

# Socioclinical profile of patients seeking treatment for cancer in a Teaching hospital in east Delhi, India

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## ABSTRACT

**Background:** Prevalence of cancer in urban India is seeing a discernible increase due to lifestyle modifications and adverse environmental exposures. The pattern of cancer incidence varies from one region to another within a large country like India. **Aim and Objectives:** This study was conducted to understand the socioclinical profile of the patients attending a tertiary care hospital in east Delhi for the treatment of cancer. **Methods:** Patients above the age of 18 years, who had been diagnosed with cancer, were recruited for our study and their socioclinical details were elicited. After 3 months they were reassessed and their treatment and side-effect profile were studied. **Results:** Majority of our patients were diagnosed with cancers of the oral cavity and were married men in age group of 40–60 years, residing in the National Capital Region. Patients diagnosed with breast cancer were more likely to receive chemotherapy and suffer from side effects of treatment like nausea, anorexia, and loss of weight. **Conclusion:** Physicians need to be aware of these complications and should incorporate a proper counselling mechanism before treatment is started in such patients. Family physicians play a defining role in the palliative management since he remains a trusted face in his community and can provide professional and psychotherapeutic support.

**Keywords:** Cancer, Delhi, Socioclinical profile

## Introduction

India is going through a period of epidemiological transition. The country is still battling the problem of communicable diseases, while the incidence of noncommunicable diseases is steadily increasing. This has burdened the already strained health resources of the country. Cancer figures among the leading causes of morbidity and mortality worldwide and its prevalence in urban India are seeing a discernible increase due to lifestyle modifications and adverse environmental exposures. In most developed countries, cancer mortality rates are declining,

primarily because of recent successes in effective interventions for prevention, early detection, and treatment. In contrast, in countries in transition, mortality rates are still increasing, or at best stabilizing.<sup>[1]</sup>

The burden of cancer is increasing in developing countries as a result of population aging and adoption of certain lifestyle choices like smoking, physical inactivity, and “westernized” diets.<sup>[2]</sup> This incorrectly has caused cancer to be perceived as the “Disease of the Rich,” since poorer sections of the society cannot afford such a lifestyle. However, since the diagnosis of cancer is usually expensive, it is diagnosed with higher frequency among the more affluent sections of the society. About three-quarters of Indians live in rural areas. Yet, mortality for specific cancers is estimated mostly with data from India’s 24 urban population-based cancer registries, with only two registries representing rural areas.<sup>[3]</sup> This leads to gross underestimation of the actual cancer burden and

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an incorrect assessment of health needs in the rural areas of the country. It is estimated that 57% (8 million) of new cancer cases and 65% (5.3 million) of cancer deaths in 2012 occurred in the less developed regions of the world.<sup>[4]</sup>

The incidence and pattern of cancer varies from country to country and from one region to another region within a large country like India. Being a culturally diverse country, India has big regional variation in lifestyles and in age-specific adult death rates.<sup>[5]</sup> Understanding the geographical and social distribution of specific cancers is essential for family physicians. It helps them identify the at-risk cases in their community and initiate early screening and management. India as a single country contributed to 7.8% of the global cancer burden and 8.2% of global cancer deaths in 2018.<sup>[6]</sup> Nearly fifteen lakh patients require facilities for diagnosis, treatment, and follow-up for cancer in India at a given time.<sup>[7]</sup> According to the WHO Cancer Report 2018, 1 in 10 Indians will develop cancer during their lifetimes, and 1 in 15 Indians will die due to cancer.<sup>[6]</sup>

Impact of cancer in India is far greater than the mere number of cancer cases and deaths. Its diagnosis causes immense psychological, economic, and emotional trauma to the patient and their families. The family physician remains the vital backbone for the prevention and treatment of cancer. They not only assist in the early identification of cancer patients and initiation of treatment but also provide professional expertise to the patients while they undergo arduous treatment regimes. Even after the initiation of treatment, patients and their families require continuous support from their family physicians regarding complications and treatment outcomes.

Our present study was conducted to study the socioclinical profile of the patients attending a tertiary care hospital in east Delhi for the treatment of cancer.

## Methods

A descriptive, longitudinal study was conducted at a private tertiary care hospital intended for research and treatment of cancer. Patients above the age of 18 years, who had been diagnosed with cancer but had not started treatment, were recruited for our study. Written consent was obtained from the participants before they were interviewed. The study was carried out from January 2017 to March 2018.

Hundred and forty-four patients were consecutively recruited, irrespective of the stage and site of cancer, treatment regimen or treating physician from the out-patient department of the hospital. Patients who were critically ill or those who were not able to comprehend the questionnaire were excluded from the study. The study participants were administered a self-prepared, semi-open-ended questionnaire to elicit their sociodemographic and clinical details. Another interview was conducted after 3 months from all the recruited individuals, to elicit their treatment profile, and the complications they experienced, if any.

Permission for carrying out the study was obtained from the Institutional Ethics Committee of the Hospital.

## Results

The mean age of all the study participants recruited in our study was 53.5 ( $\pm 12.36$ ) years. Approximately three-fourths of the participants were aged between 40 and 69 years. The youngest patient was 20 years old, and the oldest was 79 years old. There was a slight preponderance of male participants (53%) in our study [Table 1].

Ninety-nine study participants (~69%) were residents of the National Capital Region, a predominantly urban area. Of the 45 participants from outside NCR, 30 were residents of the state of Uttar Pradesh, five belonged to Bihar, four were from Uttarakhand, three from Rajasthan, two from Jammu and Kashmir, and one patient from Bangalore, Karnataka. Approximately 90% of the participants were married at the time of recruitment. Thirty-five participants had attained at least a graduate degree and ten participants had attained a postgraduate degree or higher. Thirty-two participants had not received any form of formal education [Table 1].

Majority of the participants in our study were housewives and hence were not involved in any income-generating

**Table 1: Distribution of study participants according to their sociodemographic factors**

Sociodemographic Factor	Categories	Total (n=144)	
		n	Percentage
Age (in years)	Below 30	22	15.28
	40-49	27	18.75
	50-59	40	27.77
	60-69	43	29.86
	Above 70	12	8.34
Sex	Male	76	52.78
	Female	68	47.22
Place of Residence	Delhi NCR	99	68.75
	Outside NCR	45	31.25
Marital Status	Married	129	89.58
	Widowed	11	7.64
	Never married	4	2.78
BMI (n=135)	Underweight	11	7.64
	Normal	81	56.25
	Overweight	52	36.11
Education Status	Illiterate	32	22.22
	Up to Middle School	29	20.14
	High School	23	15.97
	Intermediate	25	17.36
	Graduate and above	35	24.30
Occupation	Professional	21	14.58
	Business/Clerical	28	19.44
	Skilled	20	13.89
	Unskilled	17	11.80
	Unemployed	58	40.28
Type of Family	Nuclear	91	63.19
	Joint	53	36.80

work. Three participants had retired from their profession. Out of those employed, six participants were drivers, seven were farmers, seven were teachers, while a majority had their own private businesses. Two-thirds of the study participants belonged to a nuclear family. The average family size was 5.8 ( $\pm 3.2$ ) members. Nuclear families had an average of 4.5 members, while joint families had an average of 8.2 members [Table 1].

The most common complaints with which the study participants presented to the doctor were local pain (34%), local ulceration (33%), and/or local swelling (32%). Ninety-three (~65%) study participants were diagnosed with cancer within 3 months of experiencing their first symptom. Five participants, however, were diagnosed 2 years after experiencing their first symptom [Table 2].

Most participants (~48%) were diagnosed with cancers of the head and the neck region out of which sixty-one patients had cancers of the oral cavity, (e.g. buccal mucosa, retromolar trigone, tongue), while eight patients had cancers of the neck region (involving larynx, thyroid). Thirty-three patients (23%) had been diagnosed with breast cancer. Among

the fifteen participants diagnosed with cancers of the female genitourinary tract, ten had cancers of cervix, three had ovarian cancer, and two had cancer of endometrium. The youngest participant (aged 20 years) was the only recruited case diagnosed with Hodgkin's lymphoma. Of all participants recruited for the study, their physician did TNM staging for 118 of them. Only twelve of these patients had metastasized lesions [Table 2].

Of the 144 participants initially recruited for the study, treatment profile was obtained for only 122 due to loss to follow-up. Surgery, either alone or in combination with other therapies, was the most common modality of treatment, planned for 70.5% of the study participants. Chemotherapy was planned for half of the participants, while 40.2% of study participants were planned for receiving radiotherapy. Most participants underwent their therapy for a period of more than 2 months. With the exception of twenty-eight participants, all experienced at least one side effect of their treatment. Most common side effects reported were fatigue, generalized body pain, local reaction, anorexia, and/or nausea [Table 3].

Patients diagnosed with cancer of the head or neck region were more likely to undergo surgery ( $P = 0.018$ ), while those diagnosed with breast cancer were more likely to be administered chemotherapy as compared to other types of cancers and these differences were found to be statistically significant ( $P = 0.043$ ). Patients undergoing radiotherapy were more likely to suffer side effects of local redness, pain, and local ulceration ( $P < 0.001$ ), while those who underwent chemotherapy were more likely to have anorexia, weight loss, and nausea ( $P < 0.001$ ). Few study participants also reported having other chronic conditions like hypertension (20%), diabetes mellitus (18%), hypothyroidism (5%), and tuberculosis (2%).

**Table 2: Distribution of study participants according to their clinical factors at baseline**

Clinical Factor	Categories	Total (n=144)	
		n	Percentage
Comorbidities	Hypertension	29	20.14
	Diabetes Mellitus	26	18.05
	Hypothyroidism	8	5.55
	CAD	5	3.47
	Tuberculosis	3	2.08
	Others	5	3.47
	No Comorbidity reported	86	59.72
Site of Cancer	Head and Neck Region	69	47.92
	Breast	33	22.92
	Gastrointestinal Tract	17	11.80
	Female Genitourinary Tract	15	10.42
	Lung	6	4.17
	Prostate	3	2.08
Grade of Disease (n=118)	Localized	106	89.83
	Metastasized	12	10.17
Symptoms most frequently reported by the patient to their physician	Local Pain	50	34.72
	Local Ulcers	48	33.33
	Local Lump	47	32.64
	Bleeding Manifestations	21	14.58
	Loss of Appetite/Weight	14	9.72
	Hoarseness of Voice	12	8.33
	Trismus	6	4.17
Time taken from occurrence of first symptom to the patient being diagnosed with cancer	<1 month	35	24.30
	1-3 months	58	40.28
	3 months-1 year	41	28.47
	$\geq 1$ year	10	6.94

\*includes two patients having hepatitis B and one patient each with osteoarthritis, epilepsy and COPD

**Table 3: Distribution of study participants according to their clinical factors at follow-up**

Clinical Factor	Categories	Total (n=122)	
		n	Percentage
Treatment administered (n=122)	Surgery	36	29.51
	Radiotherapy	4	3.28
	Chemotherapy	18	14.75
	Surgery + Radiotherapy	19	15.57
	Surgery + Chemotherapy	17	13.93
	Chemotherapy + Radiotherapy	12	9.84
Duration of treatment (n=122)	Surgery + Chemo + Radiotherapy	16	13.11
	Less than a month	44	36.06
	1 to 2 months	11	9.02
Side effects of treatment (n=122)	More than 2 months	67	54.92
	No Complication	28	22.95
	Nausea	22	18.03
	Loss of Appetite/Weight	37	30.33
	Fatigue/Generalized Body ache	41	33.61
	Local Pain	39	31.97
Local Ulceration	32	26.23	

## Discussion

Our study is a descriptive study, conducted to understand the socioclinical profile of the patients who sought treatment for cancer from a tertiary care hospital in New Delhi. The incidence and pattern of cancer varies greatly across geographical regions. In a cosmopolitan city like Delhi, studying the profile of cancer patients will help establish the socioclinical pattern of how cancer presents across north India.

Majority of participants recruited in our study were aged between 40 and 69 years. In various hospital-based studies conducted across the country, Aggarwal *et al.* from Punjab<sup>[4]</sup>; Conjeevaram *et al.* from Andhra Pradesh<sup>[8]</sup>; Ashat *et al.* from Chandigarh<sup>[9]</sup>; and Bangal *et al.* from Maharashtra,<sup>[10]</sup> similar observations were made, with all of them reporting the largest incidence of cancer in the age group of 40–69 years. Incidence of cancer has been projected to increase in our country because of population growth and increasing life expectancy. In addition, awareness regarding risk of cancer, benefit of early screening and its predilection among geriatric population has also led to an increased number of middle-aged people consult their physicians on the advent of known symptoms.<sup>[11]</sup>

Most of the earlier studies have found a greater prevalence of cancer among women than men. Conjeevaram *et al.* reported the prevalence of cancer among women to be as high as 76.8%, while other studies have reported a marginal increase in the number of female cancer patients compared to men.<sup>[9,10]</sup> This was in contrast to our observations, with a higher number of male participants being recruited at the baseline assessment. One of the probable reasons for this could be that most participants in our study had cancer of the head and neck, including oral cancer, which has preponderance among males.

In the study conducted in Chandigarh,<sup>[9]</sup> analysis was done based on the place of residence of patients who were diagnosed with cancer, attending a tertiary care hospital. Of the 712 patients recruited for the study, 82% patients were from the adjoining states of Punjab, Haryana, and Himachal Pradesh. In our study, only 31% patients were from outside the Delhi NCR region. One explanation might be the sheer difference in population size of the two cities of New Delhi and Chandigarh, with more people residing in Delhi, the prevalence of cancer cases within the city was obviously higher. In addition, most patients residing outside NCR did not opt for the process of diagnosis and treatment so far away from their hometowns and preferred seeking treatment from nearby tertiary care centers. The financial implications of getting treated for cancer itself is a source of morbidity in previous studies conducted on mapping HRQOL among cancer patients.<sup>[12]</sup>

Since the majority of the patients in our study were in the age group of 40–69 years, 89% of our study participants were married. Aggarwal *et al.* had recruited 98% married cancer patients, Bangal *et al.* found 91.7% of cancer patients married, while Ashat *et al.* found 74.4% of their participants married.

In our study, around 42% of the study participants had at least an intermediate level of education, while 22% were illiterates. This was in stark contrast to the educational levels found in the state of Delhi, and other studies conducted across the country. As far as occupation is concerned, 57% had a professional or clerical nature of job. This substantiates the fact that virtually all patients who came for consultation in our study setting had a relatively affluent background.

In our study, 63% patients belonged to nuclear families. This is corroborating the fact that approximately 70% of families in India are nuclear.<sup>[13]</sup> However, Conjeevaram *et al.* reported as high as 92% patients belonging to nuclear families in their study.<sup>[8]</sup>

The Delhi Annexure of the Three-Year Report of Population-based Cancer Registries published by the National Cancer Registry Programme, ICMR in the year 2014, reports the relative proportions of cancers of all sites by gender and age groups. The cumulative incidence of all types of oral cancers is the highest among the men, compared to all other sites (19.41%). Cancers of the gastrointestinal tract (18.2%) is the second most common site, followed by lung (10.48%). For women, the most common site for cancer is breast (28.59%), followed by cancers of the reproductive tract (21.81%) and cancers of the gastrointestinal tract (16.39%). In our study, 71.4% of male participants were diagnosed with cancers of the oral cavity, 10.4% were diagnosed with cancer of the gastrointestinal tract, and only 8% were diagnosed with lung cancer. Nearly 49% of the female participants of our study were diagnosed with breast cancer. Approximately 22% were diagnosed with cancer of the reproductive tract, while 13.4% were diagnosed with cancers of the gastrointestinal tract. Other hospital-based studies conducted across the country also demonstrated the findings similar to the ones made in the Delhi Annexure of the Population-based Cancer Registry Report.<sup>[14]</sup>

A major reason for the difference in incidence rate in our study would be the inclusion criteria. Most patients being diagnosed with cancers of lung or gastrointestinal tract had been misdiagnosed previously and were being treated for certain other benign conditions (e.g. Tuberculosis), and thus could not be recruited.

Most cancers diagnosed were categorized as localized, metastasis being established in only 10% of the patients. Conjeevaram *et al.* reported that 10.4% of the patients recruited for their study had a Grade 4 disease, commonly associated with metastasis. This finding may be explained by increased awareness among the population regarding advantages of early screening. As is evident from the finding, most patients consulted the physician at our study setting within 1 to 3 months of experiencing symptoms. No association was found between the type of cancer and time taken for reporting to the hospital.

Fifty-eight study participants reported suffering from other co-morbidities as well, when they were diagnosed with cancer.



Ashat *et al.* reported that 25% of the patients they analyzed were diabetic. Previous studies have found associations between diabetes mellitus or hypertension with the incidence of cancer.<sup>[15]</sup> No association was found between the occurrence of certain types of cancer in our study participants who reported having diabetes and/or hypertension.

In our study, 53% patients were treated by a combination of therapies: surgery, chemotherapy, and radiotherapy. Conjeevaram *et al.* have described that 77% of the patients they enrolled in their study were treated by a combination of therapies. Surgery, alone or in combination, was administered to 72% patients. A major reason for this fact is that majority of the patients recruited in our study were diagnosed with oral cancers. According to most updated protocols, surgery remains the most preferred modality of treatment for cancers of the oral cavity.<sup>[16]</sup> In our study, 28 patients did not report any side effects from their treatment. The most commonly reported side effect was local pain following surgery or radiotherapy.

This study had few limitations. Due to the inclusion criteria of only recruiting patients who had not been previously treated for cancer, there was an inherent selection bias in our study. Many patients diagnosed with cancers of blood, lung, GIT, etc., were naturally excluded as they presented in a critically ill condition. Since our study setting was a private hospital, the treatment regimens were expensive and could only be afforded by the more affluent members of society.

Our findings have been analyzed from a single study setting. Results should be compared between multiple study settings for validation. Studies should have a longitudinal design with multiple follow-ups that capture health status up to one year after initiation of treatment as well. This will accurately register the quality of life among patients who have undergone long regimens of treatment.

## Conclusion

In our study, we have identified definitive sociodemographic determinants, which are observed in patients diagnosed with cancer. Screening programs should be drafted that target these demographic sections, which are specifically predisposed to developing cancer of different regions accordingly. Frontline service providers, like family physicians, can recognize these subsets at the earliest and ensure they undergo early diagnosis and treatment. We also observed that patients undergoing certain therapies were more likely to suffer certain specific side effects. The treating physicians need to be prudent about these complications before they initiate treatment for cancer. Family physicians will play a crucial role in palliative treatment, psychological support, and pain management for such patients. A well-structured counselling session that assuages the queries of the patient and their family regarding treatment failure and side effects needs to be incorporated in the treatment protocols for a better clinical outcome.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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## Conflicts of interest

There are no conflicts of interest.

## References

1. DeSantis CE, Bray F, Ferlay J, Lortet Tieulent J, Anderson BO, Jemal A. International variation in female breast cancer incidence and mortality rates. *Cancer Epidemiol Biomarkers Prev* 2015;24:1495-506.
2. Jemal A, Bray F, Center MM, Ferlay J, Ward E, Forman D. Global cancer statistics. *CA Cancer J Clin* 2011;61:69-90.
3. Indian Council of Medical Research. National Cancer Registry Programme. Three-Year Report of Population Based Cancer Registries 2006-2008: Incidence and Distribution of Cancer; 2010.
4. Aggarwal R, Manuja, Aditya K, Singh GPI. Pattern of cancer in a tertiary care hospital in Malwa region of Punjab, in comparison to other regions in India. *J Clin Diagnostic Res* 2015;9:XC05-7.
5. Office of the Registrar General of India. Report on causes of death in India 2001-2003. *Off Regist Gen India*. 2015;1-111.
6. Wild CP, Weiderpass E, Stewart BW. World Cancer Report: Cancer Research for Cancer Prevention. Lyon, France: International Agency for Research on Cancer 2020;258-65. Available from: <http://publications.iarc.fr/586>.
7. Kalyani R, Das S, Singh B, Kumar H. Cancer profile in the department of pathology of Sri Devaraj Urs medical college, Kolar: A ten years study. *Indian J Cancer* 2010;47:160.
8. Conjeevaram J, Conjeevaram R, Chandrasekhar V, Susmita KM. Profile of patients attending a district level cancer hospital - A cross sectional study. *Natl J Res Community Med* 2016;5:121-5.
9. Ashat M, Goel N, Puri S, Pandey A, Singh A, Kaushal V. Socio-demographic characteristics of cancer patients: Hospital based cancer registry in a tertiary care hospital of India. *Indian J Cancer* 2014;51:1.
10. Bangal RV, Giri PA, Bangal SV, More M, Singh KK. Socio-demographic profile and associated risk factors in cancer patients attending the Oncology OPD of a tertiary care teaching hospital in Western Maharashtra, India. *Int J Med Sci Public Heal* 2014;3:1389-92.
11. Jha P. Avoidable global cancer deaths and total deaths from smoking. *Nat Rev Cancer* 2009;9:655-64.
12. Upadhyay M, Sahu M, Kashyap S, Dugg P. Assessment of health related quality of life in cancer patients. *Int J Sci Res* 2017;6:40-3.
13. Registrar General and Census Commissioner of India G of

- I. Data Highlights: HH-1 Normal Households by household Size. 2001;1-6. Available from: [http://censusindia.gov.in/Data\\_Products/Data\\_Highlights/Data\\_Highlights\\_link/data\\_highlights\\_hh1\\_2\\_3.pdf](http://censusindia.gov.in/Data_Products/Data_Highlights/Data_Highlights_link/data_highlights_hh1_2_3.pdf).
14. ICMR G of I. Delhi Annexure of Three-Year Report of Population-based Cancer Registries, National Cancer Registry Programme, ICMR, 2012-14. 2016.
  15. Noh GY, Hwang D-Y, Choi YH, Lee YY. Effect of diabetes mellitus on outcomes of colorectal cancer. *J Korean Soc Coloproctol* 2010;26:424.
  16. Treatment Options for Oral Cavity and Oropharyngeal Cancer by Stage [Internet]. [cited 2018 Apr 26]. Available from: <https://www.cancer.org/cancer/oral-cavity-and-oropharyngeal-cancer/treating/by-stage.html>.