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Original Research Article

Treatment dropout: the hidden truth behind the treatment failure of malignancy

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ABSTRACT

Background: Bangladesh is a country with a high burden of malignant people. As this burning issue is recklessly increasing day by day, the aim of this study is to point out the causes behind the cancer patients getting dropped out of the midway of their treatment.
Methods: A total of 40 patients were enrolled in this study at a tertiary level cancer hospital. They were selected from the treatment drop out of the registry of our oncology ward, connected through their contact numbers, and several questions were asked systematically according to a pre-formed questionnaire containing patients' age, gender, socio-economic and educational status, different possible causes of treatment drop out, etc. Data were collected and analyzed systematically with the help of SPSS 25.
Results: Among the study population (n=40), the number of male and female patients was 12 (30%) and 28 (70%) respectively. The mean age of male patients was 65 years (range 45 to 78 years) and that of female were 45 years (35 to 60 years. Most of the patients were from lower-middle-class socio-economic status (45%) with an average of educational status up to secondary school certificate (SSC) exam and family income less than 20,000 BDT per month. Only 15% of patients were self-dependent and the rest of all were dependent on either husband (in the case of female) or children. Among twelve male patients (n=12), five patients (5, 41.6%) had colorectal cancer, three patients (3, 25%) had lung cancer and two patients (2, 16.7%) was harboring prostate cancer. Of twenty-eight female study populations (n=28), more than half of the population (15, 53.6%) had breast cancer, one-fourth of patients (7,25%) had cervical cancer and only two patients (2, 7.14%) had ovarian cancer. The possible vital reason behind early treatment dropout among patients was financial problems (55%). Husbands' deprivation (13%), Social harassment and isolation (8%) after the first cancer diagnosis,
Conclusions: Social awareness, proper steps, and policies of government and non-government organizations for cancer patients taking into consideration all of the causative factors behind treatment drop out can reach the goal of cancer-free Bangladesh.

Keywords: Treatment drop-out, Malignancy, Cancer, Treatment failure

INTRODUCTION

Cancer is a global health problem. It is estimated that at present the majority of global deaths are the result of non-communicable diseases (NCDs).[1] Cancer is anticipated to rank as the foremost cause of mortality and the single most crucial hurdle to increasing life expectancy in every country of the world in the 21st century. WHO estimated in 2015 that, cancer is the first or second cause of death before age 70 years in 91 countries and it is rampant third or fourth in the spare 22 countries.[2] Cancer incidence and mortality are growing expeditiously globally. The causes might be the aging and growth of the population, as well as a reversal in the prevalence and apportionment of the leading risk factors for malignancy. Some risk factors are

highly allied to advancing industrialization.[3] In 2018, 18.1 million new cancer cases and 9.5 million cancer deaths were approximated. Perhaps, the type of cancer usually varies across countries and within countries depending on the extent of economic development and personal and social habits. Every day the world is undergoing newer innovations in the field of cancer treatment and establishing newer milestones in that sector and making people hopeful for a cancer-free world. Bangladesh is also proceeding with the same pattern. However, treatment dropout is a magnanimous issue that is creating obstacles in this pathway of success for our country as well as other developing countries like us. It is not only escalating the recurrence rate and treatment failure rate but also creating an immense impact on the overall oncology success rate all over the world. Thus, it is needed to spin out those hidden factors of treatment failure in an instant. As cancer incidence, mortality, and cancer burden are increasing at an alarming rate around the world. The international agency for research on cancer (IARC) declared in 2014 that the litigation that has been adopted worldwide against cancer cannot be won just via treatment and the effective cancer prevention policies must be implemented immediately to avoid a cancer catastrophe.[4]

In most low and middle-income countries, there is a lack of remarkable high-quality cancer registry data that is vital for planning and implementing evidence-based cancer control programs. Global commencement for cancer registry development is an international affiliation that assists better estimation as well as the collection and use of local data to hierarchize and weigh national cancer control efforts. The aim of the study was to investigate the reasons behind the treatment dropout of malignant patients that finally lead to treatment failure.

Objectives

General objective

The general objective was to investigate the reasons behind the treatment dropout of malignant patients that finally lead to treatment failure.

Specific objective

The specific objectives were to assess the frequent types of malignancy suffered by the patients in the oncology department and to observe the socio-demographic characteristics of the malignant patients.

METHODS

A retrospective cross-sectional study was carried out in a tertiary level cancer hospital, from March 2019 to December 2020. A total of 70 patients were enrolled in this study who were dropped out from treatment. Patients were contacted by telephone. The telephonic interview was conducted according to the pre-formed questionnaire. Data were collected and analyzed. Patients were invited to visit the oncology department for follow-up. Verbal consent was taken before recruiting each participant. Ethical clearance was taken from the hospital authority. The information was kept confidential.

Inclusion criteria

The inclusion criteria included patients with a history of treatment drop-out.

Exclusion criteria

Patients who were not communicable (wrong number or phone switched off), patients who showed unwillingness to contribute in the study and death of the patients were excluded from the study.

Data analysis

The study coordinators performed random checks to verify data collection processes. Completed data forms were reviewed, edited, and processed for computer data entry. Frequencies and percentages were used for descriptive analysis. The data analysis was performed using statistical package for the social sciences (SPSS) version 25.0.

RESULTS

During the study period, seventy patients reneged from the treatment. Of them, thirty patients were not included in the study due to unavailability over the phone, death of the patients, and non-cooperation of patients and/or patients' attendants. Forty patients who were alive and cooperative were recruited in this study (n=40). Around three-fourths of the study population (28, 70%) were female and the rest of 30% of patients was male. The mean age of male patients was 65±SD with a minimum age of 45 years and a maximum of 78 years. The mean age of female patients was 45±SD with a minimum age of 35 years and maximum age of 60 years. More than half of the study population (20, 50%) had their education up to SSC. Moreover, three patients (3, 7.5%) were illiterate and only two patients (2, 5%) had completed the bachelor degree. About three-fifths of the patients (25, 62.5%) gave the history of monthly family income during the study period was 10000-20000 Taka BDT. Only one-fourth (10, 25%) of the population had a monthly family income of more than 20000 Taka BDT. The majority of the patients (34, 85%) were dependent on their husbands or on their children. Only 15% of patients were self-dependent. Almost half of the population (18, 45%) belongs to lower-middle-class families. There were only two patients (2, 5%) referred from upper-class families. About half of the patients had managed their treatment cost by selling or vending of their assets and one-fifth of patients (7, 17.5%) borrowed money for the continuation of their treatment. Only twelve patients (12, 30%) were benefitted from their family savings and the rest of three

patients (3, 7.5%) were supported through government or non-government charity funds (Table 1). Among twelve male patients (n=12), five patients (5, 41.6%) had colorectal cancer, three patients (3, 25%) had lung cancer, two (2, 16.7%) was harboring prostate cancer and the rest of two patients (2, 16.3%) had other types of malignancy (lymphoma 8.3% and head-neck cancer 8.3%). Of twenty-eight female study populations (n=28), more than half of the population (15, 53.6%) had breast cancer, one-fourth of patients (7, 25%) had cervical cancer and only two patients (2, 7.14%) had ovarian cancer. Perhaps, there were four female patients who had other varieties of malignancy (Uterine cancer=1, 3.6%, colorectal cancer=2, 7.1%, and soft tissue sarcoma=1.3.6%) (Table 2). More than half of the study population (22, 55%) could not continue their treatment due to having a financial crisis. Five patients (5, 12.5%) dropped the treatment due to their husband's deprivation and another three patients (3, 7.5%) experienced social harassment and were kept isolated after 1st cancer diagnosis. Furthermore, two patients (2, 5%) denied continuing their treatment as they found it unproductive and chose other options like herbal or homeopathy treatments. One-fifth of the patients (8, 20%) had other causative factors like a divorce after diagnosis of malignancy, negative impressions on the institution or hospital where he/she took first treatment, adverse influences of relative and neighbors for treatment, and lacking reliance on native treatment amenities, etc. Unfortunately, after having rush of depressive episodes following both physical and mental torture from her husband after first cancer diagnosis, one of the patients (age: 35 years) with ovarian cancer committed suicide.

DISCUSSION

Multiple individual and social factors are responsible for the successful complex, multidisciplinary management program of life-threatening cancer. There are confronts and barriers to the expansion of such programs in resource-limited countries. Treatment dropout is an important parameter that impacts treatment outcomes. Considering the importance of treatment failure and its impact on the consequences, causative factors should be extensively investigated. In this study, causal factors of treatment dropout were aimed to be distinguished. In the current study, more than half of the population (22, 55%) could not continue their study due to financial crises. The major constraint of receiving cancer treatment is high treatment cost as treatment is not free.[5] This huge treatment cost becomes a burden and patients get obligated thus refuse to proceed with treatment. In many developed countries, several strategies are accustomed to governing the cost-benefit relationship in prescription cancer drug markets.[6] The present study found that negative impressions on the attending physician and adverse impressions on the institution or hospital where he/she took first treatment were also relevant in treatment dropout. Moreover, excellent response after the first and second cycles of chemotherapy leads to a significant decrease in signs and symptoms creating a false belief that he or she has got cured. Subsequently, patients start believing that further treatment is not indispensable for the rest of life. Opposing behavior from relatives and neighbors for treatment resumption demotivate patients in the continuation of treatment that was another causative factor of treatment dropout in the current study. In addition, chemotherapy-induced toxicity leads to a decrease in the quality of life thus patients become reluctant on treatment. A multicenter prospective study was carried out in France in the year 2021 and revealed that chemotherapy-induced complications impede the entire treatment outcome.[7] Won et al mentioned in their study that elderly cancer patients who have cancer metastasis were more plausible to be in the treatment failure group.[8] Some patients claimed stoppage of financial help from children and forceful referral in an old age home after 1st cancer diagnosis interrupted their treatment. Simultaneous development of malignancies of another family member also leads to difficulties of continuing own treatment. In this situation, the financial issue made the thread more entangled. As part of that after the first diagnosis, significant depression develops. Kemp et al found anxiety and depression made patients discontinue the treatment.[9] During the COVID-19 pandemic in the year 2020, a study was conducted in Wuhan, China revealed, fear of disease advancement, anxiety, and depression in cancer patients caused the delay in the treatment and finally hampered the final treatment outcome.[10] False belief in native doctors and excessive faith in doctors of foreign countries also leads to delay in starting treatment and treatment dropout. Different studies show that affectionate behavior from physicians stimulates patients' participation in treatment.[11] In this study, there were three patients (3, 7.5%) who underwent social harassment and became isolated after 1st diagnosis of cancer. Social molestation might arise from different social stigmas. Stigmatized people might transfix other cancer patients interrupt their willingness to get treatment. There is a remarkable social perception that colorectal and cervical cancer results in repulsive sexual behavior that leads to a family split up.[12] Perhaps, lung cancer patients tend to be stigmatized as a result of its association with smoking, they are frequently blamed for their situation.[13] Besides, cancer patients oftentimes are confounded thus might not get any social support due to the myth that illness is a deserved punishment.[14,15] Social stigma is a social abstraction and immensely associated with education.[16]

Bangladesh has a huge number of cancer patients. There is also inadequate treatment facilities and infrastructure problems. The patient has to wait for several weeks for operation, chemotherapy, and radiotherapy due to the huge patient's load. There is also long serial and a huge number of the patient as some equipment are functioning and some are not functioning and the number of the well-equipped hospitals is insufficient.[17] Moreover, in urban areas treatment facilities are more available than in rural areas. There are also enormous social constraints like

ignorance, fear, transport problems that interrupt the treatment facilities. Altogether, the government should take necessary steps to improve the services. There should be a proper referral mechanism for patients. Given the enormous cost and challenges with proper diagnosis and management of cancer patients in Bangladesh, it is imperative. Cancer can be restrained by instituting and ensuring treatment facilities and preventing early treatment dropout of patients that impede the final treatment outcome.

Table 1: Characteristics of study population, (n=40).

Characteristics	N (%)
Sex	
Male	12 (30)
Female	28 (70)
Mean age of male (Years)	65±SD, range 45-78
Mean age of female (Years)	45±SD, range 35-60
Educational status	
Illiterate	3 (7.5)
Upto class VIII	7 (17.5)
Upto SSC	20 (50)
Upto HSC	8 (20)
Graduate	2 (5)
Family income (Taka)	
<10000	5 (12.5
10000-20000	25 (62.5)
>20000	10 (25)
Dependency	
Self-dependent	6 (15)
Dependent on husband or on children	34 (85)
Socio-economic status	
Upper	2 (5)
Middle	8 (20)
Lower middle	18 (45)
Lower	12 (30)
Major sources of expenditure	
Family savings	12 (30)
Borrowings	7 (17.5)
Sales of assets	18 (45)
Other assistances (Government/ philanthropy)	3 (7.5)

Table 2: Distribution of study population based on type of malignancy, (n=40).

Types of cancer	Male, (n=12)	Types of cancer	Female, (n=28)
Colorectal	5 (41.6)	Breast	15 (53.6)
Lung	3 (25)	Cervical	7 (25)
Prostate	2 (16.7)	Ovarian	2 (7.1)
Others (Lymphoma and head-neck cancer)	2 (16.3)	Others (Uterine, colorectal cancer, soft tissue sarcoma)	4 (14.1)

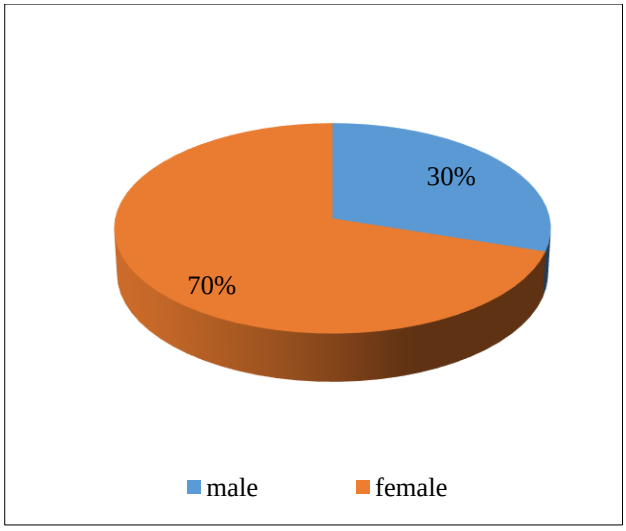

Figure 1: Distribution of patients according to sex.

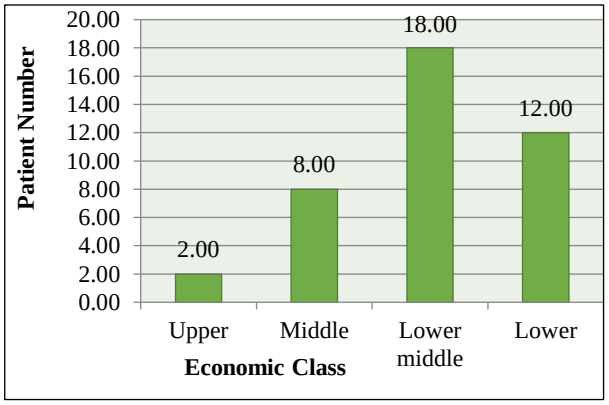

Figure 2: Diagram showing socioeconomic status of total patients.

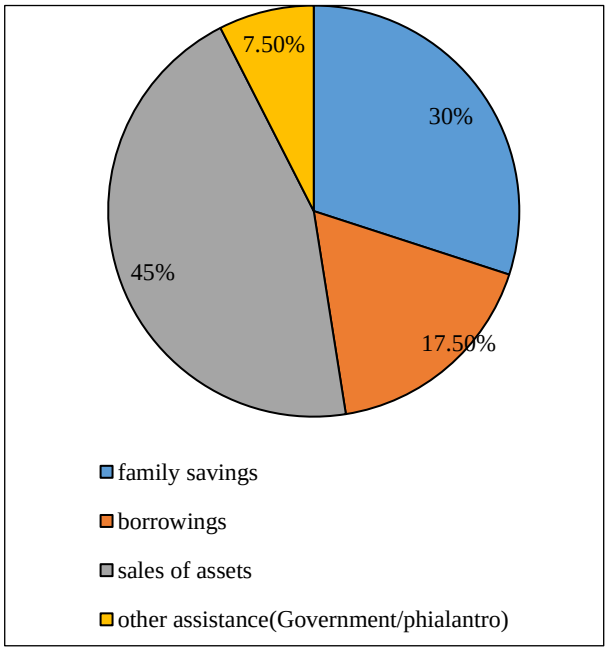

Figure 3: Major sources of expenditure.

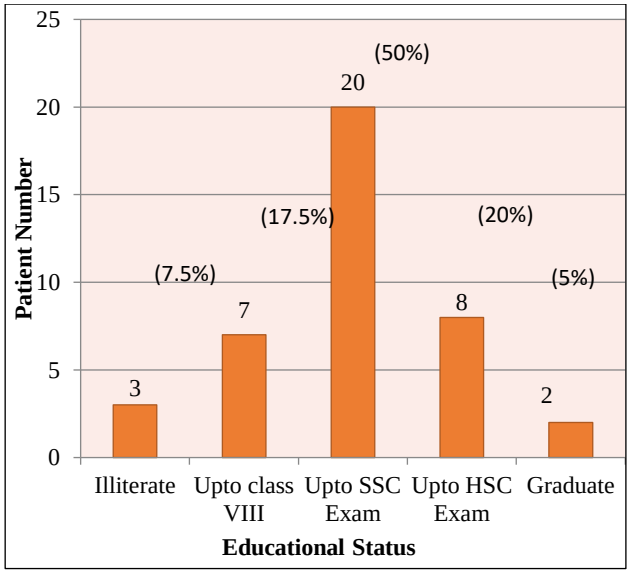

Figure 4: Diagram showing educational status of total patients.

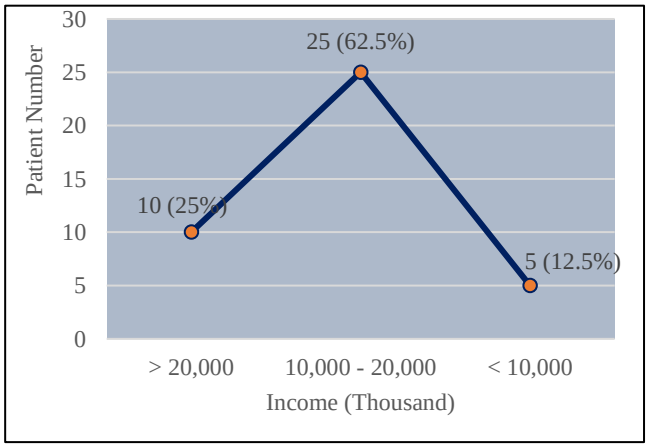

Figure 5: Distribution of patients by their family income.

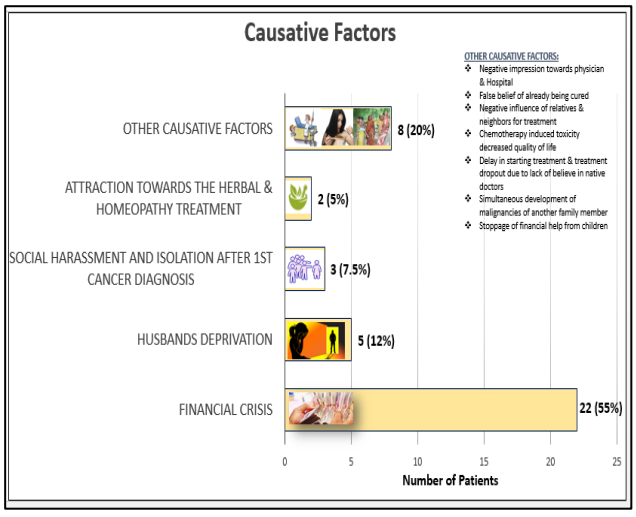

Figure 6: Distribution of study population based on the causative factors for treatment dropout, (n=40).

CONCLUSION

The incidence of cancer is increasing even more frantically than in the previous decades. The treatment of this disease is always highly challenging, crucial, and precarious in developing countries like Bangladesh. The treatment dropout of the patients exacerbates the scenario as well. Lack of substantial social awareness, failure to ensure proper steps and policies of the public, private and NGO organizations for cancer patients impinge upon the success of treating cancer. Cancer-free Bangladesh is unequivocally possible by lessening the number of treatment dropouts hence elucidating all of the causative factors as marked out in the present study and should be dealt with solemnly.

Recommendations

Strengthening the cancer registry is imperative to identify the treatment failure cases. The rationality of discontinuation of treatment should be scrutinized and decorous steps should be taken by the government and allied organizations. Remarkable high-quality cancer registry data that is vital for planning and implementing evidence-based cancer control programs. Respective humanitarian organizations can be engaged in the treatment of cancer patients. Intensification of family values, decency, and integrity should be adduced into eminence. Awareness about cancer morbidity and mortality needs to be created specially in the target groups. Proper referral center should be developed. The burden of long-term morbidity and even mortality due to cancer should be put to the notice of the concerned authorities. Vaccination program should be implemented. To get robust data, multicenter studies are in great need of policymakers to interpret the demonstrable scenario and to take necessary steps towards mitigating this problem.

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