Assessment of Awareness and Presence of Risk Factors for Cancer in a Rural Community Of Uttarakhand, India

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Abstracts: **Background:** Cancer has become one of the major threats to public health in the developed world and increasingly in the developing world. Cancer rates in India are lower than those seen in western countries, but are rising with increasing migration, increase in life expectancy and changes in lifestyles. This study was planned to elicit the presence of risk factors for cancer in a rural community and to assess the awareness of people about risk factors of cancers. **Methods and Material:** This cross sectional study was conducted in a randomly chosen block in district Dehradun. Overall 1731 people were interviewed by trained personnel and data was entered and analysed in SPSS software (21.0 versions). **Results:** Overall 9.7 % respondents reported presence of the warning symptoms of different cancers. Regular smokers were 7.3% (16.3 % males and 1.4 % females), while 8.3 % respondents (males-18.6%, females-1.4%) accepted regular use of smokeless tobacco. 87 % of the surveyed people had the knowledge that cancer can be prevented by changing the lifestyle. **Conclusions:** Increasing incidence of various cancers is of concern to the public health. In developing countries like ours, preventive programs should be directed towards masses with focus on behaviour change communication. [Juyal R NJIRM 2014; 5(4) :47-50]

Key Words: Awareness, Cancer, Community, Risk Factors

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Introduction: The global burden of Non-communicable diseases (NCDs) continues to grow; tackling it constitutes one of the major challenges for development in the twenty-first century. NCDs, principally cardiovascular diseases, diabetes, cancers, and chronic respiratory diseases, caused an estimated 35 million deaths in 2005. This figure represents 60% of all deaths globally, with 80% of deaths due to non-communicable diseases occurring in low- and middle-income countries, and approximately 16 million deaths involving people less than 70 years of age[1].

Cancer has become one of the major threats to public health in the developed world and increasingly in the developing world[2]. It is the second largest non-communicable disease having a sizable contribution in the total number of deaths[3]. It is estimated that by 2020, cancer will kill more than 10 million people per year worldwide, with 7 million of those deaths occurring in countries that can least afford health care. However, it is worthwhile mentioning that a greater proportion of cancer deaths in the developing nations are preventable compared to the Western world[4].

Cancer rates in India are lower than those seen in Western countries, but are rising with increasing migration of rural population to the cities, increase in life expectancy and changes in lifestyles. In India, rates for oral and oesophageal cancers are some of the highest in the world. In contrast, the rates for colorectal, prostate, and lung cancers are one of the lowest[5]. It is estimated that there are 2 million cancer patients in India with 0.7 million new cases each year. Cancer is the third greatest cause of death with 0.4 million deaths per annum, and is thus a major public health problem in India[6].

The major risk factors for cancer are tobacco, alcohol consumption, infections, unhealthy dietary habits and behavioural risk factors. Unhealthy lifestyles such as tobacco smoking, unhealthy diet, excessive alcohol consumption and physical inactivity are having an unprecedented impact on the health of the public[7].

Uttarakhand was carved out about two decades back from its parent state Uttar Pradesh. Till date scarce or no community based data is available on the prevalence of risk factors for cancer in Uttarakhand. So this study was planned to know the magnitude of the risk factors in the area as well as awareness of the community related to cancer risk factors, so as to plan for future interventions.

Material and Methods: Multistage random sampling was adopted to achieve the required sample size. This cross-sectional study was conducted in Doiwala block of district Dehradun, Uttarakhand; which was selected randomly out of six blocks. This block has 9 Primary Health Centres (PHCs), out of which one PHC was selected randomly. In the next stage, 50% subcentres of the chosen PHC (i.e. 3) were randomly selected. The population above 20 years of age residing in the chosen sub-centre areas formed the sample universe. 10% of the population of these SCs formed the sample size. As the cumulative population of the chosen SCs was 17,305; the sample size came out to be 1731 .The sample size was completed by applying PPS (probability proportional to sample size). Awareness as well as presence of risk factors for cancer were assessed by personal interview method. Information was collected by trained health workers using a predesigned, pretested questionnaire in local language. The data so collected was entered in excel sheet and SPSS software (21.0 version) and analysed.

Result: A total of 1731 subjects participated in the study, out of them 694 (40.1 %) were male and 1037 (59.9 %) were females. Most of the subjects belonged to younger age group i.e. 21- 30 years (40.5 %), followed by 31-40 years. In age group > 60 years, only 65 (3.8 %) subjects could be interviewed. The mean age of the respondents was 36.13 ± 12.03 years (max - 93 years, min -20 years). Literacy was significantly higher in males (94 %) as compared to females (85.7 %). It was seen that overall 168 respondents (9.7 %) reported presence of the warning symptoms of different cancers in the surveyed area.

Table 1: Distribution of Subjects by Body Mass Index (BMI)

BMI (Kg/M^2)	Male (N=694)	Female (N=1037)	Total (N=1731)
< 18.5	51(7.3)	96(9.2)	147(8.5)
18.5-24.99	468(67.4)	696(67.1)	1164(67.2)
25-29.99	153(22.0)	208(20.0)	361(20.9)
≥ 30	22(3.2)	37(3.4)	59(3.4)

(Figures in parentheses are percentages)

Overall 67.2 % of the respondents were in normal BMI range i.e. 18.5- 24.99 Kg/M^2 (Table-1). Approximately 21% subjects were overweight and 3.4% were obese. More females were obese (BMI – 30 or more) than males, but this difference was not statistically significant.

Table 2: Distribution of Subjects by Tobacco and Alcohol Use

Addictions	Male (694)	Female (1037)	Total (1731)	P value
Smoking	113 (16.3)	14 (1.4)	127 (7.3)	<0.001
Smokeless Tobacco	129 (18.6)	15 (1.4)	144 (8.3)	<0.001
Alcohol	235 (33.9)	20 (1.9)	255 (14.7)	<0.001

(Figures in parentheses are percentages)

About 16.3 % of the males and 1.4 % of the females were regularly smoking tobacco in the surveyed population. Overall 8.3 % respondents (males-18.6%, females- 1.4%) accepted regular use of smokeless tobacco. About 15 % of the subjects were regularly consuming alcohol (males-33.9%, females-1.9%).The consumption of tobacco and alcohol was found to be significantly more in males.

Table 3: Distribution of Subjects by Dietary Habits

Eating Habits	Male (694)	Female (1037)	Total (1731)	P value
Non-vegetarian	536 (77.2)	697 (67.2)	1233 (71.2)	<0.001
Fruits	272 (39.2)	312 (30.1)	584 (33.7)	<0.05
Vegetables	672 (96.8)	1015 (97.9)	1687 (97.5)	>0.05

(Figures in parentheses are percentages)

It was seen that 71% of the subjects were non-vegetarian (males- 77.2%, females-67.2%); while more than 90% were eating 2- 3 portions of vegetables daily, only about one third of the respondents were consuming fruits daily. Males were consuming non-vegetarian food as well as fruits (2-3 portions per day) significantly more than females.

Table 4: Awareness Regarding Lifestyle Risk Factors for Cancer

Etiology of cancer	Male (694)	Female (1037)	Total (1731)	P value
Lifestyle	297 (42.8)	443 (42.7)	740 (42.7)	p>0.05
Obesity	149 (21.5)	193 (18.6)	342 (19.8)	p>0.05
Unhealthy diet	89 (12.8)	82 (7.9)	171 (9.9)	P<0.001
Tobacco	353 (50.9)	464 (44.7)	817 (47.2)	P<0.05
Alcohol	19 (2.7)	41 (4.0)	60 (3.5)	p>0.05

(Figures in parentheses are percentages)

On probing for causes of cancer, various causes enumerated included tobacco and alcohol consumption, lifestyle changes, obesity and unhealthy diet etc. Of the total, 817 (47.2%) could correlate tobacco use in any form to be causing cancer. Another causal factor so identified was changed lifestyle (42.7%) followed by obesity (19.8%). It was seen that the awareness was significantly more in males about carcinogenic nature of tobacco and preventive role of healthy diet in cancer prevention.

Table 5: Awareness Regarding Preventable Aspect of Cancer by Education

Education	Awareness	
	Yes	No
Illiterate	135 (67.2)	66 (32.8)
literate up to Primary	197 (78.8)	53 (21.2)
Primary to Inter	755 (90.1)	83 (9.9)
Gr n above	423(95.7)	19 (4.3)
Total	1510 (87.2)	221 (12.8)

(p<0.001, χ^2= 82.24)

Most of the surveyed people (87%) had the knowledge that cancer can be prevented by changing the lifestyle, particularly by improving the diet; but on asking details, most of them were not able to answer. There was no significant difference in the knowledge of males and female respondents. It was seen that awareness level improved significantly with the education. On comparing the awareness of illiterate subjects with literate ones, the difference was found to be highly significant.

Discussion: The burden of cancer is increasing in developing countries as deaths from infectious diseases and childhood mortality are declining and more people live to older ages when cancer most frequently occurs as well as due to adoption of so called western lifestyle.

The World Health Organization documents that cancer rates are set to increase at an alarming rate globally and it is projected by the WHO that cancer burden would increase to 20 million by 2020 with 70% in the developing world[8].

In our study, approximately 21% subjects were overweight and 3.4% were obese. About 10% of the respondents reported presence of the warning signs of different cancers in them; still most of them were ignorant to seek medical care for it.

In our study, approximately 10 % study subjects reported presence of the one or more warning symptoms of different cancers. This however does not mean that they are potential candidates for development of concerned cancers. All of them were counselled for frequent checkups from the nearest health facility.

About 16.3 % of the males and 1.4 % of the females were regularly smoking tobacco and 8.3 % respondents (males-18.6%, females- 1.4%) accepted regular use of smokeless tobacco in the surveyed population. In our study, males smoked significantly more than females which are similar to the findings in studies done in Pokhra[9] and Western Nepal[10].

Overall, about 15 % of the subjects were regularly consuming alcohol (males-33.9%, females-1.9%).The consumption of tobacco and alcohol was found to be significantly more in males. It was seen that 71% of the subjects were non- vegetarian; while more than 90% were eating 2- 3 portions of vegetables daily.

On probing for causes of cancer, various causes enumerated included tobacco and alcohol consumption, lifestyle changes, obesity and unhealthy diet etc. Although tobacco control merits the highest priority in the fight against cancer and in this regard many steps are being taken worldwide, but only 47.2% of the respondents in the present study could correlate tobacco use in any form to be causing cancer. This is in accordance to study done in Chandigarh[11], where only one third slum respondents could correlate the relation between smoking and cancer. In contrast in a study in New Delhi[12], it was reported that almost 90% respondent knew about tobacco to be a risk factor for cancer.

Another causal factor so stated for cancers was changed lifestyle (42.7%) followed by obesity (19.8%). It was seen that the awareness was significantly more in males about carcinogenic nature of tobacco and preventive role of healthy diet in cancer prevention.

It was seen that 87 % of the surveyed people had the knowledge that cancer can be prevented by changing the lifestyle, particularly by improving diet; but on asking details, most of them were not able to answer. It was seen that awareness level improved significantly with the education.

Conclusion: Increasing incidence of various cancers is of concern to the public health. Analysis of this study revealed that awareness was lacking at all levels. People continued to use tobacco, in spite of knowledge of its relation to cancer causation. Although the intake of vegetables and fruits was good, but their protective role in cancer was not known to majority of subjects. In developing countries like ours, owing to scarcity of resources for diagnostic and treatment facilities, combined preventive and curative efforts are needed. Educational program should be developed to promote adherence to recommended screening guidelines. The preventive programs should be directed towards masses with focus on behaviour change communication

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