

# A Study of Relationship between Dietary Habits and Cancer Patients Status in a Bangladeshi Population

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## ABSTRACT

Cancer is predicted to be an increasingly important cause of morbidity and mortality in Bangladesh in the next few decades. International Agency for Research on Cancer has estimated cancer-related death rates in Bangladesh to be 7.5% in 2005 and 13% in 2030. The two leading causes are in males are lung and oral cancer and in females are breast cancer and cervical cancer. The present study aimed to provide information about the common cancer types and respective predisposing risk factors among the Bangladeshi cancer patients from Ahasania Mission Cancer Hospitals located in Dhaka city, Bangladesh. The objective of the study to understand the impact of food habits on the production of carcinogenic agents in the body or cancer patients. A descriptive survey was carried out among the cancer patients of Ahasania Mission Cancer Hospital, Uttara, Dhaka, Bangladesh. The result shows that among 100 cancer patients, in nutritional status 63% are normal. Result reflects, among 100 patients 50% consumed sour fruits daily while 35% didn't consume sour fruits daily. Therefore the association of the above results consumption tobacco/alcohol is significant. Our results Self suggest that awareness of the attributable fraction of cancer causes in the Bangladeshi cancer patient tends to be dominated by tobacco smoking, food habit, cancer causing infection, men and women hygiene, and reproductive history among females rather than genetic factors.

**Key Words:** Cancer, Dietary Habits, Bangladesh

## INTRODUCTION

Cancer is one of the leading causes of death worldwide. [1] The World Health Organization (WHO) reported the cancer disease accounting for 8.2 million deaths in 2012 [1] and also predicted that 12 million of all deaths by 2030 worldwide will be due to cancer [2] The World Health Organization (WHO) has warned that from 2000 to 2020, cancer prevalence in developing and developed countries is expected to increase by 73% and 29%, respectively. [1] 70% of deaths from gastric and esophageal cancers, which rank 3rd and 6th in the cancer deaths

worldwide, respectively, are seen in developing countries including our country. [2,3] Cancer is deathful disease and caused by uncontrolled cell growth. In major cases predominantly breast, colorectal, prostate, lung, stomach and liver cancers cause the most cancer deaths each year. [4] The initial affected cell types and their positions mainly have classified the cancer types. In South Asia like India, Bangladesh, Nepal, Myanmar, Pakistan, and Tibet etc. 76,000 women die of breast cancer in a year. [5]

The higher frequency of cancer in the elderly is consistent with the multistage

nature of the carcinogenesis which usually requires decades for cancer to develop following exposure to etiological agents. Approximately 80% of the invasive cancers occur among the population of age 55 years or older in USA. [6] However, the most frequent types of cancer differ between men and women, lung cancer in men and cervical and breast cancer in women constitute about 38% of all cancer in Bangladesh [5] and in most cases cervical cancer patients come for diagnosis and treatment at very late stage. [5] About 30% of cancer deaths are due to the five leading behavioral and dietary risks which are high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use and alcohol use. [8] Smoking alone is estimated to have caused 21% of global cancer deaths and about 70% of global lung cancer deaths. [7] Cancer rates are predictable to further increase if nothing changes. Some large surveys related to cancer are being conducted worldwide based on various sorts of comparative data on patients from different parts of the globe [8] but there is no population based cancer registry in Bangladesh for reliable data on cancer incidence, prevalence and mortality. [9] This study is aimed to define the characteristics and distribution of types of cancer in Bangladesh through a prospective, cross-sectional, multicenter survey of cancer patients. We are also attempted to present the cancer treatment patterns in different hospitals and to reflect current condition of available anticancer drugs in Bangladesh.

## **MATERIALS & METHODS**

The study was conducted on 100 cancer patients at well-known hospital in Dhaka city, Bangladesh: Ahsania Mission Cancer Hospital from April to June in the year of 2017 on both the indoor and outdoor patients having radiological evidence or clinical evidence of malignancy from the hospitals. The study was a statistics based cross-sectional survey. This survey was done by a structured questionnaire which was developed through multi-stages of cross check and analysis and was used to collect

data from the patients. Questions were asked to the patient and finally answers of the patient were inserted into the data collection form.

From interviews, information was obtained about demographic characteristics, occupation and residence histories, history of selected medical conditions and medication use, diet and tobacco consumption. Mean values of the attributable fractions were calculated for each risk factor of cancer and compared by demographic and risk factors, socio-economic factors. Highest care was taken to determine the mean values of different risk factors.

## **RESULTS**

The study was conducted on the food habit of the patients suffering from different type of cancer. A total number of 100 individuals were selected in Ahsania Cancer Mission Hospital. The objective of the study was to determine the knowledge about the patient's food habit & lifestyle who are suffering from different types of cancer. Majority of the patients were from the Dhaka division. In this study the cancer incidence was much higher at the old age 50-59 years (23.33%), followed by middle age 30-39 (21.66%) whereas cancer was least prevalent in pediatric and teenage patients that were only 5.0% in both cases. Among 100 patients 80% took 3 times meal per day while 1% took above 5 times and 59% consumed green leafy vegetables daily while 28% didn't consume green leafy vegetables daily. Taking 34% Betel leaf and 52% Tobacco smoking are also observed in those people who are affected by Mouth and oropharynx cancer. It reflects that the value of P is 0.026. Therefore the association of the above results (consumption tobacco/alcohol) is significant.

With respect to family income, we found that the majority (about 21.67%) of patient's family income (range 20,000-30,000 taka only) was not sufficient for the treatment of cancer in Bangladesh. Regarding the educational status, the

incidence and prevalence of cancer were much in illiterate patients (total 30.00%, male 25.93% & female 33.33%). The main approaches of cancer treatment were surgery, chemotherapy and /or radiotherapy, used alone or in combination. We found that 60% (36, 21 female and 15 male) of patient were being treated with chemotherapy alone. In 20% of cancer cases chemotherapy was followed by radiotherapy and 11.6%

cases were being treated with radiotherapy whether triple therapy (chemotherapy, radiotherapy & surgery) treated cancer patient were insignificant in the study. With respect to the high treatment cost and hospital facilities, most of the patients were not satisfied (58%) in taking treatment from different hospitals. The findings of the study are described in the tables.

**Table1: Nutritional Status of Patients**

Nutritional Status of Patients					
	Stage	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under Weight	20	20.0	20.0	20.0
	Normal	63	63.0	63.0	83.0
	Over Weight	16	16.0	16.0	99.0
	Obese	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

The result shows that among 100 cancer patients, in nutritional Status 63% are normal (Table 1 and Graph 1). Whereas the above graph and table shows that 20% patients are under weight and 16% are overweight in nutritional Status.

**Table 2: Consumption of Yellow, Orange, Fruits/Vegetables Daily**

		Consumption of Yellow, Orange, Fruits/Vegetables Daily			Total	X <sup>2</sup> =Value	P=Value
		Yes	No	Sometimes			
Stage of Cancer	Frist	34	5	4	43	17.272	0.002
	Second	23	9	4	36		
	Third	7	5	9	21		
Total		64	19	17	100		

Table 7 reflects that the value of P is 0.002. Therefore the association of the above results (consumption of yellow, orange, fruits/vegetables daily) is very significant.

**Table 3: Consumption of any fast food**

		Consumption of any Fast food			Total	X <sup>2</sup> =Value	P=Value
		Yes	No	sometimes			
Stage of Cancer	Frist	17	24	2	43	9.437	0.051
	Second	17	16	3	36		
	Third	7	8	6	21		
Total		41	48	11	100		

Table 10 reflects that the value of P is 0.051. Therefore the association of the above results (consumption of any fast food) is slightly significant. It found from the graph 6 that among 100 patients 41% consumed any fast food while 48% didn't consume any fast food.

## DISCUSSIONS

This study was conducted during the period of April to June 2017 on the cancer patients in Ahsania Mission Cancer Hospital of Dhaka city. For this purpose, a

questionnaire was used to collect data from 100 cancer patients having radiological or clinical evidence of malignancy. The survey reflected some distinct picture on the cancer in Bangladesh. The age range of the sampled patients were 0 years to 70 years above and a total 23.33% of the patients having cancer with the range of 50-69 years.

Most people are affected with cancer because of illiteracy, ignorance, scarcity of cancer consciousness, religious superstitions and inadequate diagnosis availability in most cancer center and poor socio-economic

status in Bangladesh (8). Our survey also found that lack of education can cause cancer incidence, in our study 30% of the total patients were uneducated, and 23.33% patients passed secondary level and only 10% completed graduation.

The result shows that among 100 cancer patients, in nutritional Status 63% are normal. Whereas the above graph and table shows that 20% patients are under weight and 16% are overweight in nutritional status. It is found that Liver cancer is the most common cancer which around 21% whereas Leukemia is just only 1%. Result shows, among 100 patients 43% were in first stage of cancer while 21% were in third or final stage Result reflects that the value of P is 0.032. Therefore the association of the above results (Types of Patient's Treatment) is significant. Result reveals that the value of P is 0.032. Therefore the association of the above results (Cancer Related Problems of Patients) is significant. It is found that among the cancer related problems, fever is 18% whereas headache is only 3%. Results shows, among 100 patients 80% took 3 times meal per day while 1% took above 5 times. Result reflects, among 100 patients 50% consumed sour fruits daily while 35% didn't consume sour fruits daily. Results shows, among 100 patients 59% consumed green leafy vegetables daily while 28% didn't consume green leafy vegetables daily. Result reveals that the value of P is 0.002. Therefore the association of the above results (consumption of yellow, orange, fruits/vegetables daily) is very significant. Results reflect that the value of P is 0.026. Therefore the association of the above results (consumption tobacco/alcohol) is significant. It found from the graph 6 that among 100 patients 33% consumed tobacco/alcohol while 61% didn't consume Tobacco/Alcohol. Result shows, among 100 patients 34% consumed Bitter Vegetable or Fruits while 53% didn't consume Bitter Vegetable or Fruits. Study reflects that the value of P is 0.051. Therefore the association of the above results

(consumption of any fast food) is slightly significant. It found from the graph 6 that among 100 patients 41% consumed any Fast food while 48% didn't consume any fast food. Results reflect that the value of P is 0.009. Therefore the association of the above results (consumption of any fried food) is highly significant. It found from the study that among 100 patients 33% consumed any processed/canned Foods while 54% didn't consume any processed/canned Foods. It found from the result that among 100 patients 39% consumed any Soft drinks or energy drinks while 45% didn't consume any soft drinks or energy drinks. It found from the study that among 100 patients 65% took milk-tea or coffee while 27% didn't take milk-tea or coffee. Result shows that among 100 patients 68% had stress or tension while 25% hadn't stress or tension. Study shows that among 100 patients 18% had any idea about cancer causing foods while 82% hadn't any idea about cancer causing foods. Result shows that among 100 patients 53% had any problem to eat food while 47% hadn't any problem to eat food. Study shows that among 100 patients 42% had any problem to chew food while 58% hadn't any problem to chew food. Result shows that among 100 patients 41% had any problem to digest food while 59% hadn't any problem to digest food. Result shows that among 100 patients 36% had any idea about cancer preventing foods while 64% hadn't idea about cancer preventing foods. Study shows that among 100 patients 55% had any pain like joint or bone pain while 45% hadn't pain like joint or bone pain. Result shows that among 100 patients 65% was sedentary worker while 13% was heavy worker. It is found from the biochemical information that the average level of hemoglobin, creatinine, SGPT, bicarbonate is 10.31, 1.03, 49.89 and 1.14 mg/100mL respectively. However, it also shows that the average level of sodium, chloride, calcium, potassium is 112.4, 97.2, 8.0 and 3.8 µg/100mL respectively.

## CONCLUSION

Dietary factors play an important role in the high incidence of several types of cancer. Modification of dietary habits to include daily intake of plant-based food containing anticancer and anti-inflammatory phytochemicals thus represents a promising approach to preventing the development of cancer. The close relationship between diet and cancer is suggested by the large variation in rates of specific cancers in different countries and by the spectacular changes observed in the incidence of cancer in migrating populations. These observations indicate that most cancers are not of hereditary origin and that lifestyle factors, such as dietary habits, have a profound influence on their development.

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