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Awareness Regarding Cancer Risk Factors among Udayapur Cement Factory, Eastern Nepal

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ABSTRACT

Background: Cancer continuous to be a major cause of morbidity and mortality throughout the world including Nepal. It is estimated 19.3 million new cases were diagnosed, accounting for 9.9 million death cases in 2020. Cancer risk factors are the things that can increase a person's chances of developing cancer.

Methods: A quantitative cross-sectional study design on "Awareness Regarding Cancer Risk Factors among Udayapur Cement Factory workers" was carried out to assess the level of awareness regarding cancer risk factors. Purposive sampling technique was used to select the sample and the sample size was 93. Data was collected by using structured interview schedule. Both descriptive and inferential statistics were used for data analysis with SPSS version 20.

Results: The Mean age of respondents was 41.89 years with minimum age of 20 years and maximum age of 58 years and all the respondents were male. Most of the respondents were Hindu (94.6%) and less than half (44.1%) of respondents were Brahmin/Chhetri. The study findings summarized the level of awareness into three categories where 80.6% had poor level of awareness, 18.3% had moderate level of awareness and 1.1% had good level of awareness.

Conclusion: Majority of the respondents had poor level of awareness of cancer risk factors. So, awareness programs regarding cancer prevention should be planned and implemented from the concern authority targeting the cement factory workers so that morbidity and mortality due to cancer can be reduced to some extent by increasing their level of and awareness on cancer.

Keywords: awareness; cancer; risk factors; cement factory workers.

INTRODUCTION

Cancer is the second leading cause of the death globally. It is estimated 19.3 million new cases and 9.9 million deaths in 2020.[1] In Nepal; cancer is the fifth leading cause of death and remains a major public health issue.[2] Occupational hazards are potential risks of developing cancer in workplace which highlights the importance of occupational health and safety measures to limit the chance of cancer.[3,4] Between 30 and 50% of cancers may be prevented by avoiding risk factors and imposing current evidence-based preventive measures.[5] By limiting the exposure to avoidable risk factors may lower the risk of developing certain cancers.[6] It is very important to have awareness on cancer risk factors so that they can work carefully and minimize their exposure risk as far as feasible. So, this study was conducted to access the level of awareness regarding cancer risk factors among Udayapur cement factory workers.

METHODS

A descriptive cross-sectional study was carried out to assess the level of awareness of cancer risk factors among cement factory workers. A total of 93 workers who were working in loading, milling, laboratory and packaging areas with age of more than 18 years and those who are able to speak and understand Nepali language were selected for the study. A structured interview schedule was used to find out the level of awareness regarding cancer risk factors. Research instrument consisted of two parts. Part I included questions related to socio-demographic information and part II: questions related to cancer risk factors. Each correct answer was given 1 score and 0 for wrong answer. Level of awareness was measured

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by calculating the total score and was classified into three categories being based on Bloom's cut off points as revealed in the previous literature [7] where, good level= 80-100%, moderate level=60-79 and Poor level ≤ 60%.

Before data collection, ethical approval was obtained from BPKMCH, Institutional Review Committee (IRC). Administrative approval was taken from Udayapur Cement Factory. The purpose and the process of the study was clearly explained to the participants before data collection. Privacy and confidentiality of the participants was assured and maintained by obtaining written informed consent and not disclosing the information given by respondents and information collected was used only for research purpose. Anonymity was maintained by giving code number. Then all collected data were entered and analyzed by Statistical Package for Social Science (SPSS) version 20. Data was interpreted by using both descriptive and inferential statistics. Chi square test was used to find the association between level of awareness of cancer risk factors with some selected socio-demographic variables. P-value <0.05 was considered statistically significant.

Table 1. Respondent's socio-demographic status: age, population, religion, ethnicity

Variables	Frequency (%)
Age	
20-30	21(22.6)
30-40	13(14)
40-50	26(28)
50-60	33(35.5)
Population	
Male	93(100)
Religion	
Hinduism	88(94.6)
Buddhist	2(2.2)
Kirat	3(3.2)
Ethnicity	
Brahmin/Chhetri	41(44.1)
Dalit	2(2.2)
Janajati	23(24.7)
Madhesi	14(18.3)
Others	10(10.8)
Education	
No education	11(11.8)
Basic education	38(40.9)
Secondary education	24(25.8)
More than secondary	20(21.5)
Marital status	
Never married	5(5.4)
Married	88(94.6)
Types of Family	
Single	11(11.8)
Joint	82(88.2)
Education	
No education	11(11.8)
Basic education	38(40.9)
Secondary education	24(25.8)
More than secondary	20(21.5)
Marital status	
Never married	5(5.4)

RESULTS

The Mean age was 41.89 years and cent percent of respondents were male. Most of the respondents were Hindu (94.6%) and less than half (44.1%) of respondents were Brahmin/Chhetri. Likewise, 40.9% of respondents have basic education followed by secondary education (25.8%), more than secondary (21.5%) and no education (11.8%) respectively. Similarly, majority (94.6%) of the respondents were married and were from joint family (88.2%).

Table 2. Respondent's information on family history personal habits and work place.

Variables	Frequency (%)
Family history of Cancer	
Yes	6(6.5%)
No	87(93.5%)
Habits of smoking	
Yes	53(57%)
No	40(43%)
Habits of Alcohol	
Yes	6(6.5%)
No	87(93.5%)
Working Area	
Milling	17(18.3%)
Packaging/Loading	25(26.9%)
Laboratory	8(8.6%)
Clinker production	19(20.4%)
Mechanical	5(5.4%
Security guard	19(20.4%)

Out of 93 respondents, 6.5% respondents had family history of cancer. Similarly, 59.1% respondents had habit of alcohol and 57.0% had habit of smoking. Likewise, 26.9% respondents were working in packaging/ loading area followed by clinker production (20.4%), security guard (20.4%), milling (18.3%), laboratory (8.6%) and in mechanical area (5.4%) respectively (Table 2).

Table 3 depicts that respondent's response on source of information. Out of 93 respondents, more than half of the respondents (51.6%) got information about cancer from friends and relatives followed by mass media (50.5%), health personnel (16.1%) and from newspaper (15.1%) respectively.

Table 3. Sources of information.	
Variables	**Frequency (%)**
Sources of information	
Health personal	15(16.1%)
Friends and relatives	48(51.6%)
Mass media	47(50.5%)
Newspaper	14(15.1%)

*Multiple choice questions

Out of 93 respondents, most of the respondents (91.4%) were aware about smoking as a cancer risk factor. Likewise, majority (87.1%) knew long term exposure to pollution followed by exposure to cement chemicals (86.0%), excessive alcohol consumption (62.4%) and certain viral and bacterial infection (60.2%) respectively. Similarly, more than half of the respondents (57.0%) reported passive smoking and less than half (49.5%) said exposure to radiation, 46.2% reported long term exposure to sun, 39.8% obesity, 32.3% lack of exercise and minority (24.7%) reported stress as cancer risk factors (Table 4).

Table 4. Respondent's awareness on cancer risk factors: modifiable risk factors. (n=93)	
Variables	**Correct Response**
	Frequency (%)
Smoking	85(91.4)
Passive smoking	53(57)
Excessive alcohol	58(62.4)
Lack of exercise	30(32.3)
Long term exposure to sun	43(46.2)
Obesity	37(39.8)
Stress	23(24.7)
Exposure to cement chemicals	80(86)
Certain viral and bacterial infections	56(60.2)
Exposure to radiation	46(49.5)
Long term exposure to pollution	81(87.1)

Out of 93 respondents, half of the respondents (50.5%) were aware about family history of cancer as a cancer risk factor and the least (14.0%) of the respondents knew that advanced age can cause cancer (Table 5).

Table 5. Respondent's awareness on cancer risk factors: non- modifiable risk factors.	
Variables	**Correct Response**
	Frequency (%)
Family history of cancer	47(50.5%)
Advanced age	13(14.0)

Out of 93, 39.8% of the respondents were aware high fats and low fiber diets are cancer risk factor, followed by preserved red meat (32.3%) and low intake of fruits and vegetables (8.6%) respectively (Table 6).

Table 6. Respondent's awareness on cancer risk factors: diets.	
Variables	**Correct Response**
	Frequency (%)
Preserved red meat	30(32.3)
Low intake of fruits and vegetables	8(8.6)
High fats and low fiber diets	17(39.8)

Table 7 shows the respondent`s level of awareness regarding cancer risk factors. Out of 93 respondents, majority of respondents (80.6%) had poor level of awareness, 18.3% had moderate level of awareness and the least (1.1 %) respondents had good level of awareness.

Table 7. Respondents' level of awareness regarding cancer risk factors.	
Level of Awareness	**Frequency (%)**
Good	1(1.1)
Moderate	17(18.3)
Poor	75(80.6)

Table 8 shows that the level of awareness was not statistically significant with age (p-value=0.217), Religions (p-value=0.670), Ethnicity (p-value= 0.291), , Family history of cancer (p-value= 0.803) and Education (p-value= 0.684).

Table 8. Association between level of awareness and selected socio-demographic variables: age, religion ethnicity, marital status, family history of cancer and education.

Variables	Level of Awareness			Chi- square	p- value
	Good (%)	Moderate (%)	Poor (%)		
Age					
20-29	0	2(9.5)	19(90.5)	5.842	0.441[a]
30-39	1(7.7%)	2(11.0)	10(76.9)		
40-49	0	6(23.1)	20(76.9)		
50-60	0	7(21.2)	26(78.8)		
Religion					
Hinduism	1(1.0%)	17(17.0)	72(81.8)	1.59	0.811[a]
Buddhist	0	1(50.0)	1(50.0)		
Kirat	0	1(33.3)	2(66.7)		
Ethnicity					
Brahmin/Chhetri	1(2.4%)	6(14.6%)	34(82.9%)	3.746	0.879[a]
Dalit	0	0	2(100.0%)		
Janajati	0	5(21.7%)	18(78.3%)		
Madhesi	0	3(17.6%)	14(82.4%)		
Others	0	3(30.0%)	7(70.0%)		
History of cancer					
Yes	4(66.7%)	1(16.7%)	1(16.7%)	0.439	0.803[a]
No	65(74.7%)	15(17.2%)	7(8.0%)		
Education					
No education	0	3(27.3%)	8(72.7%)	3.947	0.684[a]
Basic education	0	6(15.8%)	32(84.2%)		
Secondary education	0	4(16.7%)	20(83.3%)		
More than secondary	1(5.0%)	4(20.0%)	15(75.0%)		

a = Likelihood ratio value, Level of significance p = < 0.05

DISCUSSION

In present study, in relation to knowledge regarding modifiable cancer risk factors, most of the respondents (91.4%) were aware that smoking as a main risk factor of cancer. Likewise, more than three-fifth of respondents (62.4%) said excessive alcohol consumption and more than half (57.0%) of respondents reported passive smoking. These findings of this study are slightly similar with the study conducted in Oman which depicted smoking (83.3%), passive smoking (72.7%) and excessive alcohol consumption (69.0%).[8] Likewise, 39.8% of respondents reported obesity and 32.3% reported lack of exercise. These findings are closely related with the study done in Japanese population which presented that obesity (39.8%) and lack of physical exercise (32.3%) are cancer risk factors.[9] In this study, 60.2% of respondents were aware that certain viral and bacterial infection may increase the risk of getting cancer. This finding is contrary to the study done in Oman which depicted that 30.5% of respondents reported HPV infection as cancer risk factor [8]. Likewise, 46.2% of respondents knew that cancer long term exposure to sunlight may increase the risk of cancer. This finding is lower than that presented in the study done in Lebanese population, which showed 87.6% of respondents were known of long-term exposure to sun increases the risk of cancer [10]. Similarly, 38.1% of respondents were aware about occupational exposure to cement chemicals as a cancer risk factor. This finding is contrary to the study done in Japan which showed 86.0% of respondents were aware that occupational exposure as cancer risk of cancer.[9] Similarly, majority of the respondents

(87.1%) reported pollution and 24.7% were known about stress as risk of cancer. This finding of the study is consistent with a study conducted in Lebanon which mentioned that pollution (96.94%) and stress (23.4%) are risk factors of cancer.[10]

In relation to awareness regarding non-modifiable risk factors of cancer, more than half of the respondents (50.5%) said family history of cancer as a cancer risk factor. This finding is closely related with the finding reported by Japanese study where 51.7% reported that positive family history is a cancer risk factor [9]. Similarly, only 14.0% of the respondents knew that advanced age can cause cancer. This finding is closely consistent with the finding of the study conducted in Oman [8] which revealed that 18.8% of respondents reported advanced age is a cancer risk factor. Concerning the awareness regarding diets as risk factors of cancer, 39.8% were aware that high fats and low fiber diets being cancer risk factor followed by preserved red meat 32.3%, low intake of fruits and vegetables 8.6% respectively. These findings of the study are lower than the results of the study done in Lebanon where majority of respondents (90.6%, 73.7% and 69.3% of respondents were aware about proceeds meat, low intake of fruits and vegetables and respectively as a risk factor of cancer.[10] In relation to level of awareness regarding cancer risk factors, the majority (80.6%) of respondents had poor level of awareness, 18.3% had moderate level of awareness and 1.1% had good level of awareness This finding of the study is consistent with the study done in Lalitpur, Nepal which emphasized strong need of education on cancer risk factors as the level of knowledge on cancer risk factors was found to be very poor.[11]

In this study, the level of awareness was not statistically significant with age (p=0.441[a]), religion (p =0.811[a]), ethnicity (p=0.879[a]), family history of cancer (p=0.803) and educational level (p=3.947). This finding is closely supported by the study done in Moroccan population where the level of awareness was not statistically significant with age, marital status, family history of cancer [12]. But this finding is contrary to the study done in Oman which showed association between the respondents' level of awareness and the level of education.[8]

CONCLUSIONS

Based on the findings of this study, it can be concluded that majority of the respondents had poor level of awareness regarding cancer risk factors. So, concern authority should plan and conduct awareness program on cancer which helps to minimize exposure risk and enhance the existing awareness regarding cancer risk factors among workers.

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