Level of awareness of lung cancer risk factors, signs, symptoms and safe practices among college teachers of different states in India: Do awareness programmes have an impact on adoption of safe practices?

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Introduction

Lung cancer is the one of the most common cause of cancer mortality among men in India where incidence rates are increasing although they are largely preventable diseases. In India, late presentation is generally responsible for high mortality and morbidity rates and early detection is one of the best ways to control it. The purpose of this study is to measure the level of awareness on lung cancer among women represented by a sample of college teachers in India and the impact of awareness programs in changing or adopting safer practices and the prevention and early detection of the disease.

Material and methods

The assessment was conducted during a Pink Chain Campaign on cancer awareness in 2011 in various women colleges in India. Pre–test related to lung cancer was followed by awareness programs. Post–test using the same questionnaire was conducted at the end of interactive session, at 1 year and 6 months.

Results

A total of 156 out of 182 teachers participated in the study (overall response rate was 85.7%). Mean age of the study population was 42.4 years (range– 28–59 yrs). There was a significant increase in level of knowledge regarding lung cancer at 6 months and this was sustained at 1 year. Magazines and newspapers were the primary source for information regarding risk factors, signs and symptoms of lung cancer in more than 60% of teachers whereas more than 30% teachers were educated by doctors. At post–awareness after 1 year and 6 months, there was a significant change in alcohol and smoking habits. The main reasons for not undergoing screening tests are: ignorance (50%), lethargic attitude (44.8 %) and lack of time (34.6 %).

Conclusion

Knowledge about lung cancer was very low among teachers. Overall awareness of risk factors, signs and symptoms, and screening modalities of lung cancer have improved after 1 year along with practices related to smoking and alcohol consumption. There was a significant improvement in people undergoing regular check–up's. Improved means of communication, access to information and effective warnings about cigarette smoking are necessary to increase public awareness. To ensure the adoption of safe practices in the lifestyle of people who smoke and consume alcohol, awareness programmes such as the pink chain campaign should be conducted regularly, frequently and more widely in various areas of India.

Key words

Lung cancer, Awareness campaign, College teachers, Safe practices

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Introduction

Lung cancer remains a major cause of morbidity and mortality worldwide, accounting for more deaths than any other cause. It accounted for 12.7% of total cancer cases and 18.2% of total cancer related deaths in 2008 [1]. Unfortunately lung cancer does not become clinically apparent until it reaches an advanced stage, >75% of lung cancers are diagnosed after the disease is advanced or metastatic [2]. Siegel and colleagues reviewed recent cancer data and estimated a total of 239,320 new cases of lung cancer and 161,250 deaths from lung cancer in the United States in 2010 [1,3]. In developing countries such as India and neighbouring countries of the Asia Pacific region, the five year survival for lung cancer is approximately only 9% [4].

Lung cancer in India is a major health problem. According to the recent GLOBOCAN 2008 report [5], India reported 47,010 new lung cancer cases among males and 11,557 new lung cancer cases among females. The report further showed 41,865 male and 10,404 female deaths due to lung cancer. The age standardized incidence/100,000 is reported to be 10.9 for males and 2.5 for females in 2008 in India [6]. Cancer of the lung is the leading site of cancer according to data from four urban registries of Bhopal, Delhi, Mumbai and Chennai [7]. The fact that the disease is not rare in the rural belt too is evidenced from the rural registry of Karunagapally in Kerala wherein lung cancer is the number one cancer. The trends in cancer incidence in Chennai city and predictions for the future burden of cancer in Tamil Nadu state indicate lung cancer to be the most common cancer, surpassing cancer cervix by 2016 [8].

Smoking, including passive exposure, is the cause of 80% of lung cancer [9, 10]. Smokers have a 20 to 40 times higher risk of getting lung cancer than non–smokers [11]. Another important etiological factor is radiation exposure, environmental and occupational exposure, familial risk factors, dietary factors, and some benign lung diseases [12]. In India, late presentation which is responsible for high mortality and morbidity is attributed to many factors such as the lack of knowledge and awareness and lethargic attitude towards safe practices.

There are no definitive screening methods for lung cancer in India at present. Annual screening using low–dose computed tomography (LDCT) is effective in preventing mortality but it is very uncommon [13, 14]. This assessment was done as a part of a cancer campaign in schools where we evaluated students and teachers of colleges before and after a Pink Chain Cancer awareness campaign. Since early detection is the only way to reduce morbidity and mortality from lung cancer, there is limited data on lung cancer knowledge, safe practices and attitudes of teachers in India, we are presenting the data related to teachers.

The purpose of this study is to know the level of awareness of lung cancer risk factors and safe practices among college teachers in different states of India and the impact of awareness programs in changing or adopting safe practices in the prevention and early detection of the disease.

Methods

The assessment was conducted during a Pink Chain Campaign on cancer awareness in 2011 in various women colleges in Jaipur and Mumbai in India, Pre–test related to knowledge, attitude and practice related to lung cancer was conducted through a questionnaire before the start of the campaign.

Pre–test was followed by awareness programs consisting of lectures on preventive aspects of lung cancer with special note to tobacco and smoking and an interactive session. Post–test using the same questionnaire was conducted at the end of the interactive session. Personal details were collected from all the teachers who participated in the awareness program. Literatures related to cancer awareness were sent regularly to the participants for one year through emails. After 1 year and 6 months, the same questionnaires were emailed to the participants to verify whether there was a change in their practices. Data were collected and analyzed by using statistical software STATA 10.1. P values less than 0.05 were taken as significant.

Results

We collected data on 182 teachers. Of the 182, 156 teachers data was found suitable for

assessment after the cancer awareness campaign. 109 out of 156 teachers responded to the same question when same questionnaire was sent by email at the end of 6 months and 95 out of 156 teachers responded at the end of 1 year to assess sustainability of knowledge and change in practices.

Mean age of the study population was 42.4 years (range– 28–59 yrs). 86% teachers were in age group 31–50 years. Most of the teachers (88.4%) were from urban background. Among teachers who

were assessed, 17 teachers (10.8%) were smokers and 41 teachers (26.2%) were alcoholics.

No shift from non–addiction group to addiction group was noted at 1 year and 6 months. In people who were smoking (11%) and taking alcohol (26%) before this campaign, change in addiction habit was noted at 1 year and 6 months. Decrease in frequency was seen in 11.7% for smoking and 17% for alcohol at 1 year. Approximately 18% and 30% teachers quit

Knowledge about Lung cancer	Frequency (%)– Pre–test (n=156)	Frequency (%)– Posttest (n=156)	Frequency (%)– At 6 months (n=109)	Frequency (%)– At 1 year (n=95)	P value
Risk factors					
Smoking	129(83.6%)	156(100%)	109(100%)	95(100%)	
Second hand smoke	67(42.9%)	156(100%)	109(100%)	95(100%)	
Family history	7(4.48%)	156(100%)	106(97.2%)	92(96.8%)	
Asbestos	7(4.48%)	153(98%)	107(98.1%)	91(95.7%)	<0.05
Metals like Chromium, Cadmium, Arsenic	15(9.61%)	153(98%)	106(97.2%)	90(94.7%)	
Tuberculosis	60(38.4%)	156(100%)	109(100%)	95(100%)	
Symptoms					
Persistent cough	66(42.3%)	156(100%)	109(100%)	95(100%)	
Shortness of breath	67(42.9%)	156(100%)	109(100%)	95(100%)	
Sputum streaked with blood (Hemoptysis)	62(39.7%)	156(100%)	109(100%)	95(100%)	
Chest pain	28(17.9%)	156(100%)	109(100%)	95(100%)	<0.05
Voice Change	22(14.1%)	153(98%)	106(97.2%)	92(96.8%)	
Recurrent bronchitis	8(5.12%)	153(98%)	105(96.3%)	90(94.7%)	
Shoulder pain	8(5.12%)	151(96.7%)	100(91.7%)	86(90.5%)	
Weight loss, weakness and fatigue	47(30.1%)	156(100%)	104(95.4%)	90(94.7%)	

Table 1. Knowledge regarding various aspects of Lung cancer

Reasons for not undergoing screening tests		Source of knowledge of Lung cancer	
Reasons	Percentage (n=156)	Source of Knowledge	Percentage (n=156)
Cost	28(17.9)	Family	15(9.61)
Lack of time	54(34.6)	Friends	33(21.1)
Lethargic attitude	70(44.8)	Doctors	47(30.1)
Fear	47(30.1)	TV	40(25.6)
Hesitation	45(28.8)	News paper	96(61.5)
Ignorance	78(50.0)	Magazine	93(59.6)
Any others	12(7.69)	Internet	49(31.4)
		Awareness events	20(12.8)
		Others	7(4.48)

Table 2. Reasons for not doing screening and source of knowledge

smoking and alcohol respectively at the end of 1 year.

For lung cancer, the correct risk factors mostly indicated by teachers were smoking (89%), second–hand smoke (37%), tuberculosis (36%), family history (5%), asbestos (5%), exposure to metals like chromium, cadmium, and arsenic (12%) (Table 1). Symptoms of lung cancers were not well known among teachers. Lung cancer symptoms known to teachers were: persistent cough (42%), sputum streaked with blood (36%), weight loss, weakness and fatigue (30%), chest pain (18%), voice change (14%), and recurrent bronchitis (5%) (Table 2). Magazines and newspapers were the main source of information in 60% of teachers whereas approximately 30% of teachers were educated by doctors regarding various aspects of lung cancer (Table 2). There was a significant change in alcohol and smoking habits at post–awareness after 1 year and 6 months (Table 1). Major reasons for not going for check–up were ignorance (50%), lethargic attitude (44.8%) and lack of time (34.6%) (Table 2). Three teachers contacted us within 1 year for chest complaints. None of them were found to be positive for cancer after screening.

Discussion

Lung cancer is the most frequently seen and fatal type of cancer in the world. It is responsible for 19.7% of all cancer–related deaths and has a poor prognosis with five–year survival rates of below 15% [15]. A total of 156 out of 182 women between 28 – 59 years of age were included in the study with more than 50% teachers in age group 40–50 years. Assessment forms of 26 teachers were not suitable for analysis and were not included in the study. An assessment was done for pre and post event for 156 teachers with a response rate of 109/156 at 6 months and 95/156 at 1 year.

The risk factors and symptoms of lung cancer were generally not well known in beginning. There was gradual increase in knowledge of risk factors and symptoms for lung cancer at 6 months and was sustained at one year. Even though the incidence of lung cancer is presently increasing in India, awareness about risk factors of lung cancer, symptoms of lung cancer and screening modalities in lung cancer was not well known to teachers.

The prerequisite for early diagnosis is to have knowledge about the symptoms of cancer so as to consult doctor at the earliest [16]. Smoking is an important etiological factor for lung cancer. Incidence of smoking and alcohol consumption is less in Indian women when compared with the western population, however the trend is presently increasing. Bhaskarapillai et al [17] found that about 91% of the male lung cancer cases have smoking habits, where as in females, it was only 12.5%. Study found that 10% of the female cases were passive smokers.

Proportion of male and female who consume alcohol were 47.3% and 10% respectively.

Among teachers, 11% were smokers and 26% were alcoholic. In this study, teachers were well aware of the association of smoking and lung cancer but awareness of lung cancer signs and symptoms were very low. In a study done in Sydney, Australia [18], low levels of awareness of lung cancer signs and symptoms with the exception of hemoptysis was seen.

In this study, the correct risk factors for lung cancer indicated by teachers were smoking (89%), second–hand smoke (37%), and tuberculosis (36%), family history (5%), exposure to asbestos (5%) and metals like chromium, cadmium, and arsenic (12%). In comparison to this data, a UK population based study using reliable tools for assessing awareness has indicated low awareness on lung cancer symptoms and risk factors of lung cancer among the population. Interventions to increase lung cancer awareness are needed to improve early detection behaviour [19].

Symptoms of lung cancer known to teachers were persistent cough (24%), sputum streaked with blood (36%), chest pain (12%), voice change (12%), and recurrent bronchitis (5%) were noted in this study. In a Canadian population based study [20], assessing awareness among persons at risk for lung cancer regarding symptoms and risk factors of the disease, and their attitudes regarding the disease, found that most respondents were knowledgeable about the common symptoms of lung cancer, but were less aware of the impact of lifestyle choices in the development of these disorders and the availability of treatment for these problems.

Magazines and newspapers were the main source of information in 60% of teachers whereas approximately 30% of teachers were educated by doctors regarding various aspects of lung cancer. There was a significant increase in the level of knowledge on risk factors, sign and symptoms regarding lung cancer at 6 months and this were sustained at 1 year. At post–awareness at 1 year and 6 months, there was a significant change in smoking and alcohol habits. This shows the adoption of safe practices after an improved awareness about lung cancer. Three teachers contacted us within 1 year

for chest complaints. None of them were found to be positive for cancer after screening. Koca et al [21] evaluated the changes in the attitudes and behaviours of relatives of lung cancer patients towards cancer prevention and screening and they found that 21.1% changed their smoking habits, 5.3% visited a doctor due to suspicion of having cancer based on respiratory symptoms, 2.8% underwent cancer screening tests and 1.2 % started using vitamins for cancer prevention.

Major reasons for not going for check–up were ignorance (50%), lethargic attitude (44.8%) and lack of time (34.6%). Sulu et al [22] stated that the most common reason for patient's delay was neglect of symptoms by patients. A low index of suspicion for lung cancer was the most common cause for referral delay. The low performance of diagnostic tests was the frequent reason for diagnostic delay. Early diagnosis and treatment plays very important role in survival and causeless morbidity and mortality in lung cancer. The risk of death increases by 115.0% for the 1–year delay in consultation (hazard ratio: 2.150, 95% CI: 1.203–3.842, P=0.0097) [23]. With regards to the reason for not consulting a doctor, most of the study population answered that they did not have any respiratory symptoms [23].

Conclusion

Knowledge about lung cancer was very low among teachers. Overall awareness of risk factors, sign and symptoms, screening modalities of lung cancer have improved within a year along with practices related to smoking and alcohol consumption but there was not much improvement in people undergoing regular check–ups. College teachers in spite of having symptoms did not go for check–up due to ignorance, lethargic attitude and lack of time.

Improved means of communication, access to relevant information and more effective warnings about cigarette smoking are necessary to increase public awareness on the dangers of smoking. To inculcate safe practices in the lifestyle of people, awareness programmes such as the Pink Chain Campaign should be conducted regularly, frequently and more widely in various areas of India.

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