

## Knowledge Regarding Lung Cancer among Adults at Selected Community of Ratnanagar, Chitwan

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### ABSTRACT

**Background:** Lung cancer is the uncontrolled growth of abnormal cell in one or both lungs Lung cancer is the 2<sup>nd</sup> most common cancer worldwide. It is the most common cancer in men and the 2<sup>nd</sup> most common cancer in women.

**Methods:** A descriptive cross-sectional study on “Knowledge regarding Lung Cancer among Adults at Selected Community of Ratnanagar, Chitwan” was carried out to find the level of knowledge regarding lung cancer. Non-probability purposive sampling technique was used to select the sample and the sample size was 101. Data was collected by using semi-structured interview guide. The collected data was entered in SPSS version 22 and analysis was done using descriptive statistics.

**Results:** Findings of the study reveal that among 101 respondents, 58.4% were in the age group of 19-39. Similarly, majority (82.2%) were female. Most of the respondents (92.1%) were Hinduism. Likewise, 64.4% were Janajati. And more than half of the respondents (58.4%) were literate. Majority (74.3%) of the respondents were non-smokers. The study findings summarized the level of knowledge into three categories where nearly half (47.5%) of the respondents had moderate knowledge of lung cancer. Whereas 29.7% had good knowledge and 22.8% had poor knowledge about lung cancer.

**Conclusions:** This study concludes that, though majority of the respondents had moderate and good level of knowledge regarding lung cancer but there is still knowledge gap in some risk factors such as exposure to asbestos and radon gas. So, awareness programmes on lung cancer should be planned and implemented from concerned authority in community setting so that incidence of lung cancers can be reduced to some extent.

**Keywords:** knowledge; lung cancer; adults.

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### INTRODUCTION

In the present era, the prevalence of non-communicable diseases (NCD) is in increasing trend and is a major public health concern. Among the major killers of NCD, cancer is one among them.<sup>1</sup> Lung cancer is the 2<sup>nd</sup> most common cancer worldwide. It is the most common cancer in men and the 2<sup>nd</sup> most common cancer in women. There were more than 2.2 million new cases of lung cancer in 2020. The age-standardized rates (ARs) in lung cancer incidence and mortality per 100,000 were estimated to be 10.4 and 9.5, respectively.<sup>2</sup> According to the GLOBOCAN 2020 statistics, the number of new cases of cancer is 20,508 and cancer-related deaths are 13,629 for Nepal. The age standardized rates in cancer incidence and mortality per 100,000 were estimated to be 80.9 and 54.8, respectively. Lung cancer is the most common cancer in men (18% of

new cases diagnosed) and third most common cancer in women (7.7%) in Nepal. Lung cancer is the most diagnosed cancer and the leading cause of cancer death in 2020, an estimated 2.2 million new cancer cases and 1.8 million deaths. Lung cancer represents 11.4% of all diagnosed cases and 18.0% of all cancer deaths. Globally, it ranks second, while in Nepal it ranks first.<sup>3</sup> Lung cancer is the uncontrolled growth of abnormal cell in one or both lungs. While normal cell reproduces and develop into healthy lung tissue, these abnormal cells reproduce faster and never grow into normal lung tissue. The cancer cells can spread from the tumor into the blood stream or lymphatic system where they can spread to the organs.<sup>4</sup> Smoking is the most common risk factor for lung cancer. This study showed that heavy pesticide usage was associated with increase of lung cancer. Potent insecticides, such as pyrethroids, which account for more than 30%

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of global use, are known to be carcinogenic. Other risk factors are passive smoking, exposure to radon gas, exposure to asbestos and other carcinogens and family history of lung cancer. Occupational exposures in industrial facilities have been held to account for a further 9% to 15% of cases.<sup>5</sup> Common signs and symptoms of lung cancer include Tiredness or fatigue, Hoarseness, Shortness of breath, A cough that does not go away (or worsens), Coughing up blood or even red or rust-colored phlegm, pain in chest that worsens with deep breathing, coughing, or laughing, weight loss and loss of appetite, infections such as bronchitis and pneumonia that don't go away or keep coming back, new onset of wheezing.<sup>6</sup> Screening of lung scan include CT scan, Chest x-ray, Sputum cytology. Prevention of lung cancer include cessation of smoking, avoid radon exposure, avoiding exposure to known cancer-causing agents in the workplace, screening yearly, using mask while working, eat healthy diet, doing exercises.<sup>7</sup>

## METHODS

A descriptive cross-sectional study on "Knowledge regarding Lung Cancer among Adults at Selected Community of Ratnanagar, Chitwan" was carried out to find the level of knowledge regarding lung cancer. The study population was all the adults with age of above 18 years who had been living in Sukumbasi tole of Ratnanagar -9, Chitwan. 101 adults who can read and speak clearly were selected by using non probability purposive sampling technique and sample size was calculated by using formula,

$$\text{Sample size (n)} = z^2 pq/e^2$$

A Semi-structured Interview Guide was used for data collection. The research instrument consisted of 3 parts where, Part I: questions related to socio-demographic variables, Part II: Questions related to source of knowledge and Part III: Questions related to knowledge regarding lung cancer. The instrument was developed in English and translated into simple Nepali languages. Before collection of the data, ethical approval for the study was obtained from the Institutional Review Committee of BP Koirala Memorial Cancer Hospital and administrative

approval was obtained from concern authority of Ratnanagar Submetropolitan City .The objectives of the study were explained and verbal informed consent was obtained from each respondent before data collection and ensured the confidentiality. The data was collected by using semi structured interview schedule through face-to-face interview method. The interview was taken for 20 to 30 minutes. The collected data was checked for completeness then encoded and entered in Microsoft office excel and analyzed by using descriptive statistics, statistical package for social science (SPSS) version 22.

## RESULT

Among 101 respondents, 59 (58.4%) were in the age group of 19-39 followed by 40-60 age group 32 (31.7%), 61-81 age group 10 (9.9%). The mean age of respondent was 38.38 and SD was 13.96 with the maximum age of 80 years and minimum age of 19 years. Similarly, regarding gender majority were female 66 (65.3%). Majority of the respondent 93 (92.1%) were Hinduism and least of them were 5 (5.0%) were Christianity. Likewise, regarding ethnicity, majority of the respondents 65 (64.4%) were janajati followed by dalit 16 (15.8%), brahmin/Chhetri 9 (8.9%), madhesi 5 (5.0%), newar 4 (4.0%) and muslim 2 (2.0%) respectively. Regarding marital status most of the respondents, 74 (73.3%) were married (Table 1).

Only 41.6% were illiterate, 27 (26.7%) had primary education, 12 (11.9%) had secondary education and 20 (19.8%) had S.L.C and above. Regarding occupation, most of the respondents 39 (38.6%) were house maker. Likewise, majority of the respondent's annual income was adequate for one year 55 (54.5%). Similarly, regarding history of lung cancer in family, majority of the respondents 96 (95.0%) had no history of lung cancer in the family, only 5(5.0%) had a history of lung cancer in the family. Majority of the respondents were non-smokers 75 (74.3%) and only 26 (25.7%) were smokers. Commonest type of smoke used by responded was cigarette 26 (100%) (Table 2). The major source of information regarding lung cancer was TV and radio 74 (73.3%) whereas 23(22.8%)

Variable	Frequency (%)
<b>Age</b>	
19-39	59 (58.4)
40-60	32 (31.7)
61-81	10 (9.9)
<b>Mean ± SD</b>	<b>38.38 ± 13.96</b>
<b>Min=19, Max=80</b>	
<b>Gender</b>	
Male	35 (34.7)
Female	66 (65.3)
<b>Religion</b>	
Hinduism	93 (92.1)
Buddhism	3 (3)
Christianity	5 (5)
<b>Ethnicity</b>	
Brahmin/Chhetri	9 (8.9)
Newar	4 (4)
Dalit	16 (15.8)
Janajati	65 (64.4)
Madhesi	5 (5)
Muslim	2 (2)
<b>Marital status</b>	
Married	74 (73.3)
Unmarried	16 (15.8)
Divorced/Separated	1 (1)
Widow	10 (9.9)

got through health personal, likewise 54 (53.5%) got the knowledge from family/relatives. Only 1(1.0%) respondent have been involved in awareness program of lung cancer. 21 (20.8%) respondents have medical personnel in family/relatives (Table 3).

Table 4 shows respondent's knowledge regarding Lung Cancer where 27 (26.7%) responded correctly i.e., abnormal growth in lungs is lung cancer and majority of respondents 85 (84.2%) answered that lung cancer is a non-communicable disease.

Table 5 shows respondent's knowledge regarding risk factors of lung cancer. Majority of respondents 90

Variable	Frequency (%)
<b>Education</b>	
No education	42 (41.6)
Primary education	27 (26.7)
Secondary education	12 (11.9)
S.L.C and above	20 (19.8)
<b>Occupation</b>	
Agriculture	23 (22.8)
House maker	39 (38.6)
Business	17 (16.8)
Service holder	1 (1)
Others	21 (20.8)
<b>Annual income</b>	
Adequate for one year	55 (54.5)
Inadequate for one year	11 (10.9)
Adequate for more than one year	35 (34.7)
<b>History of lung cancer in family</b>	
Yes	5 (5)
No	96 (95)
<b>Smoking habit</b>	
Yes	26 (25.7)
No	75 (74.3)
<b>If yes</b>	
<b>Type of smoke (n=26)</b>	
Cigarette smoking	26 (100)

**Table 3. Respondent's response on source of information regarding lung cancer. (n=101)**

Variable*	Frequency (%)
Information through TV and radio	74 (73.3)
Information from health personnel	23 (22.8)
Information from family/relatives	54 (53.5)
Awareness program of lung cancer	1 (1)
Medical personnel in family/relatives	21 (20.8)

\*Multiple responses (89.1%) had given the right answer that is cigarettes smoking is a main risk factor of lung cancer, whereas 89 (88.1%) knew that risk of lung cancer increases with the amount and duration of smoke, 79 (78.2%) answered that excessive alcoholism also may cause lung cancer. Equal frequency of the respondents 75

<b>Table 4. Respondents Knowledge regarding Meaning of Lung Cancer. (n=101)</b>	
<b>Variables</b>	<b>Frequency (%)</b>
<b>Meaning of Lung Cancer</b>	
Abnormal growth in lungs	27 (26.7)
Lung cancer is non communicable disease	85 (84.2)

<b>Table 5. Respondents knowledge regarding risk factors for lung cancer. (n=101)</b>	
<b>Variables</b>	<b>Correct response</b>
	<b>Frequency (%)</b>
Main risk factor of lung cancer is Cigarettes smoking	90 (89.1)
Risk of lung cancer increase with the amount and duration of smoke	89 (88.1)
Excessive alcoholism may cause lung cancer	79 (78.2)
Passive smoking may cause lung cancer	75 (74.3)
Risk factor of lung cancer is exposure to pesticides	73 (72.3)
Chronic lung disease increases the risk of lung cancer	73 (72.3)
Family history of lung cancer also cause lung cancer	49 (48.5)
Exposure to asbestos increase the risk of lung cancer	21 (20.8)
Exposure to radon gas may cause lung cancer	15 (14.9)
Old aged people mostly suffer from lung cancer	75 (74.3)

(74.3%) answered that old aged people and passive smoking is also a risk factor of lung cancer mostly. Similarly, Equal frequency of respondents 73 (72.3%) knew that chronic lung disease and exposure to pesticides is a risk factor of lung cancer. Likewise, nearly half of the respondents 49 (48.5%) knew having family history of lung cancer may also lead to lung cancer. Least of the respondents 21 (20.8%) and 15 (14.9%) knew that exposure to asbestos and radon gas may cause lung cancer respectively. Table 6 reveals that more than half (54.5%) of the respondents answered correctly that the most common early sign of lung cancer i.e., cough that does not heal for long time. Similarly, majority of respondents (89.1%) knew that pain in chest that worsens with deep

breathing/coughing is a sign of lung cancer. Likewise, most of the respondents (87.1%) knew shortness of breath is a sign and symptom. Similarly, 82.2 percent

<b>Table 6. Respondents knowledge regarding early warning sign and symptoms of lung cancer. (n=101)</b>	
<b>Variables*</b>	<b>Correct response</b>
	<b>Frequency (%)</b>
Most common early sign of lung cancer is Cough that does not heal for long time	55 (54.5)
Fatigue	83 (82.2)
Coughing up blood	53 (52.5)
Shortness of breath	88 (87.1)
Frequent infection like pneumonia	48 (47.5)
New onset of wheezing	80 (79.2)
Pain in chest that worsen with deep breathing, coughing	90 (89.1)

\*Multiple responses

knew that fatigue is a symptom of lung cancer followed by new onset of wheezing (79.2%), coughing up blood (52.5%) and frequent infection like pneumonia (47.5%) respectively.

Table 7 shows that majority 99 (98.0%) of respondents knew cessation of smoking is a preventive measure of lung cancer followed by 98 (97.0%) knew regular screening in 1 year can prevent from lung cancer. Likewise equal frequency of respondents 88 (87.1%) knew that avoiding environmental pollution and eating a healthy diet is a preventive measure of lung cancer. Similarly, majority of respondents 87 (86.1%)

<b>Table 7. Respondents Knowledge Regarding Preventive Measures of Lung Cancer. (n=101)</b>	
<b>Variables *</b>	<b>Correct response</b>
	<b>Frequency (%)</b>
Cessation of smoking	99 (98)
Avoiding secondhand smoke	87 (86.1)
Avoiding environmental pollution	88 (87.1)
Avoiding excessive use of pesticides	84 (83.2)
Wearing mask while working	60 (59.4)
Eating healthy diet	88 (87.1)
Regular screening in 1 years	98 (97)
Doing physical exercise	75 (74.3)

\*Multiple responses

responded that avoiding secondhand smoke is a preventive measure of lung cancer and 84 (83.2%) had known that avoiding excessive use of pesticides is a prevention of lung cancer. Furthermore 75 (74.3%) answered that doing physical exercise can prevent lung cancer whereas 60 (59.4%) knew wearing mask while working can prevent lung cancer.

Table 8 shows out of 101 respondents 48(47.5%) had moderate knowledge of lung cancer. Whereas 30 (29.7%) had good knowledge and 23 (22.8%) had poor knowledge about lung cancer.

<b>Table 8. Level of Knowledge Regarding Lung Cancer. (n=101)</b>	
<b>Levels of knowledge</b>	<b>Frequency (%)</b>
Poor	23 (22.8)
Moderate	48 (47.5)
Good	30 (29.7)

## DISCUSSION

In this current study, the analysis of socio-demographic variables revealed that among 101 respondents, 58.4% were in the age group of 19-39 followed by 40-60 (31.7%), and 61-81 age group (9.9%) respectively. Similarly, majority (82.2%) were female. These demographic findings are contrary to the study conducted in Pokhara which showed that among 240 respondents, male were (57.5%) and female were (42.5%).<sup>15</sup> Most of the respondents (92.1%) were Hinduism. Likewise, majority (64.4%) was Janajati and most of the respondents (73.3%) were married. More than half of the respondents (58.4%) were literate. Regarding occupation, 38.6% were house maker. Likewise, majority of the respondent's annual income was adequate for one year (54.5%). Similarly, majority of the respondents (95.0%) had no history of lung cancer in the family and majority of the respondents were non-smokers (74.3%) and more than one fourth (25.7%) were smokers and the commonest type of smoke used by smokers was cigarette (100%). This finding is closely consistent with the finding of the study conducted in Malaysia which showed that, 90.1% were non-smoker.<sup>5</sup>

Major source of information regarding lung cancer

was TV and radio (73.3%). Whereas 22.8% of respondents reported that they got information through health personnel and 53.5% from family/relatives. This finding is higher than the finding of the study carried out in Cameroon where 26.42% respondents got information from the TV or radio.<sup>19</sup> Only 1.0% of respondents have been involved in awareness program of lung cancer and (20.8%) of respondents reported of having medical personnel in family/relatives. Similarly this finding is contrary to the study conducted in South Africa which showed that, fewer participants (34.8%) had heard of lung cancer through radio, followed by television (28%), newspaper (25%) and health professional (16%).<sup>17</sup> About one fourth of the respondents (26.7%) answered correctly about the meaning of lung cancer i.e., abnormal growth in lungs and majority of respondents (84.2%) answered that lung cancer is a non-communicable disease. This finding is lower than the finding of the study carried out in Malaysia (93%)<sup>5</sup> and Cameroon (55%).<sup>19</sup>

In relation to knowledge regarding risk factors of lung cancer, majority (89.1%) of respondents knew that cigarettes smoking is a main risk factor of lung cancer, whereas 88.1% responded correctly that risk of lung cancer increases with the amount and duration of smoke and 78.2% answered that excessive alcoholism also may cause lung cancer. Equal frequency of the respondents (74.3%) knew that old aged people and passive smoking are also risk factors of lung cancer.

Similarly, equal frequency of respondents (72.3%) knew that chronic lung disease and exposure to pesticides are risk factors of lung cancer. Likewise, nearly half of the respondents (48.5%) knew that having family history of lung cancer may also lead to lung cancer. Least of the respondents (20.8% and 14.9%) knew that exposure to asbestos and radon gas may cause lung cancer respectively. These findings are lower than the findings of the study conducted in Malaysia which revealed that smoking (100%), eating chili and deep fried food (68.5%), air pollution (89.2%), alcohol (75.6%), occupational hazard (75.6%), and passive smoking (90.1%).<sup>5</sup>

A review done on lung cancer research in Malaysia

mentioned that about 91% of respondents were aware about smoking as a major risk factor of lung cancer.<sup>20</sup> Furthermore, in the study carried out in Chennai India, showed that most of the respondents (76.6%) had inadequate knowledge on causes of lung cancer.<sup>4</sup> In relation to knowledge regarding early warning sign and symptoms of lung cancer, more than half of the respondents (54.5%) answered correctly about the most common early sign of lung cancer i.e., cough that does not heal for long time. This sign was followed by pain in chest that worsens with deep breathing/coughing (89.1%), shortness of breath (87.1%), fatigue (82.2%), new onset of wheezing (79.2%), coughing up blood (52.5%) and frequent infection like pneumonia (47.5%) respectively. This finding of the study is higher than that revealed in the study carried out in South Africa which showed that coughing blood was the most recognized warning sign (60.9%), followed by persistent chest pain (50.1%) and persistent shortness of breath (49.1%).<sup>17</sup> A majority (98.0%) of respondents reported that cessation of smoking is a preventive measure of lung cancer followed by regular screening in 1 year (97.0%) avoiding environmental pollution (87.1%) and eating a healthy diet (87.1%) respectively. Similarly, 86.1% knew that avoiding secondhand smoke is a preventive measure of lung cancer followed by avoiding excessive use of pesticides (83.2%). Furthermore, 74.3% of respondents answered that doing physical exercise can prevent

lung cancer whereas 59.4% knew wearing mask while working can prevent lung cancer. The findings of the study are higher than that revealed in the study carried out in Cameroon which showed that stop smoking (58%), screening (50%), exercises (24%), avoid asbestos fibre (8%) and other prevention like specifying the stop of alcoholism and avoiding second hand smoking (4%), as a preventive measure of lung cancer.<sup>19</sup>

In present study, less than half (47.5%) of respondents had moderate knowledge, 29.7% had good knowledge and 22.8% had poor knowledge regarding lung cancer. This finding of the study is slightly lower than the study carried out in South India, which revealed that the majority of the respondents (58%) had average knowledge, (20%) had good knowledge, (20%) had poor knowledge and only (2%) had excellent knowledge.<sup>13</sup>

## CONCLUSION

This study concludes that though majority of the respondents had moderate and good level of knowledge regarding lung cancer, there is still knowledge gap in some risk factors of lung cancer such as exposure to asbestos and radon gas. So, awareness programmes on lung cancer should be planned and implemented from both government sector and private sector in community setting so that incidence of lung cancers can be reduced to some extent.

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