

Original Research Article

Prevalence of cancer among the urban and rural community of Surendranagar district, Gujarat

Nitesh M. Patel¹, Pratik K. Jasani^{1*}, Girija P. Kartha¹, Sweta N. Patel²

¹Department of Community Medicine, C.U. Shah Medical College, Surendranagar, Gujarat, India

²Shanku Medicity Hospital, Mehsana, Gujarat, India

Received: 11 March 2019

Accepted: 28 March 2019

*Correspondence:

Dr. Pratik K. Jasani,

E-mail: pkjas007@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Non-communicable diseases (NCDs) are mainly cardiovascular diseases, cancers, chronic respiratory diseases and diabetes-are the world's biggest killers. In developing countries, cancer is among the ten most common causes of mortality. Cancer is not just one disease but many diseases. There are more than 100 different types of cancer. The most conspicuous feature of the distribution of cancers between the sexes is the male predominance of lung cancer. Prostate, colorectal, stomach and liver cancer are also much more common in males. Cancer of breast, colorectal, cervix, uteri, lung and stomach are common in females. This study was conducted to identify the prevalence of various types of cancers in rural and urban community of Surendranagar district.

Methods: It was a cross-sectional study carried out among 300 rural and 300 urban families selected by simple random sampling. Data was collected and analysed by Statistical Package for Social Sciences and Microsoft Excel have been used to generate graphs, tables, etc.

Results: Study revealed that out of total study population (2053), 37 participants were having cancer. The prevalence of cancer was 1.80% in our study. Out of 37 respondents who were having cancer, majority cases were oral cancer 11 (29.73%) and 9 (24.32%) lung cancer, followed by cancer breast 5 (13.51%), cancer colorectal 5 (13.51%) and other cancers 7 (18.92%).

Conclusions: Prevalence of cancer was increasing with the age. Higher number of cancer cases was found amongst older age than younger age. Significant difference was found between cancer prevalence and gender.

Keywords: Prevalence, NCDs, Cancer, Gender

INTRODUCTION

Non-communicable diseases (NCDs) are biggest killers in the world which include cardiovascular diseases, cancers, chronic respiratory diseases and diabetes. Cancer is among the most common causes of mortality in developing countries.¹ At present, various types of non-communicable diseases are also known as modern day epidemics. Among these modern epidemics, cancer is the second most common cause of mortality in developed countries. Cancer is defined as abnormal growth of cell. It can affect any tissue or organ of body.²

Cancer is not only one, but many diseases. There are over 100 different known cancers that affect humans.³ Developed and developing countries shares the unequal burden of cancer. Each particular type of cancer exhibits different patterns of distribution.⁴ Male predominance of lung cancer is the most observable feature of the distribution of cancers between the sexes. Among men, the five most common sites of cancers diagnosed were lung, Prostate, colorectal, stomach and liver respectively. Most common cancer site among female was breast followed by colorectal, cervix, uteri, lung and stomach.⁵

During the year 2012, it is estimated that 10.15 lac new cancer cases (incidence of cancer) occurred in the country. Among them 4.77 lac were males and 5.37 lac were females. It gives an incidence rate of 92.4 per lac population. About 6.83 lac persons (3.57 lac males and 3.26 lac females) dies of cancer in the same year which gives a mortality rate of 69.7 per lac population.⁶ Prevalence of cancer means total number of cancer cases (new cancer cases+old cancer cases) in a specified population. The Indian Council of Medical Research (ICMR) said in 2016, the total number of new cancer cases is expected to be around 14.5 lakh and the figure is likely to reach nearly 17.3 lakh new cases in 2020. Data also revealed that only 12.5 per cent of patients come for treatment in early stages of the disease.⁶

In this context, this study was conducted to identify the prevalence of various types of cancers in rural and urban community of Surendranagar district.

METHODS

This was a cross-sectional study carried out in urban (Wadhwan and Ratanpar) and rural (Sayla and Khodu) areas of Surendranagar district from August 2016 to March 2017. 300 families from urban and 300 from rural were selected so that the total sample was 600 families. Among those families, participants aged >18 years were

included in our study (except those who were absent and not giving consent). The rural sample included 150 families from Sayla area and 150 families from Khodu area of Surendranagar and urban sample has included 150 families from Ratanpar area and 150 families from Wadhwan area of Surendranagar district through household survey. Confidentiality issues have been maintained and appropriate oral/written consent was taken in appropriate language from participants. The study was carried out through oral questionnaire method using pre designed and pretested questionnaire. The data was analyzed by Statistical package for Social Sciences (SPSS) and Microsoft Word and Excel have been used to generate graphs, tables etc.

RESULTS

The study shows that out of total 2053 respondents around 956 (46.56%) were belonging to urban area and 1097 (53.44%) were belonging to rural area. Total number of males 512 (53.56%) and 620 (56.52%) were higher in comparison with females 444 (46.44%) and 477 (43.48%) in both urban and rural area respectively. As per age group distribution, majority of study population was belonging to the age group of 18 to 35 years 770 (37.31%), followed by 36 to 50 years 731 (35.61%) and more than 50 years 552 (26.89%) in both area (Table 1).

Table 1: Distribution of study population according to their age and sex among urban and rural area (n=2053).

Age groups (in years)	Urban (n=956)		Rural (n=1097)		Total No. N (%)
	Male N (%)	Female N (%)	Male N (%)	Female N (%)	
18 to 35	218 (22.80)	168 (17.57)	226 (20.60)	158 (14.40)	770 (37.31)
36 to 50	158 (16.53)	148 (15.48)	233 (21.24)	192 (17.50)	731 (35.61)
>50	136 (14.23)	128 (13.39)	161 (14.68)	127 (11.58)	552 (26.89)
Total	512 (53.56)	444 (46.44)	620 (56.52)	477 (43.48)	2053 (100)

Out of 2053 respondents majority 1926 (93.81%) were Hindu by religion and Muslims constituted about 127 (6.19%) of the total study population. According to Modified Prasad's classification of socio-economic status about 26% of respondents belonged to class- I, about 20% to class- II, 19% belonged to class- IV, 18% belonged to class- III and 17% respondents belonged to class- V respectively. There were higher number of respondents from class-I found in rural area and higher number of respondents from class-III, IV and V were found in urban area.

Out of total study population (2053), 37 participants were having cancer. The prevalence of cancer was 1.80% in our study (Figure 1).

Out of 37 respondents who were having cancer, majority cases were oral cancer 11 (29.73%) and 9 (24.32%) lung cancer, followed by cancer breast 5 (13.51%), cancer

colorectal 5 (13.51%) and other cancers 7 (18.92%) (Figure 2).

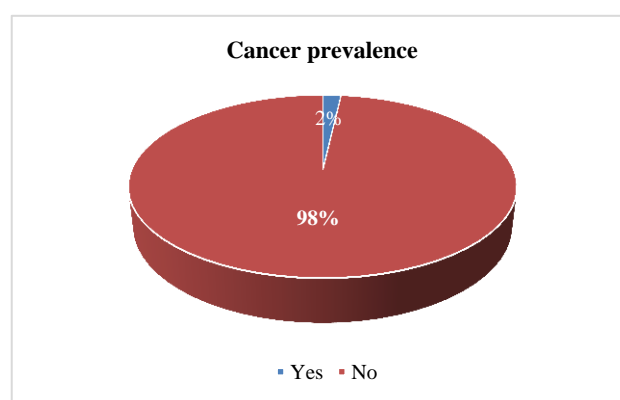


Figure 1: Prevalence of cancer among study population (n=2053).

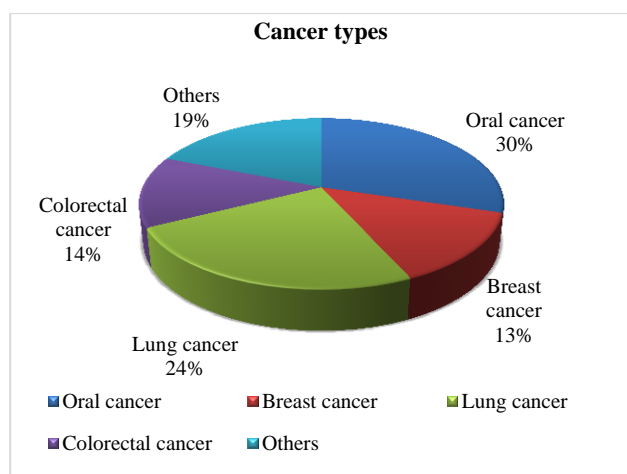


Figure 2: Prevalence of various types of cancers (n=37).

Table shows that out of 37 cancer patients, 21 patients (2.20%) were from urban area and 16 patients (1.46%) were from rural area. There was not much difference between urban and rural area regarding cancer prevalence. Among 37 cancer patients, 6 patients were diagnosed as having cancer in last 1 year (Table 2).

Table shows that around 3% males (30) and 1% females (7) were diagnosed as having cancer. Statistically significant difference was found between gender and cancer prevalence (Table 3).

In this study the prevalence of cancer was least in the age group of 18-35 years 5 (13.52%). The prevalence was 32 (86.48%) in the age group of 36 years and above. Increased cancer prevalence was seen with the older age group. This difference was statistically significant (Table 4).

Table 2: Prevalence of cancer among urban and rural area (n=2053).

Prevalence of cancer	Urban	Rural	Total	
	N (%)	N (%)	N (%)	
Yes	21 (2.20)	16 (1.46)	37 (1.80)	$\chi^2 = 1.573$, df=1, p<0.209
No	935 (97.80)	1081 (98.54)	2016 (98.20)	
Total	956 (100)	1097 (100)	2053 (100)	

Table 3: Sex wise distribution according to their cancer prevalence (n=2053).

Cancer prevalence	Yes	No	Total	
	N (%)	N (%)	N (%)	
Male	30 (2.65)	1102 (97.35)	1132 (55.14)	$\chi^2 = 10.25$, df=1, p<0.001
Female	7 (0.76)	914 (99.24)	921 (44.86)	
Total	37 (1.81)	2016 (98.19)	2053 (100)	

Table 4: Age wise distribution according to cancer prevalence (n=2053).

Age groups (in years)	Yes	No	Total	
	N (%)	N (%)	N (%)	
18 to 35	5 (0.65)	765 (99.35)	770 (37.51)	$\chi^2 = 9.815$, df=2, p<0.0073
36 to 50	20 (2.74)	711 (97.26)	731 (35.61)	
>50	12 (2.17)	540 (97.83)	552 (26.89)	
Total	37 (1.80)	2016 (98.20)	2053 (100)	

DISCUSSION

Study was conducted for the period of one month i.e. 1st Out of 2053 study population, around 37% were in the age group of 18-35 years followed by 27% above 50 years of age group, 36% between age group of 35-49 years.

The gender wise distribution of 2053 study population shows that there were 55% male and 45% female, in this study group. According to Census 2011 of Surendranagar, percentage distribution of the male and female were 52.41% and 47.65% respectively which is comparable.⁷

Present study showed that 1.80% (37) population were suffering from any type of cancer. There was not much difference among urban and rural area regarding cancer prevalence.

More Indian women than men are diagnosed with cancer every year. It is reflected in insurance statistics that show more women in our cities claim medical insurance for cancer treatment. But when it comes to cancer-related fatalities, the figures turn upside down: more men die of cancer annually than women. In all, 5.37 lakh Indian women were diagnosed with cancer in 2012 as against 4.77 lakh men, according to the World Cancer Report. The same year, 3.56 lakh men died of the disease in

comparison to 3.26 lakh women.⁸ A study done by Dikshit et al also stated that there was no such difference between male and female regarding cancer.⁹ But our study reflected different result, number of male respondents with cancer were relatively higher in comparison with female respondents with cancer, and also the result was statistically significant.

When individual gets older, the risk of many chronic diseases increases. In present study it was seen that risk of cancer increases with the increasing age, higher prevalence of cancer found in the age group of more than 36 years, while it was lower in the people aged less than 36 years and the statistically significant association seen between increasing age and cancer. Similar results were found in a study done by Yashin et al.¹⁰

In our study patients who had cancer, oral cancer tends to be the highest among them with around 30% prevalence followed by cancer lung (24%), cancer breast (14%), cancer colorectal (14%) and other cancers (18%). A study done by Bangal et al showed cervical cancer commonest followed by breast, oral and lung cancer, and by Puri et al which was different than our result.^{11,12}

CONCLUSION

Overall prevalence of cancer was found to be 1.80% among study population. It was equally distributed among urban and rural community. Prevalence of cancer was also increasing with the age. Higher number of cancer cases was found amongst older age than younger age. Significant difference was found between cancer prevalence and gender.

Recommendations

Making people aware of the risk factors of cancer and reducing the exposure of risk factors in them can drastically reduce the incidence of cancer. Individuals who are already exposed to risk factors, should be prevented from further exposure to the risk factors and regular screening for cancers in them can reduce the mortality and morbidity from cancer.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Park K. Textbook of Preventive and social medicine, 24th edition, Epidemiology of chronic non-communicable diseases and conditions, 2015: 380-410.
2. Mathur A, Jain M, Shiva M, Navlakha M, Prabu, Kulkarni S. Tobacco Habits and Risk of Oral Cancer. Iranian J Blood Cancer. 2009;1(3):111-6.
3. National Cancer Institute. Available at: <https://www.cancer.gov/about-cancer/understanding/what-is-cancer>. Accessed on 3 June 2018.
4. WHO, Press Release No. 223, 12 Dec. 2013. Latest World Cancer Statistics, 2013.
5. GLOBOCAN 2013, World Fact Sheet, (2013), Section of Cancer Information, International Agency for Research on Cancer, Lyon, France, 2013.
6. Available at: <http://www.mid-day.com/articles/over-17-lak-new-cancer-cases-in-india-a-by-2020-icmr/17248152>. Accessed on 3 June 2018.
7. Census 2011. Available at: www.census2011.co.in/census/district/189-surendranagar.html. Accessed on 3 June 2018.
8. Cancer strikes more Indian women, but kills more men, Feb 04, 2015: The Times of India (Delhi), Available at: <http://epaperbeta.timesofindia.com/Article.aspx?eid=31808&articlexml=Cancer-strikes-more-Indian-women-but-kills-more-04022015001093#>. Accessed on 3 June 2018.
9. Dikshit R, Gupta PC, Ramasundarahettige C, Gajalakshmi V, Aleksandrowicz L, Badwe R, et al. Cancer mortality in India: a nationally representative survey. Lancet. 2012;379(9828):1807-16.
10. Ukraintseva S, Yashin A. Individual Aging and Cancer Risk: How Are They Related? Demographic Res. 2003;9:163-96.
11. Bangal RV, Giri PA, Bangal SV, More M, Singh KK. Socio-demographic profile and associated risk factors in cancer patients. Int J Med Sci Public Health. 2014;3(11):1389-92.
12. Puri S, Ashat M, Pandey A, Goel NK, 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;51:1-4.

Cite this article as: Patel NM, Jasani PK, Kartha GP, Patel SN. Prevalence of cancer among the urban and rural community of Surendranagar district, Gujarat. Int J Community Med Public Health 2019;6:1892-5.