### Original Article

## Gap areas in mitigation of oral cancer: A cross-sectional study evaluating awareness and knowledge of risk factors in oral cancer in a tertiary hospital

#### ABSTRACT

**Purpose and Objectives:** One of the main causes of the increasing oral cancer (OC) burden in India is a lack of awareness and a significant gap in knowledge about risk factors and symptomology of OC.

**Materials and Methods:** A questionnaire-based cross-sectional study was to evaluate the knowledge and awareness about OC among 500 random patients presenting for care at a tertiary hospital in western Rajasthan which serves a wide area of western, northern, and central Rajasthan.

**Results:** A total of 446 participants, among which 83.6% were males enrolled in the study. Much to our despair, the results showed 35.23% of the participants (P = 0.007) started their habit at age <15 years. Nearly 60.3% of the participants were well aware of the harmful temporary or permanent effects of the tobacco. Around 40.85% of the participants taking tobacco products were ignorant about their changes in the tissues (site of tobacco placement). TV and Radio (50.5%) were the main source of information of the ill effects of tobacco and form a major contribution in public awareness. More than 90% of the participants had read the warnings on the tobacco packets. No doubt participants have knowledge about the ill effects of tobacco still there was a lack in behavioral modifications for tobacco cessation, leading to nonsuccess in quitting, with actual nonunderstanding about the ill effects of tobacco and overall lack of belief in the tobacco control measures.

**Conclusion:** Our findings have found a gap in the awareness efforts of OC for the general population and will make public health professionals, clinicians, policymakers, and government a better judge and motivate them to strengthen existing national tobacco control efforts.

Keywords: Awareness, knowledge, local population, oral cancer, risk factors

#### **INTRODUCTION**

Oral cancer (OC) is one of the major health concerns in India as it ranks among the top three cancers in the country.<sup>[1]</sup> The annual estimation of OC patients worldwide in 2018 is around 355,000 new diagnoses and over 177,000 deaths.<sup>[2]</sup> India has the world's highest number with approximately 20% of OC with estimated 1% of the population having oral premalignant lesions.<sup>[3]</sup> A recent study of 2020 concluded India having the highest incidence rates of mouth and oral tongue cancer in both males and females among 185 countries.<sup>[4]</sup> Head-and-neck (HN) cancer accounts for 20%–40% of total body malignancy with oral malignancy (9.4%) being the most common site by Indian Cancer registries.<sup>[5]</sup>

Access this article online	
Website: www.njms.in	Quick Response Code
<b>DOI:</b> 10.4103/njms.njms_427_21	

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Received: 19 June 2021, Revised: 07 September 2021, Accepted: 30 September 2021, Published: 14 April 2023

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How to cite this article: Chugh A, Kaur A, Bhardwaj P, Vishnoi JR, Joshi N, Kumar S, *et al.* Gap areas in mitigation of oral cancer: A cross-sectional study evaluating awareness and knowledge of risk factors in oral cancer in a tertiary hospital. Natl J Maxillofac Surg 2023;14:27-34.

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OC is multifactorial with predisposing factors such as tobacco (smoking and smokeless form), alcohol, human papillomavirus 16, 18, dietary factors, and genetic factors. About 50% of oral cavity cancer cases are attributed to smokeless tobacco (SMT) consumption.<sup>[6]</sup> In India, SMT is mostly consumed in the form of dried tobacco slaked lime (khaini), betel quid (pan), and gutkha (crushed areca nut, tobacco, catechu, paraffin wax, slaked lime, and sweet/savory flavorings)<sup>[7]</sup> However, the use of tobacco and alcohol has already been established risk factors, but the major determinant for OC in the high-risk countries is the use of betel quid,<sup>[8]</sup> which was classified as carcinogenic by IARC in 2009.<sup>[9]</sup> As smoking is considered a taboo in India, the use of SMT is preferred in many sectors of the society. A study in India has reported that betel quid chewing, with or without added tobacco, increases the risk of OC, independently of other tobacco and alcohol use.<sup>[9]</sup>

In India, across the general population, 28% of adult men and 12% of women consume oral SMT products.<sup>[10]</sup> However, as per Global Adult Tobacco Survey (GATS), tobacco use has been reduced from 34.6% to 28.6% and that of SMT from 25.9% to 21.4% in India, from 2009–2010 to 2016–2017.<sup>[11,12]</sup> These are often underestimated due to insufficient data especially from rural areas and more exposure to cheap tobacco products. Furthermore, data quality reporting in Indian urban cancer registries is still prone to errors.<sup>[13]</sup> The 2018 quality report from cancer incidence in five countries indicates that 23% cancers in rural Assam were unclassifiable.<sup>[14]</sup> The underrated determinants associated with SMT use which are often ignored include parental use, peer usage, social stigma, and enhanced personal interest.

India's cancer burden will continue to increase as a result of the continuing epidemiological transition.<sup>[15]</sup> The low socioeconomic groups in India are mostly commonly affected due to wide exposure to the risk factors.<sup>[16]</sup> They are not amenable to early detection aids or by self-examination. A gap in patient's knowledge and health literacy surrounding OC, specifically related to risk factors and symptomology, is posited to be among the key modifiable factors contributing to high morbidity and mortality.<sup>[17]</sup> Unfortunately, most OCs are diagnosed in advanced stages, requiring aggressive or palliative therapy, resulting in higher mortality. An alarming study done by Aggarwal et al. in 2015<sup>[18]</sup> showed the rising prevalence of HN and OC in Rajasthan. Among a total of 4587 malignancy cases, HN and OC constituted 32.18% of the total cases and OC accounted for 56.64% of the cases.<sup>[18]</sup>

The previous study by Horowitz *et al.* in 2002 have found that the knowledge of risk factors for oral/oropharyngeal

cancer has been very low with only one-quarter of individuals recognizing tobacco as a risk factor.<sup>[19]</sup> A regional study in India in 2020 found that only 55.5% of study participants identified tobacco and alcohol as risk factors for OC.<sup>[20]</sup> The lack of awareness of signs and symptoms and risk factors associated with OC is believed to a barrier for early detection of OC. Contrary to the above study, a recent study concluded that people who smoke >20 cigarettes per day were more knowledgeable about tobacco and OC.<sup>[21]</sup> Since, most of the cases are due to lifestyle factors such as tobacco and alcohol, these behaviors are changeable by the use of effective primary preventive programs.

Therefore, we had designed a cross-sectional study to evaluate the knowledge and awareness about OC among patients presenting for care at a tertiary hospital in western Rajasthan which serves a wide spread area of western, northern, and central Rajasthan. The study additionally guides us for requirement of the OC awareness programs in near future.

#### MATERIALS AND METHODS

A cross-sectional study was planned according to Strobe guidelines in the Department of Dentistry, ENT, and Surgical Oncology, between December 2019 and February 2020 after getting approval from the Institutional Ethical Committee. This study proceeded after getting clearance from Institutional Ethical Committee with reference number AIIMS/IEC/2018/696.

A self-administered questionnaire [Supplemental File 1] was distributed randomly to the patients visiting outpatient department, aged 18 years and above who could understand Hindi or English. The questionnaire was available in both the languages. The patients were excluded due to language barrier or those who were not willing to give consent for participation. The questionnaire was administered in the waiting area of the department.

The participation in this study was on the voluntary basis. An information sheet was also handed over to the participants who included the instructions for administering the survey, and written informed consent was obtained from the patients before evaluation. All participants were assured of anonymity and confidentiality.

This questionnaire was modified from various other questionnaires in the literature.<sup>[21-24]</sup> The questionnaire was pretested/piloted on twenty participants, and modifications were made according to the responses before the final questionnaire was administered. The reliability of the

questionnaire was analyzed using Cronbach's alpha whose value came out to be 0.83. The approximate time for completion was estimated at 10–15 min.

A paper-based survey tool consisting of 42 questions was developed by the study team and organized into subsections to collect information on demographics such as patient's age, gender, geographical location, socioeconomic status (5 questions), current and historic behavioral habits of the participants concerning tobacco and alcohol habits (7 questions), awareness and knowledge of OC (16 questions), risk factors associated with OC (9 questions), early signs of OC (2 questions), and treatment (3 questions). The survey targeted a convenience sample and was not driven by a defined sample size.

Survey responses were manually added into a Microsoft Excel sheet, and a 10% validation was performed by second personnel to validate the accuracy of the data entered. The missing data elements were excluded from the study analysis.

#### **Statistical analysis**

Data were collected, and statistical analysis was done using SPSS software version 21 (IBM Corp. Ltd., Newark, USA). Frequency distribution of the demographic data and the responses was analyzed and tabulated. The relationship between demographics and awareness, knowledge was analyzed by Chi-square test. Differences were considered statistically significant if  $P \le 0.05$ .

#### RESULTS

A total of 450 questionnaires were distributed out of which 446 completely filled and returned the questionnaire with a response rate of 99.11%. Demographic data are illustrated in Table 1. Among the 446 total responders, 83.6% were males. Nearly 68.6% of participants were residents of Jodhpur district. Around 63.1% of participants belong to low socioeconomic status with monthly income with <20,000 Indian rupees.

#### Habit of the participants

This area as depicted in Table 2, and Figure 1 concerns with the present and past habits of the participants in terms of use of SMT, frequency of intake, and duration. Males had a significantly increased habit of using tobacco products than females (P = 0.031). Earlier 169 participants were addicted to their habit, out of which 39 quitted, thus 29.15% presently using tobacco in one or the other form. The most shocking results were that 35.23% of the participants (P = 0.007) started their habit at age <15 years. Around 95% of the participants preferred to spit the SMT than to swallow.

# Awareness and knowledge of the participants about oral cancer and its risk factors

Approximately 80% of participants have heard about OC with 24.7% reported having a relative or friend already afflicted with OC. About 20% of participants thought that OC is the disease of the old people and is inherited in the family. According to the participants, OC is most likely the disease of the males (68%). Nearly 60.3% of the participants were well aware of the harmful temporary or permanent effects of the tobacco. Around 40.85% of the participants taking tobacco products were ignorant about their changes in the tissues (site of tobacco placement) as shown in Figure 2.

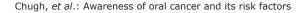
TV and Radio (50.5%) were the main source of information of the ill effects of tobacco and form a major contribution in public awareness. More than 90% of the participants had read the warnings on the tobacco packets. About 76.68% of participants were against the promotion of tobacco products by TV actors. Approximately 60% of the participants were aware of the possible risk of tobacco, cigarettes, and SMT. Moreover, more than half of the participants knew about the additive effect of alcohol and other risk factors.

Only about 205 of the participants were able to identify all the signs of the OC. However, the most common potentially malignant condition such as Oral Submucous Fibrosis with clinical symptom of decreased mouth opening was identified

#### Table 1: Demographic details of the study population

Variable	n (%)
Age (years)	
<20	93 (20.9)
21-30	182 (40.8)
31-40	79 (17.7)
41-50	50 (11.2)
51-60	20 (4.5)
>60	22 (4.9)
Gender	
Male	373 (83.6)
Female	73 (16.4)
Area of residence	
Jodhpur	306 (68.6)
Outside Jodhpur	140 (31.4)
Monthly income (Rs.)	
<10,000	162 (36.3)
10,000-20,000	124 (27.8)
20,000-30,000	66 (14.8)
30,000-40,000	40 (9.0)
>40,000	54 (12.1)
Number of family members	
≤4	131 (29.37)
5-6	189 (42.4)
>6	126 (28.3)

National Journal of Maxillofacial Surgery / Volume 14 / Issue 1 / January-April 2023



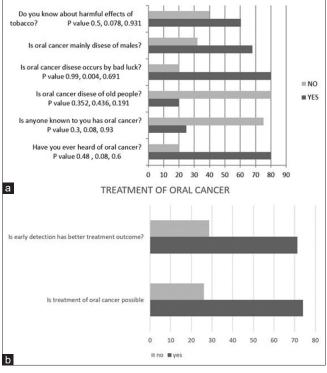


Figure 1: (a and b) Bar diagram depicting awareness about knowledge and treatment of oral cancer in the study population. Values are written in the form of % and *P* value is written in comparison of age, sex, and income

by 30% of individuals. The "change in voice" was also identified as a sign of some disease by 55% which required visit to a doctor. About 60% of individuals were able to correlate the use of alcohol as an increased risk factor for OC with 35%–55% agreeing with spicy food, less greeny vegetables, and chronic irritation as possible causative factors.

#### Treatment of oral cancer [Figure 1]

Nearly 73.99% of participants had positive attitude toward treatment of OC with 71.3% thought that early detection of cancer has better survival. Participants had better knowledge about the treatment options of OC and 70% of the participants knew about combination treatment of medicines, surgery, and radiation. Nearly 42.6% preferred to go to dentist for evaluation of the symptoms, followed by 20.4% preferring physician and 15% opting for ENT/ oncosurgeon each.

#### DISCUSSION

This data collected in the present study show that the most of the participants were aware of the tobacco as the risk factor for OC, but the knowledge of the other associated risk factors such as alcohol, chronic irritation, and spicy food was less extensive. No doubt people were acquainted with ill effects of tobacco, it was highly distressing that behavioral modification was still lacking in the participants.

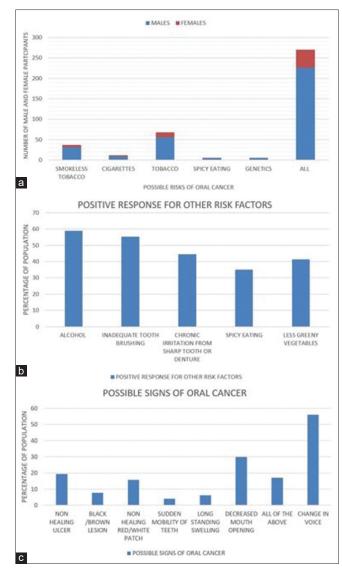


Figure 2: (a-c) Bar diagram depicting awareness about risk factors and signs/ symptoms of oral cancer in the study population

India has the second highest population in the world, residing in different states and union territories with varying degrees of development, population genetics, lifestyles, and environments, leading to heterogeneous distribution of cancer burden and health loss. Lip and oral cavity cancer were the most common incident cancer in males in India in 2016 with SMT, alcohol use, and smoking being the leading risk.<sup>[25]</sup> Crude annual incidence rate of all cancers together in the Rajasthan state increased from 58.8 in 1990 to 72.6 in 2016 with lip and OC forming 7.2% burden.<sup>[25]</sup>

Most of the population in our study was young adults between 21 and 30 years forming approximately 40% of the participants. Nearly 80.5% of individuals had heard about the OC which in a way is improvement, as compared to previous studies in South Indian population in 2012 (60.2%)<sup>[23]</sup> and Portuguese population in 2012 (68.6%).<sup>[26]</sup> This may have

	Have you ever used tobacco in any form?			What was the initial age when started?				Р	Current use		Р	
	No	Yes	Р	Never used	<15 years	15-20 years	>20-25 years	>25 years		0	1	
Age (years)												
<20	13.45	7.39	0.702	13.45	4.03	3.36	0	0	0.007	16.36	5.15	0.56
21-30	25.56	13.67		25.56	5.15	4.93	3.36	0.22		28.25	12.55	
31-40	10.53	8.74		10.53	4.48	2.01	1.34	0.89		12.78	4.93	
41-50	5.60	5.60		5.60	1.12	1.56	1.79	1.12		7.17	4.03	
51-60	2.46	2.01		2.46	0.44	0.44	0.89	0.22		2.91	1.56	
>60	3.13	1.79		3.13	0.22	0.67	0.67	0.22		3.36	0.89	
Sex												
Male	50	33.63	0.031	50	10.76	13.45	6.72	2.69	0.121	58.74	24.88	0.312
Female	10.76	5.60		10.76	3.13	1.34	1.12	0		12.10	4.26	
Income												
<10,000	19.95	16.14	0.293	19.95	7.17	5.15	2.69	1.12	0.438	23.76	12.55	0.146
10,000-20,000	17.93	9.86		17.93	3.36	4.48	1.34	0.67		20.62	7.17	
20,000-30,000	8.52	6.27		8.52	1.79	2.91	1.34	0.22		9.86	4.93	
30,000-40,000	5.38	3.58		5.38	0.67	1.34	1.34	0.22		6.72	2.24	
>40,000	8.96	3.13		8.96	0.89	1.12	0.67	0.44		9.86	2.24	

Table 2: Habits of the study population (values are written in percenta	<b>Table</b>	2:	Habits	of	the	study	po	pulation	(values	are	written	in	percentac	jes	s)
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been possible due to mass awareness by media, increased internet usage, and literacy. Even though, the awareness has increased, still 40% of the population was currently using or was using presently tobacco products. According to GATS, tobacco use in India has been higher among males than females which are coinciding with our results.<sup>[11]</sup> The pattern of use of chewing tobacco (i.e., spitting and not swallowing) is same in our study and GATS.<sup>[11]</sup> Bhan N *et al.* compared the use of socioeconomic status along the with use of SMT as follows: 30.9% poorest, 22.9% poor, 36.4% medium, 16.6% rich, and 10% richest, further concurred our results.<sup>[27]</sup>

In India, various forms of SMT are available and are commonly chewed, sniffed, or applied to teeth or gums. Ironically, smoking is considered as a taboo in many families of India. There is a wide social acceptance of the use of tobacco in the form of paan and misconception of use of tobacco as an aid in weight reduction, hunger suppression, and as analgesics for dental pain.<sup>[28]</sup> This common misconception is that it is considered safer over smoking which could be on the grounds of its usage in terms of initiation and persistence. The initiation of the use of SMT is mainly influenced by peer influence (friends or coworkers), parental tobacco use, or coping up family problems which has also been supported by various studies.<sup>[29-33]</sup> Other factors responsible for the initiation of tobacco use were poor academic performance and stress.<sup>[33]</sup>

Some of the participants (35.23%) started their habit at an early age <15 years, which is shockingly higher than the previous surveys Global Youth Tobacco Survey (GYTS) (2000-2004), reported the prevalence of ever use of tobacco

in any form to be 25.1%, with current cigarette smoking being 17.5% and the current use of SMT to be 14.6% in the age group of 13–15 years.<sup>[34,35]</sup> However, these data are older and not updated in the past 10 years. From the findings of Global Youth Survey, The WHO has estimated that 3.6% of world's population aged 13–15 years uses SMT, with boys to girls ratio of 2:1.<sup>[36]</sup> The situation is worse for the South East Asian youngsters (7.3%) with highest prevalence of SMT use. These users accounted for nearly 60% of all SMT users aged 13–15 years in the world.<sup>[36]</sup> GATS 2009–2010 also confirmed the use of SMT in 28.6% of individuals of age 15 years and above and 75% of these adults resides in rural areas.<sup>[12]</sup>

This coincides with a study done in India at 29 registries, showing increased risk of mouth and tongue cancers at a very early age of 0–20 years, especially in the western region population-based cancer registries.<sup>[37]</sup> Another study by Ministry of Health and Family Welfare, India in 2017 reported that knowledge of SMT risks is lowest in the Western India and highest in Northern India.<sup>[38]</sup> The carcinogens extracted from smokeless consumption are directly absorbed into the body through mucous membranes in the mouth or nose, leading to serious issues. The present article further adds up to the literature the reason of increased magnitude of OC in younger individuals in India.

Nearly 40% of the participants were ignorant about the changes occurred in their oral cavity due to consumption of the tobacco or its products. The main psychology is the myth that OC is the disease of the older individuals. Other significant myths prevalent in the society are about OC being

contagious, cancer does not happen to all, risk of cancer by comparison of tobacco consumption among other peers, males being more prone to OC, and bad luck being the reason for OC. This is probably due to misinformed public which is a similar situation to what has been revealed in Sudan, Iran, Yemen, and Jordan.<sup>[39-42]</sup> However, in a study of Portugal,<sup>[26]</sup> 61% of people disagreed with the statement of OC being caused by bad luck which is much higher than our study where 80% believes in bad luck.

Most of the participants irrespective of gender, age, and socioeconomic status felt that decreased mouth opening followed by nonhealing ulcer is the main clinical sign and symptom of OC. Prevalence of oral submucous fibrosis is high in Rajasthan, so many people were aware about decreased mouth opening as a clinical sign/symptom of cancer. The presence of red/white patch, sudden mobility of teeth, and swelling were not associated with OC according almost half of the participants. This was in accordance to other reports by West et al.<sup>[43]</sup> and Pakfetrat et al.<sup>[44]</sup> However, this can have a negative impact of ignorance of premalignant lesions and conditions which if eliminated in time could contribute in reducing the risk of developing OC. Alcohol was considered to have an additive effect by most of the individuals, may be because of increased awareness by mass media and the Internet. About 75% of participants were against the promotion of the tobacco/alcohol products by actors becomes a strong deterrent when people of repute are projected in these advertisements. It requires attention and action by the government.

Nearly 73.99% of participants thought that OC is treatable, while 70% had a belief that early detection has better chances of survival and knew about the role of chemotherapy, surgery, and radiotherapy. These levels are poorer than studies in other advanced countries where there is much more awareness about the treatment and prognosis of OC (94.5%).<sup>[26]</sup> Dentists can be a first line in the screening of the risk factors as 40% of participants preferred to visit them if they felt any change in the oral cavity. The very reason for participants preferring dentists is a notion in individual's mind that OC is just the disease of oral cavity and teeth, and there is no involvement of other systemic organs.

A considerable portion of the participants received their information through mass media. This indicates the importance of mass media in educating the public and raising awareness about OC signs symptoms and risk factors, which would entail an increase in early detection, diagnosis, and thus survival rates. These results were similar to other studies published.<sup>[41-43]</sup> Sadly, only a small group of individuals have obtained information from health workers like dentists. This

fact highlights the need for dental professionals to advise and inform their patients about OC.

This study has certain limitations, as the findings are based on the questionnaire reporting which are quite subjected to various biases. The participants may either have under- or over-reported their responses. Recall bias may also have occurred. Moreover, this study was restricted to the patients from a single health-care institute and may not be universally generalizable to other population-based settings. This possesses a selection bias within targeted population of the current study. We feel that, no doubt, the results may portray some scenario of the current situation, but it can change variably if we reach the remote areas of Rajasthan. Future studies may target community rather than patient population as patients can be more informed on the topic than an average community member who may only infrequently visit a health-care setting.<sup>[21]</sup>

No doubt participants have knowledge about ill effects of tobacco still there was a lack in behavioral modifications for tobacco cessation, leading to nonsuccess in quitting, with actual nonunderstanding about the ill effects of tobacco and overall lack of belief in the tobacco control measures. Our findings will make public health professionals, clinicians, policymakers, and government a better judge and motivate them to strengthen existing national tobacco control efforts.

The existing smoking ban does not cover 100% of all open spaces, and ironically, it misses out the use of SMT in public, which is the biggest flaw in the law. Many food and tea stalls are found to sell cigarettes and other tobacco products, even outside schools and hospitals, verifying the fact that even smoking in not strictly banned. Old existing laws should reformed from making the public places "smoke free" to "tobacco free." Further, penalties should be increased for overall reduction in the use of tobacco in public places and prevent passive smoking. Even the WHO FCTC acknowledges this gap and makes SMT a significant part of their 2025 goals.

#### **CONCLUSION**

Based on this cross-sectional study, we may conclude that there is improved literacy about ill effects of the tobacco and its products in the local population may be because of the educational initiatives targeted by the health-care providers. But still, according to the WHO, there are 266.8 million current tobacco users are there in India. This advocated toward more structured preventive, behavioral modification, and awareness programs using media. Furthermore, the government can also play a vital role on antitobacco strategies such as increase in prices and taxes on the products along with ban on the advertisements for the promotion. Since the demand is inelastic, the increase in prices should be very large to influence the consumption. This can play a major role in achieving behavioral modification. Dentists should play an important role in early diagnosis by early screening and raising the bar of knowledge in the population. This will be very beneficial in future with reduction in mortality and morbidity associated with OC.

## Financial support and sponsorship Nil.

#### **Conflicts of interest**

There are no conflicts of interest.

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#### DEPARTMENT OF DENTISTRY

#### ALL INDIA INSTITUTE OF MEDICAL SCIENCES, JODHPUR

#### ORAL CANCER AWARENESS QUESTIONNARE

#### Answer the following questions. Tick the options wherever necessary.

S. No.	QUESTION	ANSWER
1.	Age	<pre>&lt;20 years ( ) 20-30 years ( ) 31-40 years ( ) 41-50 years ( ) 51-60 years ( ) &gt;60 years ( )</pre>
2.	Sex	MALE ( ) FEMALE ( )
3.	Address	
4.	Number of family members	
5.	Monthly income in rupees	<10,000 ( ) 10,000-20000 ( ) >20,000-30,000 ( ) >30,000-40,000 ( ) >40,000 ( )
6.	Have you ever tried pan masala, gutka, supari, kheni or any similar form?	YES ( ) NO ( )
7.	At what age did you first have it?	<15 years ( ) 15-20 years ( ) >20-25 years ( ) >25 years ( )
8.	Are you using these products at present as well? If "No" how many months/years back have u stopped it If "Yes" since how many months / years are you taking it	YES ( ) NO ( )
9.	How frequently do you take it?	Ocasionally ( ) Daily ( ) 5times in a day ( ) >5 times in a day ( )
10.	Daily how much duration in the mouth?	5-30 mins () >30 mins – 2hours () >2- 5 hours in a day () Most of the times when awake ()
11.	Do you place it in fixed position in mouth?	YES ( ) NO ( )
12.	Do you spit it or swallow it?	Spit () Swallow ()
13.	Do you think any of these forms can cause temporary or permanent changes to your mouth?	YES ( ) NO ( )

14.	Do you feel any change in the tissue where you keep it?	YES ( ) NO ( )
15.	Have you heard of oral cancer?	YES ( )
15.	have you heard of oral cancer?	NO ( )
16.	Does anyone known to you has oral cancer?	YES ( )
17.	Do you think oral cancer is a disease of older	NO ( ) YES ( )
17.	people (>50 years) only?	NO ( )
18.	Do you think oral cancer is contagious?	YES ( ) NO ( )
19.	Is oral cancer is inherited or just happens by	Inherited ( )
• •	bad luck?	Bad luck ( )
20.	Oral cancer is common in?	Males ( ) Females ( )
21.	What do you think are the possible risks for oral	Smokeless tobacco ( )
	cancer?	Cigarettes ( ) Tobacco ( )
		Spicy eating ( )
		Genetics ( )
		All ( )
22.	Smokeless tobacco is more harmful than	YES ( )
23.	smoking cigarettes? A relative / friend takes more gutka/ alcohol	NO ( ) YES ( )
23.	than me, he does not have oral cancer so I am at no risk ?	NO ( )
24.	Do you think alcohol has an additive effect in	YES ( )
	the development of cancer?	NO ( )
25.	Is inadequate toothbrushing responsible for	YES ( )
26.	cancer? Do you think that chronic irritation from a	NO ( ) YES ( )
20.	sharp tooth or denture can cause cancer?	NO ( )
27.	Do you think spicy eating leads to oral cancer?	YES ( ) NO ( )
28.	Does taking less vegetables and fruits increase	YES ( )
29.	the risk? When we leave tobacco, how long does it takes	NO ( ) <1 month ( )
29.	for its effects to get neutralise?	>1-3 months ( )
		>3-6 months ( )
		>6 months ( ) Never ( )
30.	Which all are the possible signs of oral cancer?	Non healing ulcer which is
		present for more than 3
		weeks ()
		Black / brown pigmentation that is present for years ( )
		Red / white patch which is
		not healing ( )
		Sudden mobility of teeth (
		) Long standing swelling ( )
		Rapidly reducing mouth
		opening ( )
31.	Do you think change in voice can be indicative	YES ( )
	of cancer?	NO ( )
	Do you think oral cancer is treatable?	YES ( )
32.		
		NO ( )
32. 33.	Do you think early detection of oral cancer means better prognosis?	NO         (         )           YES         (         )           NO         (         )

		Surgery ( ) Radiation ( ) Combination ( )
35.	What will you do if you note any of the signs?	Consult dentist () Consult physician () Consult ENT () Consult cancer surgeon () Wait and watch () Try home remedies like haldi
		See ayurvedic / homeopathic
36.	Have u heard about ill effects of cancer and need for stopping use of tobacco related products?	YES ( ) NO ( )
37.	Where have u heard ?	TV and Radio ( ) Dentist ( ) Physician ( ) Hoardings ( )
38.	Have you ever read about the caution written on cigarette or tobacco packets ?	YES ( ) NO ( )
39.	Did someone in the family motivated you to stop using these products?	YES ( ) NO ( )
40.	Were you able to decrease the frequency or stop using the product under the influence of some family member?	YES ( ) NO ( )
41.	Do you think actors should promote the use of these products in movies or advertisement?	YES ( ) NO ( )
42.	Do you think this questionnaire motivated you to stop using these products?	YES ( ) NO ( )