

ORIGINAL ARTICLE

Trends, Risk Factors and Treatment of Common Cancers: Outcome of Hospital Based Survey Conducted in Dhaka, Bangladesh

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ABSTRACT

Background: In Bangladesh, the estimated incidence of 12.7 million new cancer cases will rise to 21.4 million by 2030. **Objective:** The study aims to provide information about the common cancer types, predisposing risk factors and modalities of treatment among the Bangladeshi cancer patients.

Methods: This cross-sectional, descriptive study was conducted between July and December of 2014, in different cancer hospitals located in Dhaka city, Bangladesh. Interviews were conducted based on a semi-structured questionnaire with 550 histopathologically confirmed cancer patients or patients having radio-pathological and clinical evidence of cancer (339 men and 211 women).

Results: Among the male patients, the leading cancers were lung (23%), followed by mouth and oropharynx (16.52%), stomach (14.45%), colorectal (10.91%) cancers and others (35.12%). Among the female, breast cancer (31.75%) was the highest, followed by cancer of cervix (27.96%), ovary (18%), mouth and oropharynx (13.27%), stomach (4.74%) and others (4.28%). Among the risk factors of male cancer patients, tobacco smoking was considered highest (76.4%), followed by chewing betel leaf and nuts (61.65%) and chronic disease (58.4%). Among women, the attributable fraction of cancer causing by recurrent STDs (37.91%) was found as the highest, followed by obesity (36.97%), chronic disease (32.7%), chewing betel leaf and nuts (23.22%) and tobacco smoking (26.54%). Main treatment modalities were surgery, chemotherapy and radiotherapy applied either individually or in combination. Most of the patients received chemotherapy (54.72%), followed by chemotherapy with radiation (32%). Only 7.81% patients got palliative care. **Conclusion:** There are resource-strained oncology units in different public hospitals along with few private hospitals in Dhaka. However, this survey revealed that many patients lack access to cancer awareness programme, cancer screening facilities, availability of low-cost drugs, therapies and palliative care. Hence, promotion of health education, behavioural change communication and development of treatment facilities and manpower are recommended.

Keywords: Cancer, risk factors, treatment of cancer, Bangladesh.

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INTRODUCTION

Cancer is a leading cause of death worldwide, accounting for nearly 10 million deaths, or nearly one in six deaths.¹ Important differences can be observed between countries, gender and socio-economic status. In Bangladesh, the estimated incidence of 12.7 million new cancer cases will rise to 21.4 million by 2030.² However, almost 50% of cancers can currently be prevented by

avoiding risk factors and implementing existing evidence-based prevention strategies. The cancer burden can also be reduced through early detection of cancer and appropriate treatment and care of patients who develop cancer. Many cancers have a high chance of cure if diagnosed early and treated appropriately.³ In the developed countries, complete high-quality national cancer registration and analysis services are available. cancer registry is a cornerstone to cancer

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prevention and treatment.⁴ A complete and detailed collection of data about every cancer is the key to understanding this complex disease, e.g., the symptoms people have, how their cancer is diagnosed, how they respond to treatment and how their own cancer progresses over time.^{4,5}

We have mentioned earlier that millions of people suffer from cancers that are preventable. Data are essential to know what actions are needed and which groups should be targeted. We need research, analysis and knowledge, but above all, high quality, accurate data on every case. Tailored programmes informed in this way have been shown to reduce the cancer burden, leading to healthier populations and economic savings.⁶ Cancer incidence data, required for planning and evaluating cancer control actions, are provided by population-based cancer registries (PBCR).^{5,6} However, in Bangladesh, we have only few reports available on cancer incidence and availability of the treatment. Therefore, this study aims to provide information about the common cancer types, predisposing risk factors and modalities of treatment among the Bangladeshi cancer patients.

METHODS

This cross-sectional, descriptive study was conducted between July and December of 2014 in different cancer hospitals located in Dhaka city, Bangladesh. Interviews were conducted based on a semi-structured questionnaire with 550 histopathologically confirmed cancer patients or patients having radiological and clinical evidence of cancer (339 men and 211 women). The survey included a set of detailed instructions on how to complete the questionnaire and a glossary defining the terms used. The questionnaire was translated into Bangla, to facilitate completion by participants of all levels of education. From interviews, information was obtained about demographic characteristics like age, sex, education, habitat, occupation as well as types of cancer, risk factors and treatment modalities. Among risk factors, history of selected medical conditions and medication use, diet and tobacco consumption. Meticulous care was taken to determine different mean values.

Data entry was done eventually following complete compilation of relevant data for each participant in MS-Excel in computer. Results were presented as frequency and percentage for categorical variables in tabulated form.

RESULTS

Among the cancer patients, most of them belong to the 31–50 years age group (38.9%), followed by 51–70 years age group (30.55%), 18–30 years age group (18.55%) and >70 years (12%). A male predominance was observed (61.64%). 21.63% had no education, while 33.64% had primary education. Most of them were hailing from the rural areas (71.27%). Among professions, most of the patients were based on agriculture (32.36%), followed by housewife (31.09%) and day labour (26%) (Table 1). Among the male patients, the leading cancers were lung (23.0%), followed by mouth and oropharynx (16.52%), stomach (14.45%), colorectal (10.91%) cancers etc. Among the female, breast cancer (31.75%) was the highest, followed by cancer of cervix (27.96%), ovary (18.0%), mouth and oropharynx (13.27%), stomach (4.74%) etc. (Table 2). Among the risk factors of male cancer patients, tobacco smoking was considered highest (76.4%), followed by chewing betel leaf and nuts (61.65%) and chronic disease (58.4%). Among women, the attributable fraction of cancer causing by recurrent STDs (37.91%) was highest, followed by obesity (36.97%), chronic disease (32.7%), chewing betel leaf and nuts (27.22%) and tobacco smoking (26.54%) (Table 3). Main treatment modalities are surgery, chemotherapy and radiotherapy applied either individually or in combination. Most of the patients received chemotherapy (54.72%), followed by chemotherapy with radiation (32.0%) and only radiation (5.47%). Only 7.81% patients got palliative care (Table 4).

Table 1: Demographic characteristics of the study participants (N=550)

Variables	Frequency	Percentage
Age group		
18–30 years	102	18.55
31–50 years	214	38.9
51–70 years	168	30.55
>70 years	66	12.0
Sex		
Male	339	61.64
Female	211	38.36

Variables	Frequency	Percentage
Education level		
No education	119	21.63
Primary	185	33.64
Secondary	78	14.18
Higher Secondary	73	13.27
Bachelor	67	12.17
Masters and above	28	5.08
Habitat		
Rural	392	71.27
Urban	158	28.73
Occupation		
Agriculture	178	32.36
Day labourer	143	26.0
Housewife	171	31.09
Govt. service	32	5.82
Private service	21	3.82
Unemployed	5	0.91

Table 2: Type of cancer among study participants (N=550)

Types of cancer	Male (n=339)		Female (n=211)	
	Frequency	Percentage	Frequency	Percentage
Lung	78	23.0	3	1.42
Mouth and oropharynx	56	16.52	28	13.27
Stomach	49	14.45	10	4.74
Colorectal	37	10.91	-	-
Prostate	28	8.26	-	-
Liver	27	7.97	-	-
Urinary bladder	24	7.08		
Gall bladder	16	4.72	-	-
Thyroid	15	4.43	6	2.84
Skin	9	2.65	-	-
Breast	-	-	67	31.75
Cervix of the uterus	-	-	59	27.96
Ovary	-	-	38	18.0

Table 3: Risk factors of cancer among study participants (N=550)

Risk factors	Male (n=339)		Female (n=211)	
	Frequency	Percentage	Frequency	Percentage
Tobacco smoking	259	76.4	56	26.54
Chewing betel leaf and nuts	209	61.65	57	27.22
Chronic disease	198	58.4	69	32.7
Family history	125	36.87	46	21.9
Obesity	92	27.14	78	36.97
Recurrent STDs	68	20.06	80	37.91
Unhealthy eating	65	19.17	43	20.38

For each multiple risk factors were identified through the questionnaire.

Table 4: Treatment modalities among the study participants (N=550)

Treatment modalities	Frequency	Percentage
Only chemotherapy	301	54.72
Chemotherapy with radiation	176	32
Only Radiation therapy	30	5.47
Palliative care	43	7.81

DISCUSSION

The global burden of cancer is projected to increase from 13.3 to 21.4 million incident cases between 2010 and 2030 due to demographic changes alone, dominated by a growing burden in low- and middle-income countries (LMICs).⁷ Bangladesh is not an exception to this. Our study showed a male predominance among cancer patients. Evidence showed that cancer incidence is 40% higher among men than women, while cancer mortality rates are almost 70% higher among men than women.⁸ In the present study, among males, the leading cancers were lung (23.0%), followed by mouth and oropharynx (16.52%), stomach (14.45%), colorectal (10.91%) cancers etc., while among females, breast cancer (31.75%) was the highest, followed by cancer of cervix (27.96%), ovary (18.0%), mouth and oropharynx (13.27%), stomach (4.74%) etc. Almost similar results were found in several previous studies done in Bangladesh, as lung cancer and mouth-oropharynx cancer rank as the top two prevalent cancers in males, and cancer cervix uteri and breast cancer

were found most commonly among females.⁹⁻¹²

Our study revealed that among male cancer patients, tobacco smoking was considered the most important risk factor (76.4%), followed by chewing betel leaf and nuts (61.65%) and chronic disease (58.4%). Among women, the attributable fraction of cancer causing by recurrent STDs (37.91%) was highest, followed by obesity (36.97%), chronic disease (32.7%), chewing betel leaf and nuts (27.22%) and tobacco smoking (26.54%). Of all cancer risk factors, tobacco use was the most commonly included in both adult and adolescents. Around 40% of cancer cases are preventable as they relate to risk factors that can be modified or avoided. Tobacco is the largest preventable cause of cancer, causing at least 20 types of cancer and, specifically, 80% of lung cancer. Alcohol is the second leading cancer risk factor, accounting for 6.3% of cancer deaths, followed by unhealthy diets (6.2%), exposure to carcinogens at work (5.9%), overweight and obesity (5.7%), air pollution (2%), lack of physical activity (1.2%) and human papillomavirus (HPV) infection (1.2%).^{13,14}

Financial problem, late diagnosis, poor radiotherapy facilities, unavailability of a complete cancer-specialized hospital, poor funding from government for cancer, lack of cancer registries all over the country, low levels of awareness are our main problems.^{11,15} Global figures of the burden of cancer across the different geographic areas are made possible by cancer-registry data. The most efficient method for addressing the cancer challenge is by means of the development and implantation of a cancer-control plan whose core indicator is the cancer registry.^{16,17} Cancer-registry statistical results could be used in different fields. These include etiological investigation, primary prevention (evaluation of cancer-control programs to avoid carcinogenic exposure and vaccination), secondary prevention (evaluation and monitoring of screening and early-detection programs), and tertiary prevention (evaluation of care and rehabilitation in cancer survivor patients, the impact of changes over time, and survival analysis), for the benefit of individuals as well as of society as a whole.¹⁷

The World Health Organization (WHO) took action to achieve the targets specified in the Global Action Plan for the Prevention and Control of Noncommunicable Diseases (NCDs) 2013-2020 and the 2030 UN Agenda for Sustainable Development to reduce premature mortality from cancer.¹⁸ We also need to step forward to develop standards and tools to guide the planning and implementation of interventions for prevention, early diagnosis, screening, treatment and palliative and survivorship care for both adult and child cancers.^{19,20} Moreover, we need to strengthen health systems at national and local levels to help them improve access to cancer treatments including access to essential cancer medicines.^{17,19,20}

CONCLUSION

There are resource-strained oncology units in different public hospitals along with few private hospitals in Dhaka. However, this survey revealed that many patients lack access to cancer awareness programme, cancer screening facilities, availability of low-cost drugs, therapies and palliative care. Hence, promotion of health education, behavioural change communication and development of treatment facilities and manpower are recommended.

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