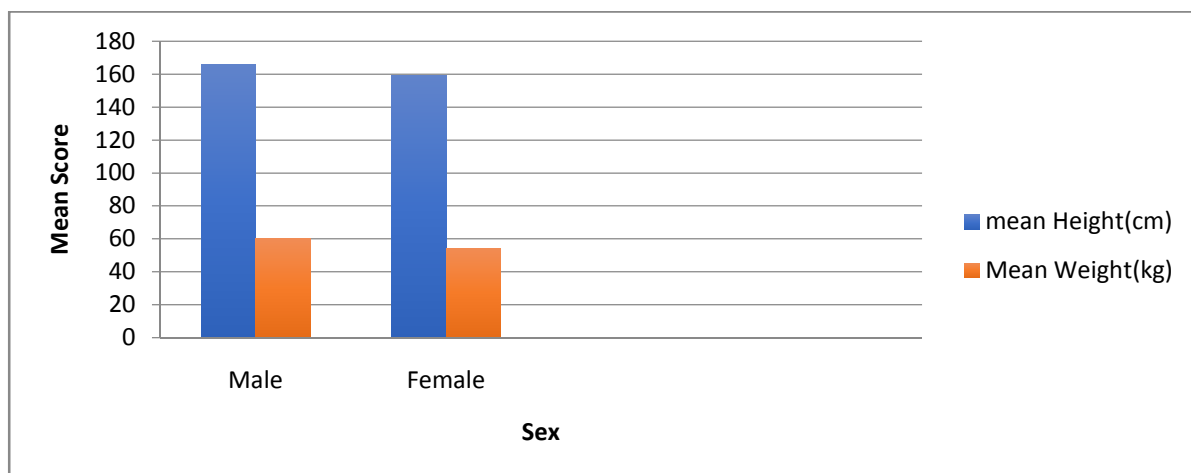


- Show the cancer incidence was higher among the nuclear family (70%) and this was followed by joint family (30%). This may be associated with higher stress pattern of living and increased responsibilities among the members of nuclear family.

Table No. 3
Mean value of Height(cm) and Weight(kg) of Cancer Patients

Sex	Mean Height(cm)	Mean Weight(kg)
Male	166	60.05
Female	159	54.25
Both	162.5	57.15

Graph- 3



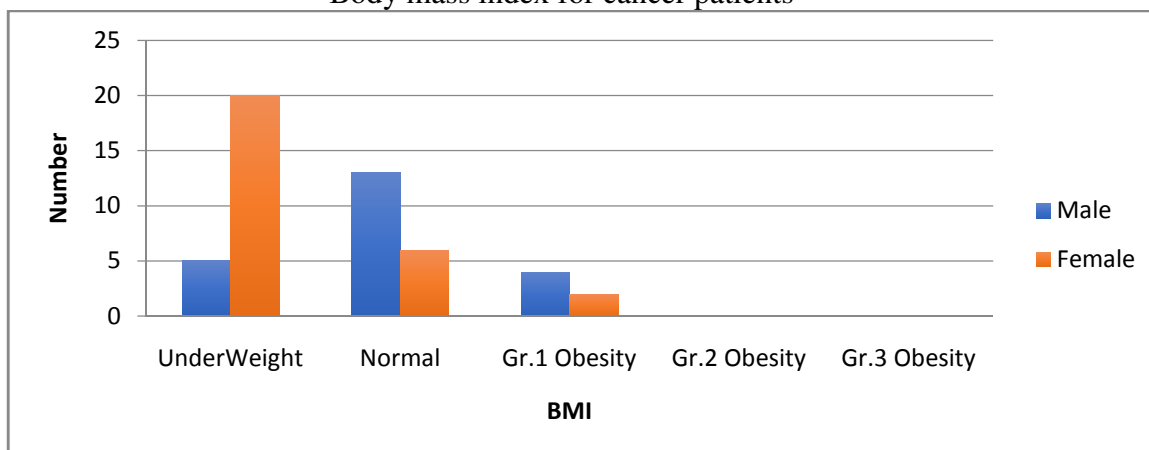
- Show the average height and weight of cancer patients. The data shows that the average height of the cancer patients was 166 cm in males and 159 in females, and the average weight of the male and female cancer patients was 60.05kg and 54.25 kg respectively.

Table No. 4
Body mass index for cancer patients

Remark	Body mass index	No. of male = 22	No. of female = 28	Total	Percentage(%)
Under Weight	<18.5	5	20	25	50
Normal	18-24.9	13	6	19	38
Grade 1 Obesity	25-29.9	4	2	6	12
Grade 2 Obesity	30-39.9	-	-	-	
Grade 3 Obesity	>40	-	-	-	

According to Antia – 10

Graph -4
Body mass index for cancer patients



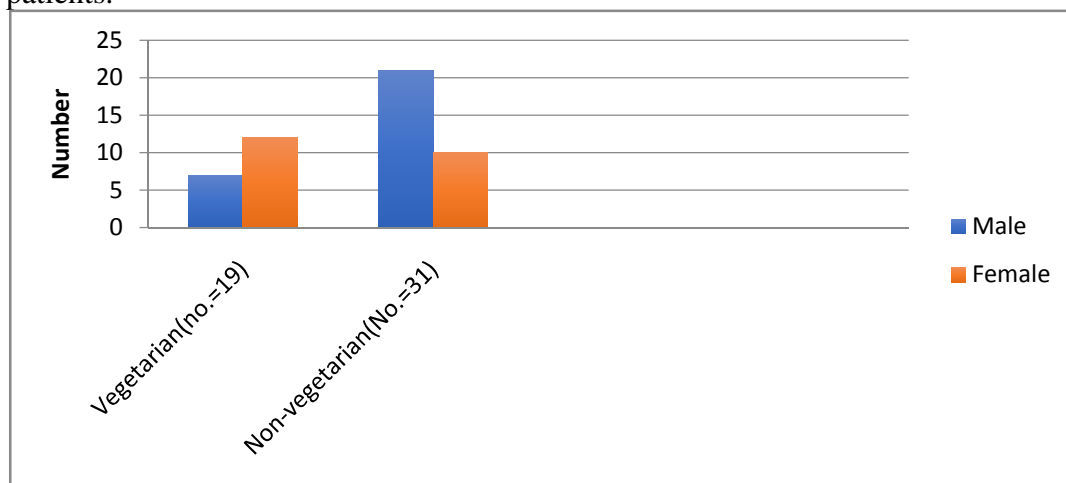
- Show the BMI of the cancer patients. It was observed that 25 patients were under weight out which 5 were male and 20 were female. The normal BMI score for patients was 19 Out which 13 were male and 6 were female and the Grade I obesity was 6 patients out which 4 were male and 2 were female.

Table No. 5
Distribution showing the vegetarian / Non vegetarian patients

Sex	Vegetarian No. of patients =19	Non-vegetarian No. of patients =31
Male	7	21
Female	12	10
total	19 (38%)	31 (62%)

Graph -5
Distribution showing the vegetarian / Non-vegetarian patients

- Show the distribution of eating habit of selected cancer patients.



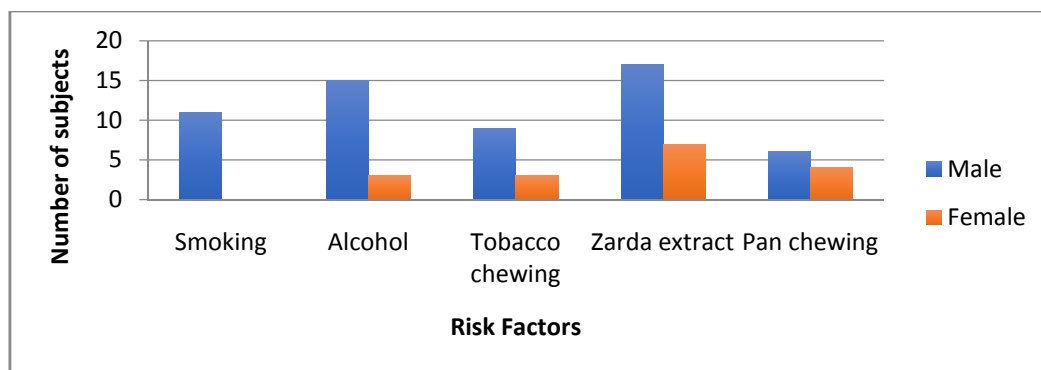
Among study participants majority were non-vegetarian that is 62% out of which 42% were males and 20% were females respectively.

The vegetarian were 38% out of which 14% were males and 24% were females respectively.

Table No. -6
General risk factor of the experimental subject

S.No.	Risk Factor	Experimental			
		Male (no. =22)	%	female (No.=28)	%
1.	Smoking	11	50.00	-	-
2.	Alcohol	15	68.18	3	10.71
3.	Tobacco Chewing	9	40.90	3	10.71
4.	Zarda extract	17	77.27	7	25.00
5.	Pan Chewing	6	27.27	4	14.28

Graph- 6
General risk factor of the experimental subject

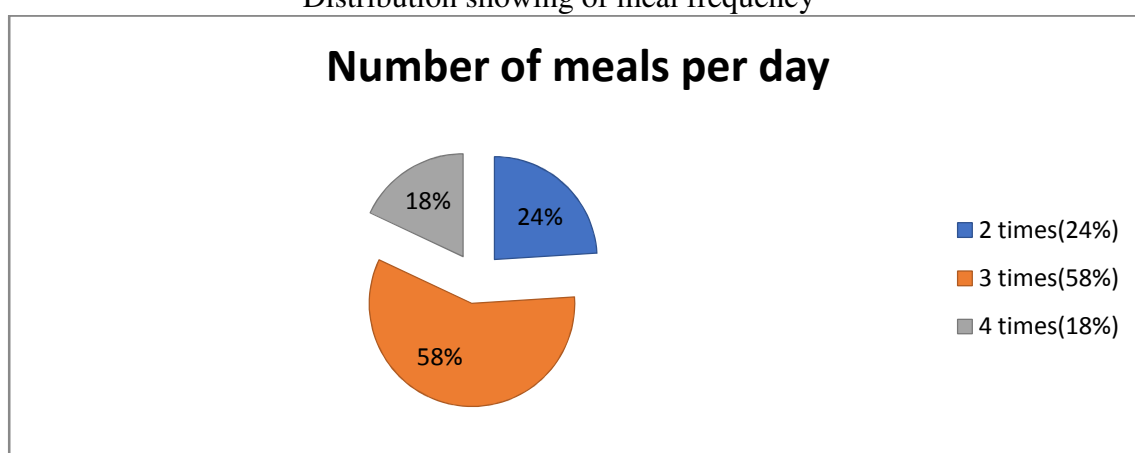


- A total No. of 50 cancer patients were randomly selected for this study. Information's on the risk factors associated with cancer indicated that among the male subject, 50% were smokers and 68% also consumed alcohol. As expected, among the woman subjects there was no incidence of smoking. Among the male 40.90% were consumed tobacco and 77.27% were consumed zarda (tobacco extract) . The incidence of pan chewing in males was 27.27% while in contrast, most of the female were away from known risk factors. However among them 10.71% consumed Alcohol and Tobacco and 25% consumed zarda and 14.28%them were known to chew pan.

Table No. -7
Distribution showing of meal frequency

No. of meal per day	Total no.	Percentage (%)
2 times	12	24
3 times	29	58
4 times	9	18

Graph- 7
Distribution showing of meal frequency

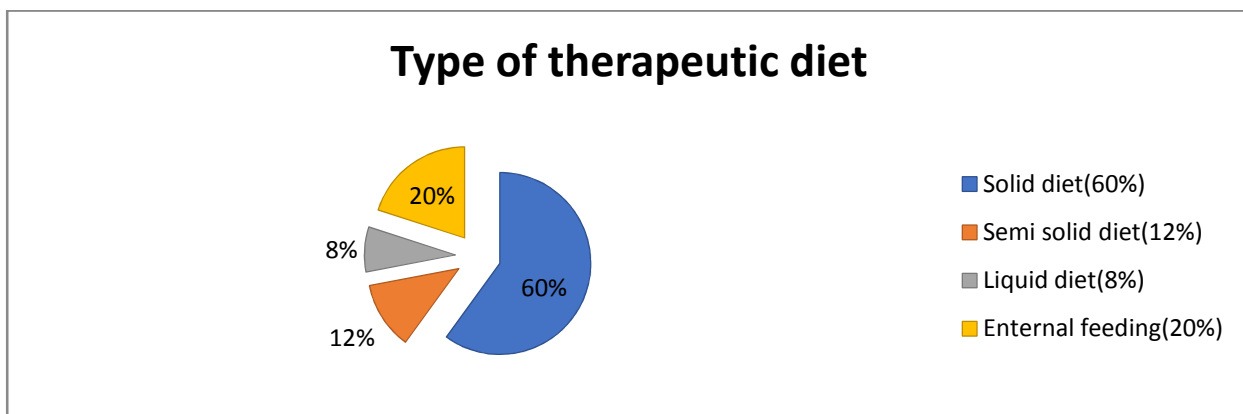


- Shows the distribution of the subject on the basis of meal frequency. It was found that 24% patient take 2 times meals daily 58% take were 3 times daily and 18% were found to take 4 times meal daily.

Table No. -8
Nutritional status in cancer patient

Type of therapeutic diet	No. of patient =50	Percentage (%)
Solid diet	30	60
Semi solid diet	6	12
Liquid diet	4	8
Enternal feeding	10	20

Graph- 8
Nutritional status in cancer patient



- Most of the patient were in advanced stage of disease, Solid diet was consumed by majority of patient (60%) and semisolid diet 12%, where only few took liquid diet 8% and enteral feeding 20%.

SUMMARY AND CONCLUSION

The investigation of cancer patient attending AIIMS hospital in Raipur City to elicited information on food practices and dietary intake of 50 patients. It also gathered information on family background, nutritional status and clinical symptoms of disease.

The results indicate that cancer was less common in males 44% than Females 56%.

The average height of cancer patients was 166 cm in males and 159 cm in females. The average weight of the patients was 60.05 kg in males and 54.2 kg in females.

The BMI of the cancer patients. It was found 25% patient were under weight. The normal BMI score for patients was “19” and the Grade One obesity was 6 patients.

Majority of patients were non vegetarian 62% while 38% were vegetarian cause of the disease in the present study.

It was found that the intake of food was inadequate and the awareness and knowledge about promoters and inhibitors of food for cancer was lacking. Faulty food habits was the major factor for increased experiences of side effects among patients which in turn resulted in delayed recovery from the disease.

In order to give the nutritional knowledge to the patients, a nutritional counseling was also done. The importance of anti-oxidant was total to them and some advices were given regarding proper food intake.

References

Anita, F.P. (1984) clinical dietetics and nutrition 330 2nd edition

Berg, M.G.D. and Rasmussen, E. L. (2010): Comparison of the effect of individual dietary counselling and standard nutritional care on Weigh loss in patients with Head 2 Neck cancer undergoing radiotherapy, British Journal of nutrition, 2010, 104(6), 872-877

Capra, S. and Ferguson, M. (2001),: Impact of nutrition Intervention outcomes nutrition issues for patients, Journal of science Direct, Nutrition 17 (19), 763-772

Chlebowski,R.T.Blackburn,G.L.Hoy,M.k.et.al,Survival analyses from the women's Intervention Nutrition study (WIHS) evaluating dietary food reduction and breast cancer outcome. 2008 (cross ReF) [Google scholar]

Conigliaro,T.Lindsay,M.Boyce,Carlos,A.Lopez,et al,food intake during cancer therapy:a systematic review.Am J clin oncol.pmc 2021 nov 1.

D, Groot S, Vreeswi J.K MPG, wetters MJP, et al. The effects of short-term fasting on toleranceto (neo) udJuvent chemotherapy in HER2 negative breast cancer patients BMC cancer. (2015) (PMC free article)pub med) (cross Ref) (google scholar)

Gopalan, C. Rama Sastri BV. And Balsubramant S.C. Nutritive value of India food (NIN 2004).

ICMR Nutrient Requirements and Recommended Dietary Allowances for Indians A report of the expert group of Indian council of medical Research, 1991, 129

Isenring,E.A. and Baver J.D. (2007) Nutrition support using the American Dietetic Association medical nutrition therapy protocol for radiation oncology patients improvedietary intake Compared with standard practice, Journal of the American Dietetic Association 107 (3), 404-412.

Jelliffe ,D. B. (1966), Assessment of Nutritional status of communities. WHO. Geneva.

K'rause& Mahan, food Nutrition and diet therapy, 7th edition 2002.

Langstein, H.N.Norton J.D. Lavin P.T.et.Al, prognostic effect of weight loss prior to chemotherapy in cancer patientsEastern Cooperative oncology Groups Am JMed. 69 (4) 491-7 1980.

Meena,v.andVaidya,N.Narang,S.et.al, The Indian Journal of Nutrition & dietetics volume – 42, 2006.

Mohammadi, S. and Sulaiman,s (2013),: Impact of healthy eating practices and physical activity on quality of life among breast cancer survivors, Asian pacific journal of Cancer Prevention 14(1), 481-4871

NationalCancerInstitute.Cancer statistics September27,2020.Available at: <http://www.cancer.gov/about-cancer/understanding/statistics>

National Cancer Institute. Mouth and Throat problem during cancer treatment. May 3, 2018. Available at :<https://www.cancer.gov/about-cancer/treatment/side-effects/mouth-throat>.

National Cancer Institute. Side effects of cancer treatment. September 22,2017. Available at: <https://www.cancer.gov/about-cancer/treatment/side-effects>.

NIN. (2010), Dietary guidelines for Indians. A manual. National Institute of Nutrition. Hyderabad. India. 85-89

Nutrition Recommendations During and After Treatment. Approved by the Cancer .Net Editorial Board,06/2022.at:<https://www.cancer.net/survivorship/healthy-living/nutrition-recommendation-during-after-treatment>

Ovesen, L. and Allingstoup, L. (1993): Effect of dietary counselling on food intake body weight, response rate and quality of life In cancer patients undergoing chemotherapy, Journal of clinical oncolog.ai.y, 1993, 11(10), 2043

Palta ,A. A book on Food & Nutrition 1st Edition 2004, 296.

Robinson, C.H. Marilya, R. Lawler, 1982 Normal and Therapeutic Nutrition oxford and IBH Publishing company, New Delhi.

Rock, C.L and Doyle, c. (2012), Nutrition and Physical activity guidelines for Cancer survivors A cancer Journal for clinicians 62(4), 242-275

Soffi, C. and Prema, L.(2012): Dietary factors associated with oral cancer. <http://hdl.handle.net> Srilakshmi B. Dietetics 2005, 220, 334. 5th addition.

Steele, CB. Thomas, CC.Henley,SJ.et.al.Vital Signs:Trends in Incidence of cancer Associated with Overweight and Obesity-United States,2005-2014.MMWR Morbidity and mortality weekly report.2017;66(39):1052-1058.doi:10.15585/mmwr.mm6639 el.[PMC free article][Pub med]

Stobaus N. muller, M.J. Kupferling, S. et al. Low Recent protein Intake predicts cancer. Relayed fatigue and Increased mortality in patients with Advanced Tumor Disease undergoing chemotherapy. Cancer (2019) (pub med) (cross Ref) (Google Scholar)

Umesh,K.et.al-Dietary fibre and cancer quarterly Bulletin of vegetarian Nutrition promotion Network, India, Vol. 3 No. 1 March 2002.

Varma,M.Sharma,R.G.et.al,Diet Nutrition & life style of Nutrition and Dietetics Volume, 33, 1996, 57.

Wedlake, L. shaw, c. Nair,M.C. , et al. Rendomized control trial of dietryfiber for the prevention of Badiation, jnduced gastrointestinal texicity during pelvic radiotherapy. Am J clin nuta. (2017), (pub med) (Cross Ref) (Google scholar)

Zahn, K.L. wong, G. Bedrick, E.J, et.al, Relationship of protein and calorie Intake to the severity of oral mucositis in patients with head & neck cancer receiving radiation the rapy, 2012, (pub Med) (cross Ref) (Google scholar)