

# EFFECT OF A HEALTH EDUCATION PROGRAM ON CANCER AWARENESS AMONG COLLEGE STUDENTS: RESPONDING TO THE CHALLENGES OF CANCER CONTROL IN INDIA

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## ABSTRACT

**Background:** Cancer is a major public health problem worldwide. One of the most cost effective strategies identified for better cancer control is emphasis on health education.

**Aims & Objective:** This study was undertaken to explore knowledge and awareness of the students of degree colleges about cancer and also to assess the impact of health education on improving awareness about cancer on these students.

**Material and Methods:** The study is a descriptive interventional study with pre and post intervention evaluation. Knowledge about cancer was assessed before and after a short lecture with the help of predesigned, pre tested, semi structured proforma. A total of 563 students were included in the study.

**Results:** Knowledge about cancer was found to be lacking among students as assessed in various spheres such as epidemiology (59.86%), clinical features (22.75%), diagnosis (41.0%), treatment (41.39%) and preventive measures (63.94%). Statistically significant improvement in knowledge was found after health education. The percentage of students with poor knowledge was reduced from 43.16% to only 18.47% following health education.

**Conclusion:** The method of health education through group approach should be applied at community level because health education is an effective tool to increase the knowledge and awareness regarding cancer.

**Key-Words:** Cancer; Awareness; Health Education; College Students; India

## Introduction

Cancer is a major public health problem worldwide. Estimated prevalence of cancer in India is around 2 to 2.5 million with about 0.7 million new cases occurring every year. Out of these nearly half die every year.<sup>[1]</sup> The earliest initiatives of cancer control in India date back to 1975 when Government of India first launched a National Cancer Control Programme. Since then India has come a long way. In 2010, the National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular diseases and Stroke was launched for better control of non-communicable diseases. Despite these efforts, the cancer control in India is still in the fledgling stages.<sup>[2]</sup> The scenario in India is complicated and influenced adversely by lack of awareness in the community, social taboos and stigma leading to advanced presentation, rampant tobacco use, poverty and resource crunches. The single most cost effective strategy identified for better cancer control was emphasis on primary prevention. The success of a public health program for cancer control depends to a large extent on the level of awareness among the potential beneficiaries about different aspects of the disease. Youth in any society is a viable resource; they have the tremendous power to

bring change in the society and hence intensive health education interventions should be targeted towards them.

Various studies are available on the level of knowledge about cancer among college students in India.<sup>[3-8]</sup> Results from these studies indicate that there is an urgent need for a reinvigorated and tailored approach to promote health education to increase awareness about cancer prevention and treatment among the educated youth in India. The next logical approach, as substantiated by various studies would be to assess the impact of health education to improve awareness regarding cancer.<sup>[9-11]</sup> But unfortunately, scanty data is available from India regarding the impact of health education. Also, in most cases they have specifically focussed on individual malignancies like breast cancer<sup>[4,12]</sup> or cervical cancer<sup>[6]</sup> and their specific interventions. The current study is not limited to a specific malignancy but rather focuses on various risk factors and preventive aspects of all common cancers in general and hence portends to be more helpful. So the current study was undertaken with the objective of exploring knowledge and awareness of the students of degree colleges about cancer and also to assess the impact of health education on improving awareness about cancer on these students.

## Materials and Methods

A descriptive interventional study was designed with pre and post intervention evaluation among college students in Raipur, Chhattisgarh from a period of September 2011 to November 2011. Among the major Colleges representing Raipur, five colleges were randomly selected for the study. The college authorities were explained about the nature of study and permission was taken. The students were informed about the purpose and procedure of the study and consent was taken. Then their knowledge was assessed before and after a short lecture with the help of proforma. A predesigned, pre tested, semi structured questionnaire was used. Proforma included about cancer its occurrence, sign and symptoms, type of treatment, persons affected, and institution where treatment is available. The questionnaire contained a total of 16 questions. Questions were broadly grouped as based on epidemiology (7 questions), clinical features (1 question), diagnosis, management and prevention (8 questions). The answers were grouped in 3 categories correct, incorrect and don't know. For each correct answer 1 mark was awarded and for incorrect and don't know 0 was given. Maximum marks scored were 16 and minimum was 0.

This was followed by health education intervention in the form of Information, Education and Communication (IEC) activity. A short lecture of 1 hour along with demonstration was delivered by qualified doctors regarding the problem statement, pathogenesis, preventive measures and all other aspects of cancer. The previous questionnaire was then re administered to the students after the lecture.

Of the total 893 students in the five colleges, a total of 563 students were present at the college on the day of the survey and gave their consent for the study. Data was compiled and analyzed using SPSS 16.0 version.

## Results

Of the 563 students, 141 (25.04%) were male, while 422 (74.96%) were female. Majority of the participants belonged to the age group of less than 20 years (53.81%). [Table 1]

Knowledge prior to health education intervention was found to be maximum in epidemiology (59.86%). The study found that all respondents were aware of cancer. Among the cancers enumerated, most common was lung cancer by 76.8%, followed by oral cancer by 69.3% and breast cancer by 64.3%. Though cervical cancer is the most

common cancer among women in India, only 32.1% were aware of cervical cancer. Only 21.67% correctly identified the most common cancer among females prevalence wise. 64.47% of the respondents were aware of the most common cancer among males in India. 80.99% respondents wrongly believed that cancer is a communicable disease. The majority of the respondents perceived cancers to be caused by viruses, which can spread from one person to another.

Knowledge about clinical features was poor. Only 22.75% correctly identified one or more symptoms associated with cancer. Most common symptom reported was that of non-healing ulcer, persistent cough or blood in sputum. Participants were also not aware that there are different stages of cancers and cancer at initial stage may be easily curable

Knowledge about diagnostic modalities was the worst with only 41.0% responding correctly. Most respondents believed cancer was incurable. Others thought that treatment was only available abroad and too expensive to be affordable. Only 41.39 % were aware of the treatment modalities available or that treatment of cancer was available in India.

Knowledge regarding preventive measures was marginally better. 63.94% correctly identified one or more risk factors associated with cancer. 41.40% were aware of one or more preventive measures against cancer. Most common preventive measure enumerated was abstinence from smoking. Only 6.1% were aware that certain cancers can be prevented by vaccines. Most common identified risk factor was tobacco use including smoking or chewing by 89.8%.

Statistically significant improvement in knowledge was found after health education. The knowledge scores were arbitrarily scored as poor less than or equal to 8 (50%) while scores more than 8 was graded as good. The percentage of students with poor knowledge was reduced from 43.16% to only 18.47% following health education (Table 2). Pre-intervention, the average score of students was 8.3 out of 16 marks (51.93%). Post-intervention, the average score of students improved to 12.22 out of 16 marks (76.37%). The change in knowledge was observed in all 563 students and the average increase in knowledge was by 24.44%. This increase in knowledge was statistically significant (Table 3). The highest increase in any single question was seen in the question "Common cancer in India in female" and the increment was of 49.02% (Table 4).

**Table-1:** Age and sex wise distribution of students under study

Age (Years)	Males N (%)	Females N (%)	Total N (%)
<20	44 (7.81)	259 (46.00)	303 (53.81)
20-25	45 (7.99)	122 (21.67)	167 (29.66)
26-30	24 (4.26)	12 (2.13)	36 (6.4)
>30	16 (2.84)	21 (3.73)	37 (6.57)
31-40	12 (2.13)	8 (1.42)	20 (3.56)
Total	141 (25.04)	422 (74.96)	563 (100)

**Table-2:** Knowledge scores pre and post intervention (health education)

Knowledge Category	Knowledge Score	Pre Test		Post Test	
		N	%	N	%
Poor	≤ 8	243	43.16	104	18.47
Good	>8	320	56.83	458	81.34

**Table-3:** Changes in knowledge scores of specific aspects of cancer pre and post intervention

Knowledge	Pre		Post		t	df	P value
	Interventional Score	Interventional %	Interventional Score	Interventional %			
Epidemiology (q=7)	4.19	59.86	5.65	66.6	7.6	562	< 0.001
Clinical Features (q=1)	0.45	22.75	0.91	66	6.06	562	< 0.001
Diagnosis (q=2)	0.82	41.0	1.35	60	7.23	562	< 0.001
Management (q=6)	2.99	49.83	4.66	76.7	9.82	562	< 0.001
Average Total Score	8.31	51.93	12.22	76.37	20.74	562	< 0.001

p < 0.001 (Highly significant)

**Table-4:** Question wise increase in knowledge scores among students

Sr. No.	Question	Pre		Post		Increase in Knowledge (%)
		No.	%	No.	%	
1	Cancer affects which sex	481	85.43	526	93.42	7.99
2	Cancer affects which age-group	316	56.12	479	85.08	28.95
3	Common cancer in male in India	363	64.47	449	79.75	15.27
4	Common cancer in female in India	122	21.76	398	70.69	49.02
5	Is cancer communicable	456	80.99	500	88.81	7.81
6	Is cancer hereditary	335	59.50	400	71.05	11.54
7	Conditions/habits/factors causing cancer	360	63.94	522	92.72	28.77
8	Symptoms of cancer	236	41.91	480	85.26	43.44
9	Cancer affects which body parts	259	46.0	439	77.97	31.97
10	Survival of patient depends upon	236	41.91	500	88.81	46.90
11	Cancer is fatal or curable	489	86.86	524	93.07	6.21
12	T/t of cancer available in India	233	41.39	445	79.04	37.66
13	T/t of cancer available in Chhattisgarh	165	29.30	461	81.88	52.57
14	Cancer is treated by	254	45.11	492	87.39	42.29
15	When should the treatment be started	319	56.66	410	72.82	16.16
16	Cancer can be prevented by	234	41.40	439	77.97	36.57

## Discussion

The burden of cancer in India is on the rise. Poor awareness towards the cancer has been proved to be a serious hindrance to successful implementation of cancer control programmes.

The current study demonstrated serious lacunae in knowledge regarding various aspects of cancer. Though the study population was predominantly female, only 22%

were aware of cervical cancer as the commonest cause of cancers among women in India. In fact only 32.1% had enumerated cervix as a body part that could be affected by malignancy. Among the cancers enumerated, most common was lung cancer by 76.8%, followed by breast cancer in 64.3%. The limited awareness about cervical and breast cancer in our study population appears alarming. The results though vary slightly from similar studies from India. In a study from Chandigarh, maximum awareness was reported for breast cancer (67.4%), followed by lung cancer (65.1%).<sup>[8]</sup> In another community based study in India, more than half of the respondents knew about oral cancer (57.9%) and around 50% knew about breast cancer (50.8%).<sup>[13]</sup> The poor awareness especially about cervical cancer has been highlighted in other studies from India including one from Kolkata which revealed that only 43% were aware of cervical cancer.<sup>[3]</sup>

In the present study, around 42% correctly identified one or more symptoms associated with cancer. Most common symptom reported was that of non-healing ulcer, persistent cough or blood in sputum. In a study from India, around one-fourth of people were aware of symptoms suggestive of cancer. But the most common reported symptom was that of unusual bleeding (23.9%) or lump and thickening of the lip (22.2%), followed by change in breast size.<sup>[13]</sup> Again in our study females were alarmingly unaware of breast lumps or abnormal uterine bleeding as possible harbingers of malignancy. It is important to be aware of the common symptoms so that care is sought early to improve chances of survival. Also the respondents were not sure of the treatment facilities providing care for cancer patients. This would hinder early diagnosis and treatment of cancer.

Knowledge regarding preventive measures was better. But very few people were aware of preventive capabilities of vaccines against cancer. Studies in India indicate that the use of HPV vaccine for primary prevention of cervical cancer is still a distant reality with few people aware of the usage.<sup>[6]</sup>

Perhaps, the single most important point highlighted in the current study is the impact of health education intervention in raising knowledge levels with the average increase in scores being around 24.44% which was statistically significant.

Various studies have demonstrated the effectiveness of health education in cancer prevention. In a study from Saudi Arabia, the school health education program was found to be successful in raising the awareness of secondary school

girls about breast cancer and in encouraging them to practice breast self-examination more.<sup>[9]</sup> A similar study from India demonstrates the successful role of health education in promoting awareness about breast cancer.<sup>[4]</sup> As the adage goes, “prevention is always better than cure”. Also, patient survival in cases of cancer is most influenced by early diagnosis and treatment. So the emphasis must be on primary and secondary prevention through intensive health education.

## Conclusion

The society is bugged by numerous myths and stigma about cancer and stigma. Analysis of this study reveals lack of awareness at all levels of prevention including primary, secondary and tertiary. The most commonly encountered cancers in India like that of oral cavity, cervix or breast are curable if detected early. The method of health education through group approach should be applied at community level because health education is an effective tool to increase the knowledge and awareness regarding cancer. Only then, cancer prevention, early detection and treatment can become a reality.

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