

# Searching for the Basis of Cancer through Nutritional and Psychosocial Assessment

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**Abstract:** The present epidemiological study is based on the death rate due to cancer occurring in Dighirpar area of Mangaldai, Assam. Efforts have been made to find the basis of cancer through some ongoing parameters such as anthropologies, socio economic status, food habit and psychosocial condition. Results from the study showed that most families belong to low income group, 51% people dies between 60-69 years of age in cancer, most were from heavy life style pattern. 100% families were found to be of non-vegetarian food habit. In more than 50% cases, people were found to be addicted to tobacco and liquor both. Consumption of fruits, raw leafy vegetables, milk and milk products was not reported from a single family. 71% of cases were of esophageal cancer. The psychosocial parameters indicate that 85% of cancer died patients and their family members were seen to have positive attitude towards successful recovery and 88% of guests were observed showing positive behavior towards the patient's condition. Due to the fear of cancer, 86% families fell in moderate dementia. Social delinquencies were not found in the results. It may be concluded that the results of the epidemiological study with basic comparison of nutritional and psychosocial parameters of the families with a hope to have further exploration of the relationship between cancer, nutrition and psychosocial parameter considering large number of samples, different parameters and age groups.

**Index Terms:** Anthropologies, Epidemiological Study, Esophageal Cancer, Psychosocial Assessment

## INTRODUCTION

Cancer is a term that is used synonymously with fear. According to WHO, Cancer is a generic term for a large group of diseases characterized by the growth of abnormal cells beyond their usual boundaries that can then invade adjoining parts of the body and/or spread to other organ [1]. 4th February of every year is celebrated as 'World Cancer Day'. It is an initiative of the Union for International Cancer Control (UICC). But statistics says that it looks like a never ending series of chain. In India, it is estimated that 14.5 lakhs people are living with the disease, with over 7 lakh new cases being registered every year and 5,56,400 deaths which are said to be cancer related [2]. Nutrition plays an important role of one's health before and after occurring cancer. Over production of free radicals at cellular level causes cancer like diseases. There is no absolute evidence that free radicals involvement in carcinogenesis. But it is clear that their presence in biosystem lead to mutation, transformation and ultimately cancer [3]. The relationship between diet and cancer has advanced in recent years, but much remains to be understood with respect to diet and dietary components in cancer risk and prevention [4]. The contribution of diet to cancer risk in developing countries has been considered to be lower, perhaps around 20% [5].

According to estimates from the International Agency for Research on Cancer (IARC), there were 14.1 million new cancer cases in 2012 worldwide, of which 8 million occurred in economically developing countries, which contain about 82% of the world's population [6]. Identification and confirmation of cancer in one's body is one thing but the cruelest part of the disease is depravity to the patient by relative and society in rural area. Due to lack of education, most of the people thought that cancer is spread through touch, drinking and eating in those utensils that are used by the family members already having cancer. The reason of stigmatization of cancer in the Middle East countries lies on some misbeliefs that nothing can be done to prevent cancer, it is always fatal and it may be seen as a punishment [7]. It has been observed that majority of cancer patients experience weight loss as their disease progresses and, in general, weight loss is a major prognostic indicator of poor survival and impaired response to cancer treatment [8]. The psychosocial environment creating by other family members as well as relatives hampers the food habit and mental strength of the patient also. The Darrang district consists of a narrow strip of plain lying between Himalayas and Brahmaputra River in the north-west part of Assam [9]. Mangaldai Sadar is the sub-division of Darrang district [9]. The epidemiological site was chosen from randomly selected villages –Batabari, Pipirakuchi & Bihubhanga; the Assamese community dominated village of Dighirpar area. According to the people of these areas, numbers of people are dying in cancer since last two decades and this is a case of almost every household. Hence, the present study was an attempt to investigate the relationship between nutritional components with cancer and psychosocial environment of family and society of this epidemiological area.

The main objectives of this study were as follows–

- (i) To investigate the presence of preliminary data on cancer from those households having record of cancer patients, whether dead or alive.
- (ii) To determine the socio economic status, food consumption practices and other practices and maximum possible chances of having cancer by adopting any food items adversely by targeted group people.
- (iii) To study the various psychosocial parameters as well as their impact on patients & families during/after treatment.

**METHODOLOGY**

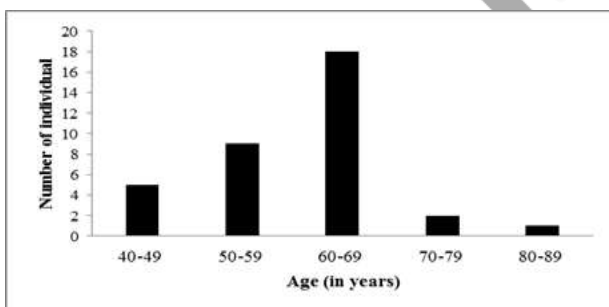
A food, health & psychosocial frequency questionnaire was developed at the beginning of the epidemiological survey [10]. It was a kind of qualitative diet survey. In such surveys, information is compiled to the kinds of food eaten, the frequency of their consumption, perceptions of the community about foods, attitudes towards different types of foods and the special foods consumed or eliminated during particular disease conditions [11]. The questionnaire consists of four distinct parts viz. regarding details of occurrence of cancer and its related parameters, socio-economic status of family, dietary pattern of the family and psychosocial status of patient's family and society. It is absolutely essential to literally understand the association between diet and cancer so that appropriate recommendations are provided to the general public that relies heavily on scientific assessments and claims [12]. Through the study, efforts have been made to communicate the basic relationship of diet and cancer through assessment of frequency of usage of food stuffs by patient's families. On the other hand, psychological distress is a key variable in taking care of cancer patients [13]. Therefore, the study also tried to investigate the existence of any type of negative impact of psychological and sociological behavior of family and society which triggers early death of those individuals; diagnosed with cancer. The information was collected from the 35 number of family whose family member died due to cancer. There were many other households that excluded during the study because of many inescapable circumstances.

**RESULT AND DISCUSSION**

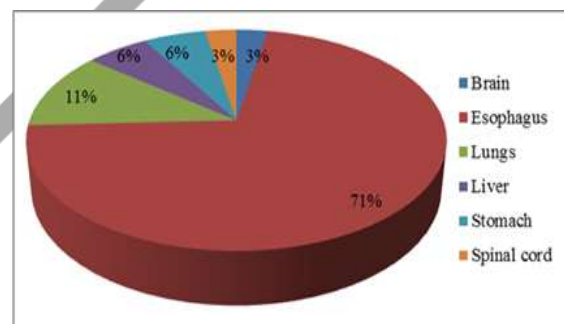
Information was collected on anthropologies of different family having records of death occurrences due to cancer since almost two decades. It was observed that 86% of male people died in cancer where 89% of families have no early history of cancer. Persons died in cancer were 69% from heavy & 31% from moderate life style activity. 100% families were found to be of non-vegetarian food habit. In case of sanitation and hygiene, the source of 91% family's drinking water was tube-well. On the other hand, 89% of people use traditionally homemade sand-gravel filter for the filtration of drinking water.

**Table 1** Anthropology of families

Characteristics	Number of patients died	
Sex	Male	30 (86%)
	Female	5 (14%)
Whether cancer in between family/ forefather	Yes	4 (11%)
	No	31 (89%)
Life style	Sedentary	0 (0%)
	Moderate	11 (31%)
	Heavy	24 (69%)
Food habit	Vegetarian	0 (0%)
	Lacto-ovo-vegetarian	0 (0%)
	Non Vegetarian	35(100%)
Adoption of proper sanitation and hygiene	Squat toilet	0 (0%)
	Pit toilet	35(100%)
Source of water	Tube-well	32 (91%)
	Pond/River	3 (9%)
Treatment of drinking water by	Homemade filter (sand-gravel)	31 (89%)
	Commercial filter	4 (11%)



**Figure 1** Stage of occurrence of cancer frequently



**Figure 2** Types of cancer

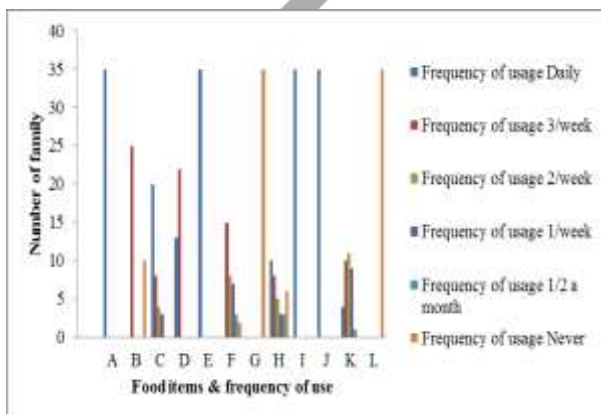
The study showed maximum (51%) occurrence of cancer in between 60 to 69 years of age and not a single case on adult and below that was reported. Among the different types of cancer, esophageal cancer was dominating others. 71% cases were found to be as esophageal cancer. 11% cases of lungs cancer, 6% each of liver and stomach cancer and 3% each of brain and spinal cord found next to the earlier type. In more than 50% cases, people were found to be addicted to tobacco and liquor both. Most of these families belong to low income group i.e., 71% families has monthly income of ≤ 5000 (in Rs.). The level of education was also found to be low. Only 68% of people amongst every household are still in the range of under-graduate and graduate level. 66% families were of joint types and 34% families were nuclear. The socio-economic data indicates that due to low income, limited education and residing in joint families, least number of the household generate income and others act as followers. All these are

directly or indirectly influencing the food budgeting and that is pitching a negative impact on the health of every individual of respective families.

**Table 2** Socio Economic Status of families

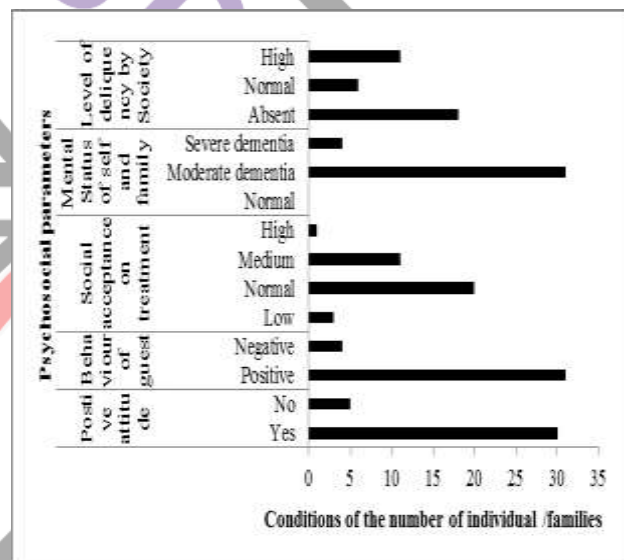
Parameters		Statistics
Religion	Hinduism	35 (100%)
Income	≤ 5000 (in Rs.)	25 (71%)
	>10000 (in Rs.)	9 (26%)
	>20000 (in Rs.)	1 (3%)
Education (Highest in between family members of each family)	No formal education	0 (0%)
	Below 10th	4 (11%)
	10th pass	7 (20%)
	12th pass	13 (37%)
	Graduate	8 (23%)
Types of family	Masters	3 (9%)
	Nuclear	23 (34%)
	Joint	12 (66%)

100% of families adopt rice as their staple food and consume in daily basis. Like rice, roots and tubers, sugar and jaggery and fats and oil used by 100% of families on their daily diet. But most interesting thing observed in the entire research is that the consumption of fruits was nil i.e., 0%; not at a single family. According to the household, instead of consuming fruits that they have in the garden, it is better to sold it and brings flesh foods from the market. Because of flesh foods give more energy and nutrients than fruits. This activity simply indicates lower nutritional knowledge of the targeted people. 100% families had been adopting non-vegetarian diet and the consumption frequency of flesh foods was depending upon their income ranging from daily to thrice /twice /once a week basis etc. Frequency of consumption of other foods like pulses, green leafy and other vegetables, and milk were seen to be in different basis like flesh foods. The psychosocial parameters recorded so far depicts almost positive impact of various on the patients. 85% of cancer died patients and their family members were seen to have positive attitude towards successful recovery from the disease. 88% of guests were observed showing positive behavior towards the patient’s condition.



[A= Rice B=Wheat C= Pulses & Legumes D= Green Leafy Vegetables E= Roots & Tubers F= Other vegetables G= Fruits H= Milk & Milk Products I= Sugar & Jaggery J= Oils & Fats K= Flesh Foods L= Carbonated beverages]

**Figure 3** Frequency of usage of different foodstuffs at household



**Figure 4** Psychosocial parameters

The social acceptance level of therapy also showed 57% as normal. But according to the household members, most of the families (86%) felt in moderate dementia due to the fear of cancer like diseases. Unlike this parameter, the delinquency level of society against the patient and their family found to be absent in the case of 51% individuals of the family of cancer diagnosed. It was found that the maximum people died in cancer that was from heavy life style pattern of 60 to 69 years of age group, non-vegetarian males. The habit of consuming fruits and raw fresh leafy veggies making salad was not reported even from a single household. Carcinogenesis is a complex phenomenon and plants and plant derived products is a revolutionizing field as these are simple, safer, ecofriendly, low-cost, fast, and less toxic as compared with conventional treatment methods [14]. Like that, the consumption of milk and milk products were found to be very low in number. Milk and dairy products may have both beneficial and adverse effects with regard to the risk of different cancers [15]. Therefore; there are urgent needs on the said parameters for further cancer research in this epidemiological area.

Income, educational level and types of family always influence the dietary pattern of a family [16]. The Government should take necessary initiatives to overcome the communication gaps between inter socio economic parameters. During the epidemiological study, it was found that many villagers of nearby villages prepare traditional liquor for home and commercial purpose. A lot of study as well as research is still needed on this area that either traditionally made liquor is safe for human

consumption at what extent or not. The study on psychosocial parameters indicates almost positive psyche and social behavior during the resting period after discharging from hospital therapy. The parameters may not trigger towards the weakness of mental strength to fight against cancer. But according to this report, almost all individuals died between a short periods ranging from one to three months after discharging from hospital therapy. It might be due to end stage detection of cancer and its consequence.

## CONCLUSION

Earlier detection of nutritional risk symptoms will result in thorough nutritional assessments and interventions that may help prevent further malnutrition during treatment and ultimately improve the quality of life of the normal population as well as to the patients who are at the verge of acquiring cancer [17]. Therefore, this study comes to an end with a hope of further research based on the food patterns that they are seen to be widely adopt and evade with the criteria to proceed in the advancement of the psychosocial parameters to resolve the fear- *cancer* in general from that epidemiological area and whole from the world.

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