

Oral Cancer Prevalence among Tobacco Chewer Females in Terai Region of Nepal

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Abstract: Oral cancer is a major health problem of developing world including Nepal. The problem continues to get bigger due to adherence and continuation of risk behavior of chewing tobacco, smoking, etc. Other factors causing growth of oral cancer among both sexes might be attributable to poor education, poverty, lack of awareness on risk behavior etc. The above factors posed challenges in cancer care and prevention services in Nepal. Objective of the study was to assess the oral cancer prevalence among tobacco chewer females in Terai region of Nepal. The data was collected from record analysis of 800 samples of cancer patients at BP Koirala Memorial Cancer Hospital (BPKMCH), Chitwan Nepal from year 2009 to 2013 AD. The study research design was quantitative, descriptive and cross sectional. The study data presented as frequency table and cross tables. Result showed 84% of the patients were married. Similarly 46.1% female oral cancer patients were tobacco chewer in Terai region of Nepal. The study urges the need of further exploration on female oral cancer and chewing tobacco habit along with other cancer risk behavior in the region.

Key words: Female, Nepal, Oral cancer, Terai, Tobacco chewers

1. Introduction

1.1 Background

Cancer is the rapid creation of abnormal cells that grow beyond their usual boundaries, and which can then invade adjoining parts of the body and spread to other organs which is termed as metastasis. Metastases are a major cause of death from cancer (Fact sheet, 2017). Cancer is a generic term for a large group of diseases that can affect any part of the body. Around one third of deaths from cancer are due to the 5 leading behavioral and dietary risks: high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use, and alcohol use. The study shows that among males, lung cancers are most common followed by oral cancer while among females; breast and cervix uteri cancers have the highest incidence (World Health Organization, South East Asia Region, 2011).

Oral cancer is becoming a great health problem in Nepal along with other cancers. Cancer is second major killer disease in non-communicable diseases. The country has to face the public health challenge of both communicable and non-communicable diseases in terms of care and prevention. At present people here mostly suffered from non communicable diseases such as Hypertension, Cancer, Diabetes, CVA etc. Cancer poses a major threat to public health worldwide, and incidence rates have increased in most countries since 1990. The trend is a particular

threat to developing nations with health systems that are ill-equipped to deal with complex and expensive cancer treatments (Naghavi, 2015). Morbidity and mortality due to cancer was very high with approximately 14 million new cases and 8 million cancer-related deaths in 2012, affecting populations worldwide (World Cancer Report, 2014). According to Joshi, cancer is the second most frequent cause of death in developed countries after cardiovascular diseases accounting for 21% of all deaths (Joshi, 2003). Cancer problem is rising worldwide in coming days which was cited in the article of Thun et al. that there will be estimated around 26 million new cancer cases causing 17 million cancer deaths per year by the year 2030 (Thun, DeLancey, Center, Jemal, & Ward, 2009). From review of high risk countries with geographical variation showed that oral and pharyngeal cancer, grouped together, is the sixth most common cancer in the world with high incidence of related to lifestyle in some populations. The study showed the rising trends reported in some populations, particularly in the young, urgent public health measures are needed to reduce the incidence and mortality of oral and oropharyngeal cancer (Warnakulasuriya, 2009)

From the study of Orbak et al. Oral cancer was one of the six most frequently occurring cancers with most frequent type of squamous cell carcinoma (SCC) (Orbak, Bayraktar, Kavrut, & Gu'ndogdu, 2005). Amount and duration of chewing tobacco and smoking was linked with the risk of developing Oral cancer (American Cancer Society, 2016). Food habit oral hygiene, alcohol drinking and life style etc. are

other risk factors of oral cancer. There are various risk factors associated with oral cancer that includes. But the major risk factor is tobacco use and its usage in various forms such as smoking and smokeless are prevalent in Nepal. This habit not only affects an individual's health but also the overall well being. The worst hit by this habit are the low socioeconomic strata, who succumb to this habit and finally to its detrimental effects on their health. From different studies it was evident that tobacco containing product is unsafe for human health. As shown in research of Janabaz et al. there are more than twenty-five compounds in smokeless tobacco which have cancer causing activity. Use of smokeless tobacco has been linked with risk of oral cancer. Smokeless tobacco contains tobacco-specific nitrosamines (TSNAs), polonium, formaldehyde, cadmium, lead, and benzo[a]pyrene, which are carcinogenic agents (Janbaz, Qadir, corresponding, Basser, Bokhari, & Ahmad, 2014).

Cancer is a major health problem worldwide but its impact is huge in developing countries like Nepal due to less awareness, geographical difficulties, transportation, poverty, inadequate preventive and curative care. Jemal et.al. in their study mentioned "Cancer survival tends to be poorer in developing countries, most likely because of a combination of a late stage at diagnosis and limited access to timely and standard treatment" (Ahmedin Jemal, 2011). Despite of preventive efforts such as advertisement of tobacco related hazards, tax increments in tobacco products and other efforts there is still less change in tobacco consumption pattern and oral cancer cases. The present study was to explore the oral cancer in female from Terai region of Nepal. V S Binu et al. mentioned that reliable information about incidence of cancer was not available in Nepal (Binu, et al., 2007). Studies on oral cancer prevalence, risk analysis will support on preparing strategies to lower the disease burden.

Objective

To assess the oral cancer prevalence among female tobacco chewers in Terai region of Nepal.

2. Materials and methods

The data was collected from the BP Koirala Memorial Cancer Hospital, Chitwan Nepal. The hospital record survey data was collected based on sample size of 800 randomly selected 160 cases each year of diagnosed cancer cases from year 2009 to 2013 at BP Koirala Memorial Cancer Hospital, Bharatpur, Chitwan, Nepal. Chure mountain range divided to Hill and Terai of Nepal for study purpose.

South to the range was Terai and north to it was considered as Hill.

The study research design was quantitative, descriptive and cross sectional in nature. The data was collected from the patient's records using checklist to collect required information. The analysis was presented in frequency table and cross tables. In the study tobacco chewing habit was studied keeping other risk factors constant. Nepal Health Research Council supported providing ethical for the study.

3. Results and Discussions

3.1 Demographic profile of respondents

3.1.1 Cancer patients distribution from year 2009 to 2013 AD

The initial results here describe about patients distribution of five years, information on age groups of the cancer patients. The following table shows the of cancer cases from year 2009 to 2013

Table 1: Cancer case distribution from year 2009 to 2013 AD

Region	Cancer patients % within Year of Observation	Year of Observation					Total
		2009	2010	2011	2012	2013	
Terai		54.40%	48.10%	65.60%	48.10%	48.10%	52.90%

Source: Field survey, 2015

The data presented in above table showed that 54.4%, 48.1%, 65.6%, 48.1% and 48.1% were cancer patients in Terai from year 2009 to 2013. Total cancer patients from Terai were 52.9% and highest in year 2011 which was 65.6%. It might be due to the availability and accessibility of health service was better in Terai region.

3.1.2 Cancer Patients Distribution by Age Group and Marital Status

Following figure describes about the patient's age group and marital status

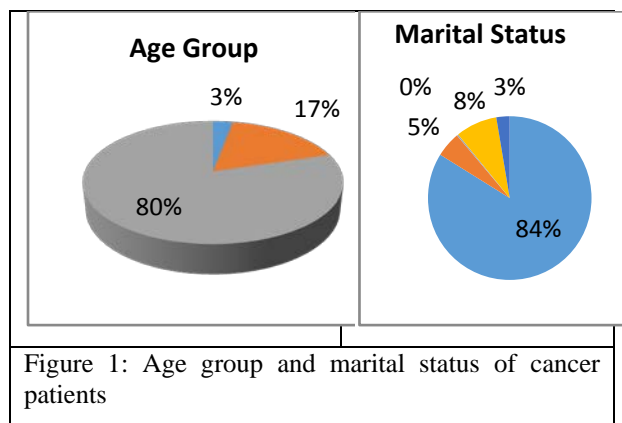


Figure 1: Age group and marital status of cancer patients

Source: Field Survey, 2015

Above figure showed that the cancer patients were 3% in age group below 20 years, age 20 to 40 years 17% and 80 % from age 41years and above. It showed that the cancer cases were high in among the age of 41 and above. Advancing age is the most important risk factor for cancer overall, and for many individual cancer types. According to the most recent statistical data from NCI's Surveillance, Epidemiology, and End Results program, the median age of a cancer diagnosis is 66 years (National Cancer Institute, 2015). Other chart of marital status of the patients showed that 84% were married, 5% unmarried, 8% widowed and others (who were either not living with family, not divorced but living alone etc.) were 3%. Married population comprise high among the cancer patients.

3.1.3 Oral and other cancer distribution by body parts

The table below showed the female oral cancer oral and other cancer patients who were tobacco chewers. The data was of the cancer cases within the tobacco chewer females from Terai region of Nepal.

Table 3: oral and other cancer distribution by body parts among female patients

Region	Sex	Cancer type	
		Oral and Oro-pharyngeal cancer (%)	Other Cancers (lung, Breast, cervix, liver, gall bladder, colon, colorectal, skin etc.)
Terai	Female	46.1%	53.9%

Source: Field survey, 2015

From above table the oral and oral cavity cancer was found in 46.1% and cancer of other body site (lung, breast, cervix, stomach, gall bladder etc.) in 53.9% within cancer types of female tobacco chewers from Terai region. Cohort study on tobacco chewers' females from India also showed that oral cancer was strongly related to the chewing tobacco habit. Their finding showed significant association of quantity, frequency and duration of tobacco consumption (Jayalekshmi, Gangadharan, Akiba, Nair, Tsuji, & Rajan, 2009). Other studies on oral cancer also showed strong relation of oral cancer with tobacco consumption in the study of Znaor et al. (Znaor, et al., 2003). Muwonge et al. mentioned Tobacco chewing as the strongest risk factor associated with oral cancer (Muwonge, et al., 2008). The authors advised for further evaluation on smokeless tobacco use and oral cancer risk in their paper (Bouquot & Meckstroth, 1998).

Findings from this study showed 52.9% cancer cases during the year of observation from 209 to 2013 in Terai region. Similarly, 80% of oral cancer patients were of age more than 41 years and 84% were married. There was high prevalence of tobacco chewing habit in females of Terai region among the oral cancer patients. The finding showed that almost half of the female tobacco chewers had oral cancer among the tobacco chewers in Terai of Nepal, which was also supported by studies from other researchers in different countries. From the study it is evident there is high prevalence of female oral cancer among tobacco chewers in Terai of Nepal. Interview with oncologist from cancer hospital the fact was further supported that chewing tobacco and smoking increased the risk of oral cancer.

4. Conclusion

Cancer cases were more in the age group more than 41 years. The married patients were 84% followed by widowed, divorced and others. There were 52.9% Cancer cases in Terai region during the years of observation. The study showed that there were 46.1% tobacco chewer female oral cancer patients in Terai region of Nepal. That is almost half were female oral cavity cancer patients who chew tobacco. It signifies the need of further study in cause of high oral cancer prevalence in female and tobacco chewing habit along with other risk behavior in Terai region of Nepal. The study also indicated further investigation on vulnerability of females for oral cancer and related behavior.

Acknowledgement

I would like to thank Dr. Bhakta Man Shrestha, Dr. Tej Bahadur Karki for their advice in writing process, NHRC Team, and BPKMCH, Chitwan, Nepal for their approval to conduct research.

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