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PERCEPTION ABOUT ORAL CANCER AND ITS RISK FACTORS IN AN URBAN-SLUM POPULATION OF JODHPUR CITY

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Abstract

Background: India contributes for one-third of the total burden of oral cancer worldwide. Lower socioeconomic groups are more affected with oral cancer as they are more attracted towards tobacco consumption and diagnosed in later stages due to lack of health-related awareness and diagnostic tools. Therefore, this study was conducted to assess the knowledge and awareness about oral cancer, its risk factors and to ascertain the distribution of risk factors in the urban slum population.

Methods: A cross-sectional survey conducted in the urban-slum population of Jodhpur in 2019 using cluster sampling strategy to collect data from 1200 participants. The semi-structured questionnaire was used to obtain information on knowledge and awareness for oral cancer, its risk factors, signs, symptoms and distribution of different patterns of risk factors for oral cancer.

Results: Out of surveyed 1200 participants, 48.5 % were males and 51.4 % were females. 46.6% males and 53.4% females of the study population heard about oral cancer Among study population, 28.9 % reported tobacco, 27.8% smoking, 29.8% alcohol and 27% betel-nut chewing as risk factor of oral cancer. Almost 53% considered oral cancer as a consequence of dental treatment and 49% believed that it can transmitted through close contact. The knowledge about signs or symptoms of oral cancer was quite low in urban-slums. Consumption of various risk factors like tobacco, alcohol, both alcohol and tobacco, arecanut were significantly associated with gender.

Conclusion: This study highlights the lack of awareness regarding oral cancer and its risk factors in the urban-slum population. A significant number of the population in the study were tobacco or alcohol users which makes them more vulnerable to oral malignant diseases. This emphasized the need for health education interventions for raising oral cancer awareness in these high-risk groups.

Keywords: Awareness, oral cancer, tobacco, urban slum

Introduction

In India, the highest numbers of oral cancer patients were accounted for, which alone contributes one-third of the total burden of oral cancer worldwide [1]. Oral cancer in the Indian population was mostly affecting males and it was the third most common in females [2]. The consumption of tobacco (smoking or smokeless), betel quid, alcohol and human papillomavirus were commonly identified as risk factors [3]. In Asian countries, almost 90% of oral cancer reported in the population that have the habit of consuming tobacco [3,4]. It was indicated that tobacco users have 11 times more risk of oral cancer than those who never consumed tobacco [4].

Lower socioeconomic groups are relatively more affected with oral cancer as they are more attracted towards tobacco consumption and diagnosed in later stages due to lack of diagnostic tools [5,6]. Consequently, delayed diagnosis hampers the prognosis of the disease and makes the cost of treatment also unaffordable for these groups in advanced stage [7].

The lack of awareness for oral cancer, its risk factors, signs and symptoms considered as responsible for delayed diagnosis which further results in poor treatment outcomes [8]. Most of the oral cancer patients (60-80 %) in India were reported as diagnosed in advanced stages that may lead to poor survival rate [9].

Generally, urban slums have more habits like tobacco or alcohol and they are considered as more vulnerable to developing oral cancer lesions [10]. They are generally lacking health-related awareness and have lower socioeconomic status in terms of education and occupation [11]. It is important to develop awareness and early diagnosis programs for oral cancer, especially in resource limited areas [12]. Some researchers suggested that mobile

screening for early detection of oral cancer lesions need to be considered in these socially deprived regions [13].

Hence, the present study was conducted with objectives to assess the knowledge and awareness about oral cancer, its risk factors and to ascertain the distribution of risk factors in the urban slum population.

Methods

A cross-sectional study was conducted in urban- slums of Jodhpur city in 2019. Cluster sampling method was used. Eight different localities were selected based on town planning department, Jodhpur in the first stage and then in the second stage, 23 slums from each locality were selected for the study. We selected 1200 participants for the study. Data was collected through the questionnaire on knowledge and awareness for oral cancer, its risk factors, signs, symptoms and distribution of different patterns of risk factors for oral cancer in selected urban-slums of Jodhpur city. Participants from age more than 15 years who provided their consent were selected for the study. Data were collected and entered into Epiinfo for analysis. The descriptive statistics like frequencies, percentages were calculated. P-value<0.05 is considered as significant.

Results

Out of total 1200 participants in study, 48.5 % (n=583) were males and 51.4 % (n=617) were females. Around 56.4 % (n=677) of the study population has heard about oral cancer, out of which 46.6% (n=316) were males and 53.4% (n=361) were females. Among the study population, 53.1 % (n=359) of the population who have secondary and above education level knew about oral cancer. Comparatively, the younger population of the age group of 15-30 years (58%; n= 391) has heard more about oral cancer in slums.

When asked about risk factors of oral cancer from the slum population, 28.9 % (n=347) of the population reported tobacco, 27.8% (n=334) smoking, 29.8% (n=358) alcohol and 27% (n=324) betel-nut chewing as a risk factor of oral cancer. Mostly, the younger population of the age group 15-30 years and who had completed secondary education and above reported that additive products (tobacco, smoking, betel nut and alcohol) can cause oral cancer.

Almost 53% (n=640) of the population considered that oral cancer is a consequence of dental treatment and 49% (n=588) believed that it can transmit through close contact with other cancer patients. These beliefs were comparatively more seen in females or illiterates of the study population.

Overall, the knowledge about signs or symptoms of oral cancer was quite low in urban-slums. Only around 12 % reported at least one of these symptoms: white or red marks, ulcer in the oral cavity, difficulty in mouth opening as a sign of oral cancer and development of abnormal tissue growth.

Around 63.4% (n= 761) of the population believed that oral cancer is a matter of luck and only 33% (n=397) agreed that prevention of oral cancer can be possible. There were 30.7% (n=369) people who considered that lifestyle modifications can reduce the risk of oral cancer. 31.5% (n=340) know self-mouth examination for oral cancer. Table no. 1 illustrates the knowledge and awareness about oral cancer, its risk factors, signs and symptoms.

Table 1: Knowledge and awareness about oral cancer in urban- slums population

Variables	Gender		Age groups in years			Educational qualifications		
	Males	Females	15-30	31-45	46 & above	Illiterate	Primary	Secondary & above
Ever heard about oral cancer	316 (46.6%)	361 (53.4%)	391 (58.0)	191 (28.0)	95 (14.0)	221 (32.6)	97 (14.3)	359 (53.1)
Risk factors mentioned for oral cancers								
Tobacco	161 (46.4%)	186 (53.6%)	200 (57.6)	98 (28.2)	49 (14.2)	119 (34.2)	44 (12.7)	184 (53.1)
Smoking	159 (47.6%)	175 (52.4%)	190 (56.8)	102 (30.6)	42 (12.6)	107 (32.1)	46 (13.8)	181 (54.1)
Betel nut	142 (43.8)	182 (56.2)	185 (57.1)	99 (30.6)	40 (12.3)	107 (33.1)	48 (14.8)	169 (52.1)
Alcohol	169 (47.3)	189 (52.7)	204 (56.9)	108 (30.3)	46 (12.8)	116 (32.5)	52 (14.5)	190 (53.0)
Poor oral hygiene	171 (48.1)	185 (51.9)	209 (58.7)	99 (27.8)	48 (13.5)	118 (33.2)	54 (15.2)	184 (51.6)
Family history of Oral cancer	139 (42.5)	188 (57.5)	155 (47.4)	112 (34.2)	60 (18.4)	131 (40.1)	53 (16.2)	143 (43.7)
Due to dental treatment	305 (47.6)	335 (52.4)	266 (41.5)	256 (40)	118 (18.5)	302 (47.3)	95 (14.8)	243 (37.9)
Sun exposure	235 (53.4)	205 (46.6)	215 (48.8)	159 (36.2)	66 (15)	198 (45)	69 (15.6)	173 (39.4)
Close contact with Oral cancer patient	240 (40.8)	348 (59.2)	247 (42)	221 (37.6)	120 (20.4)	280 (47.6)	84 (14.3)	224 (38.1)
Infections in the teeth	293 (50.3)	290 (49.7)	284 (48.8)	201 (34.4)	98 (16.8)	213 (36.6)	91 (15.6)	279 (47.8)
Tea/Coffee	270 (43.7)	347 (56.3)	265 (42.9)	227 (36.8)	125 (20.3)	276 (44.7)	88 (14.3)	253 (41)

Knowledge about signs/symptoms of oral cancer								
White or red patch In oral cavity	64 (41.8)	89 (58.2)	67 (43.8)	62 (40.6)	24 (15.6)	64 (41.8)	19 (12.5)	70 (45.7)
Ulcer in mouth	71 (49.4)	73 (50.6)	72 (50)	48 (33.4)	24 (16.6)	56 (38.9)	27 (18.7)	61 (42.4)
Difficulty in mouth opening	67 (45.8)	79 (54.2)	70 (47.9)	50 (34.2)	26 (17.9)	63 (43.2)	17 (11.6)	66 (45.2)
Development of Unnatural growth	50 (35.9)	89 (64.1)	69 (49.6)	48 (34.6)	22 (15.8)	50 (35.9)	28 (20.2)	61 (43.9)
Consider oral cancer is matter of luck	379 (49.8)	382 (50.2)	356 (46.8)	264 (34.6)	141 (18.6)	277 (36.5)	119 (15.6)	365 (47.9)
Oral cancer can be prevented	193 (48.6)	204 (51.4)	183 (46)	141 (35.6)	73 (18.4)	148 (37.2)	56 (14.1)	193 (48.7)
Self-mouth examination can be helpful in early detection of oral cancer.	187 (50)	187 (50)	174 (46.6)	119 (31.8)	81 (21.6)	136 (36.4)	56 (14.9)	182 (48.7)
Knowledge of oral self-examination for oral cancer.	197 (57.9)	143 (42.1)	158 (46.5)	122 (35.8)	60 (17.7)	119 (35)	37 (10.8)	184 (54.2)
Lifestyle modifications can reduce the risk of oral cancer	190 (51.4)	179 (48.6)	173 (46.8)	133 (36.1)	63 (17.1)	129 (34.9)	54 (14.7)	186 (50.4)

In study population, 65% (n=789) consuming tobacco in any form, out of which 58.5% (n=462) were males and 41.5% were females. Tobacco was mostly consumed in smokeless form reported in slums (n=712). However, males were more likely to consume tobacco in any form. But there was a significant number of females in the slum population using smokeless tobacco (n=296). Alcohol consumption was mostly reported in males (70.9; n=481) in comparison to females. Dual tobacco users or alcohol users with tobacco were also reported in the population. Areca-nut or pan masala consumption was also seen in the study population either alone or in combination with tobacco but areca-nut usage predominantly found in females. Consumption of various risk factors like tobacco (smoking or chewing), alcohol, both alcohol and tobacco, arecanut chewing were significantly associated with gender. Table no. 2 shows the distribution of risk factors (such as different forms of tobacco, alcohol) among urban slums.

Table 2: Distribution of risk factors among urban-slum population

	Males	Females	P-value
Tobacco use	462 (58.5)	327 (41.5)	X^2=91.7 P-value< 0.05
Smoking	63 (81.8)	14 (18.2)	X^2=46.47 P-value<0.05
Smokeless tobacco use	299 (50.3)	296 (49.7)	X^2= 17.08 P-value<0.05
Dual use (smoking and chewing)	100 (85.4)	17 (14.6)	X^2= 70.61 P-value<0.05
Alcohol use	481 (70.9)	197 (29.1)	X^2= 311.9 P-value<0.05
Use of tobacco and alcohol both	394 (74.6)	134 (25.4)	X^2= 266.9 P-value<0.05
Areca-nut	23 (12.4)	163 (87.6)	X^2= 115.58 P-value<0.05
Pan-masala	120 (48.4)	128 (51.6)	X^2=0.0048 P-value>0.05

Discussion

In this study, we observed that females were relatively more aware of the presence of oral cancer, its associated risk factors and their signs or symptoms in comparison to males. It was indicated in studies that oral cancer in India affects 2- 4 times more in males in comparison to females and this may be attributed to lifestyle and behavioral factors [3,4]. In the slum population, males were more at risk of oral cancer as they have low awareness regarding oral cancer and are relatively more attracted to tobacco or alcohol. Therefore, there is a need to plan gender-based awareness activities for oral cancer.

In the study population, the younger population reported comparatively more awareness and knowledge regarding oral cancer than the older population. Low awareness for oral cancer among the illiterates was evident in this study. Similar findings were found in the study of Gorakhpur city [14]. This may be due to the reason that younger population are more exposed to mass media and participate in different tobacco activities [14]. Due to low knowledge and

awareness of oral cancer in an older population and less educated population, oral malignant diseases may diagnose late and subsequently lead to poor treatment outcomes. Therefore, the specific awareness-raising and cessation programs for these groups need to be developed.

The misconceptions about oral cancer (such as considering dental treatment as a risk, transmits through close contact, oral cancer is a matter of luck) were evident among the study population. Similarly, the study in Kashmir reported various myths related to dental treatment and oral cancer; it might be due to low awareness level and socio-cultural beliefs in communities [15]. Because of these myths, people may not consult the doctor or dentist, which will further deteriorate the oral health and ultimately lead to a poor prognosis. Therefore, oral health interventions for awareness about these myths should be advocated.

A limited number of populations in this study were reported having knowledge of self-oral examination (31%). Researchers suggested that self-oral examination can helpful in raising awareness, prevention and early diagnosis of oral malignant diseases especially in high-risk population [16]. Therefore, there is need to implement the effective health education strategies for oral self examination in these high risk groups.

The consumption of smokeless tobacco was predominant in the slum population. Similarly, the use of smokeless tobacco was mostly used in the slum population reported in the studies [17,18]. The reason might be that the smokeless products are widely available at an affordable cost in India and it is relatively considered as safe product [18]. Some beliefs regarding the use of smokeless tobacco existed in the community like these products contain medicinal properties and are considered as good for heath [19]. However, overall lack of awareness for harmful effects of chewing were reported in other study conducted in Jodhpur and also emphasized the need for health education for tobacco control by every health professionals [20].

However, overall more male tobacco users were reported in the study. But there were significant number of females in slums chewing tobacco. The incidence of oral cancer among women due to the habit of chewing tobacco was reported in different parts of India [3]. Therefore, there is a need to develop health interventions for raising awareness in both males and females about the harmful effects of smokeless products.

Areca-nut consumption was also predominantly seen in females of the study population. Recently, the study conducted on Indian women reported that areca-nut chewing is highly addictive and it can act as an important risk factor for developing oral precancerous lesions, conditions, or head and neck cancers [21]. Therefore, it is also important to consider health awareness interventions regarding areca-nut chewing that especially focused on females.

Alcohol consumption was observed either alone or in combination with tobacco products. Studies indicated that alcohol consumption can increase the risk of oral and pharyngeal cancers [22,23]. Alcohol has carcinogenic properties as mechanisms including impairment of damage DNA repair and overexpression of certain oncogenes responsible for the progression of cancerous cells. Alcohol with the use of tobacco causes dehydration that can increase the penetration of tobacco carcinogens into tissues and also lowers the antioxidants level [23]. Moreover, it was documented that tobacco and alcohol consumption may increase the risk of health-related behavior and transmission of other infectious diseases [24]. Therefore, it is required to develop health education intervention for alcohol cessation along with tobacco cessation programs.

Conclusion

This study highlights the lack of awareness regarding oral cancer and its risk factors in the urban-slum population. A significant number of the population in the study were tobacco or alcohol users which makes them more vulnerable to oral malignant diseases. This emphasized the need for health education interventions for raising oral cancer awareness in these high-risk groups.

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