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## RESEARCH ARTICLE

# A CORRELATIVE STUDY ON ORAL HEALTH STATUS AND KNOWLEDGE ON ORAL HEALTH HAZARDS AMONG TOBACCO CONSUMING ADULTS OF SELECTED COMMUNITIES OF GWALIOR, (M.P.)

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### ABSTRACT

**Background:** The majority of individuals view tobacco use as an adult issue. Most tobacco users start doing so before the age of 25. Use of tobacco negatively impacts oral health. This study aims to assess the current oral health status as well as their awareness of the detrimental consequences of tobacco usage on oral health.

#### Objectives of the Study

1. To assess the oral health status of adults consuming tobacco using observational checklist.
2. To determine the knowledge on hazards of tobacco consumption on oral health.
3. To find an association between oral health status and knowledge on hazards of tobacco consumption on oral health.

**Research Methodology:** A descriptive correlative approach was used. Study was conducted in Primary Health Centre, Gwalior, M.P. Total sample 100 tobacco-using people, including 50 smokers and 50 chewers were selected using purposive sampling technique. Data was collected using a structured interview schedule and observation checklist. Data was analyzed using descriptive and inferential statistics (unpaired t-test and chi-square test). **Result:** The findings revealed that there was no significance difference in knowledge scores between tobacco chewers and smokers ( $t_{98} = 0.7, p > 0.05$ ). There was no significant difference between oral health status of the tobacco smokers and tobacco chewers ( $t_{98} = 1.85, p > 0.05$ ). There was no correlation between knowledge on hazards of tobacco consumption on oral health and oral health status of the smokers. Chi square value showed significant association between occupation of tobacco smokers and oral health status ( $\chi^2_{1} = 9.09, p < 0.05$ ). **Interpretation and Conclusion:** The study revealed that even though the adults had good knowledge on hazards of tobacco consumption on oral health they had poor oral health status. This confirms the necessity for undertaking educational programs to raise individuals' understanding of tobacco use and issues it causes in Youth.

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## INTRODUCTION

Nearly four million the world over would have been saved from clutches of death due to tobacco addiction, if Columbus knew what he was introducing to the world (Europe) while discovering America. The Portuguese brought it to India about 4 centuries ago. Smoking was started later as chewing was considered unhygienic. Globally everyday about 80,000-1, 00,000 youth initiate smoking; most of them are from developing countries. Smoking is a costly habit and also annoys other people. Tobacco belongs to the night shade family Solanaceae and the genus Nicotiana named after Jean Nicot, French Ambassador to Portugal. Tobacco use is socially accepted in many segments of Indian society. Tobacco use in India is increasing but there are considerable changes in the type and met Head of Institutions by which it is used.

According to WHO estimates 194 million men & 45 million women use tobacco in smoked or smokeless form in India. Only 20% of the tobacco consumed in India is consumed as cigarette, 40% consumed as beedi and the rest in smokeless form. The WHO estimate that about 8 lakh persons die from tobacco related diseases. In India approximately 50% of cancers among males and 20% of cancers among females are caused by tobacco consumption. Although people are becoming aware of the ill effects of smoking in terms of morbidity and mortality still, they get enslaved. Most young tobacco users become regular users in their early teens. The mean age at starting tobacco use for adolescents and youth in rural and urban Mizoram was found to be 17.2 years in a household study of 375 people aged 10 years and above. It also contributes to bad breath and stains on one's teeth. A bulge in the cheek is becoming a symbol of manliness and strength.

## OBJECTIVES OF THE STUDY

- To assess the oral health status of adults consuming tobacco using observational checklist.
- To determine the knowledge on hazards of tobacco consumption on oral health.
- To find an association between oral health status and knowledge on hazards of tobacco consumption on oral health.

## METHODOLOGY

A descriptive correlational design is chosen for the present study to find out the relationship between knowledge on hazards of tobacco consumption on oral health and oral health status. A presumed effect is referred to as the dependant variable. In the present study it refers to oral health status of tobacco consuming adults. While 'Independent variable' is knowledge on hazards of tobacco consumption on oral health among tobacco consuming adults. The investigator had selected 2 communities under Primary Health Centre. In communities the main occupation of the people was fishing. After survey data revealed that most of the adults consume tobacco as a time pass habit. The area is approximately 7 Kilometres from the city. The population in the study comprised of adults consuming tobacco of selected communities of Gwalior, M.P. Study sample comprises of 100 adults (50 tobacco smokers and tobacco 50 chewers). In this study purposive sampling has been done to select the sample.

Training undergone by the Investigator. After obtaining the permission from the concerned authority the investigator underwent a short training programme of 20 days at one of the renowned dental hospitals of the city, regarding oral health assessment of adults. Supervised by an Oral and Maxilla- facial surgeon. On completion of the training, a certificate was provided. A structured interview schedule on knowledge on hazards of tobacco consumption on oral health was used to collect the baseline data and the subject's knowledge on hazards of tobacco consumption on oral health. Their oral health status was assessed using mouth mirror, probe and observation checklist. To conduct this study 2 tools were prepared. Tool I - Structured interview schedule to assess the knowledge on hazards of tobacco consumption on oral health. It consisted of 2 parts. Part I - Baseline proforma with 15 items. Nine items related to demographic profile and six items related to baseline characteristics. Part II - Knowledge on hazards of tobacco consumption on oral health. According to the scoring criteria developed every correct answer was given 1 score. Arbitrary classification of knowledge score was developed as follows 16-20 very good, 11-15 good, 6-10 average and below 5 poor.

Tool II - Observation checklist was developed to assess the oral health status of adults consuming tobacco. It was divided into - Part I – Assessment of soft tissue with 6 items. Part II – Assessment of hard tissue with 1 item. The reliability coefficient of interview schedule was computed using split half methodology. The reliability coefficient was 0.78. For Checklist Reliability coefficient 'r' was calculated using Karl Pearson's coefficient. The reliability coefficient was 0.94. Hence both tools were considered to be highly reliable.

## DATA COLLECTION PROCESS

A formal written permission was obtained from Health officer of City Corporation, Gwalior, M.P. Data were collected. An informed consent was taken from the subject willing to participate in the study. Subject was selected by purposive sampling. Subject was identified by house – to – house survey. The subject was first interviewed and their demographic and baseline information were collected. Subject were given clear instruction regarding the structured interview schedule. They took 10-15 minutes to answer the structured interview schedule. The subject was made to sit on a chair comfortably with neck tilted back. They were observed under the natural light. Sets of mouth

mirrors and probes were used along with the oral health assessment observation checklist to assess the oral health status.

The investigator took approximately 5-10 minutes per subject. After each use instruments were sterilised using a sterilizer. According to the availability of the subject the investigator collected the data. The data collected was then compiled for data analysis.

## DATA ANALYSIS

Raw data were coded, entered, and analysed with Statistical Package for Social Sciences (SPSS v.2.0; SPSS Inc., Chicago, IL, USA) 14 using descriptive statistics and inferential statistics such as chi square test, descriptive statistics, mean scores.

## RESULTS

The data in Table 2 show that subject had good knowledge in the area of contents of smoked tobacco (76%), effects of tobacco on oral health due to tobacco consumption (62.4%) and oral hygienic practices (78%). The data presented in Table 3 show that subject gained very good knowledge in the area of contents of smokeless tobacco (96%) and oral hygienic practices (82.6%). The subject had good knowledge in the area of effects of tobacco on oral health due to tobacco consumption (61.3%). The findings revealed that there was no significance difference in knowledge scores between tobacco chewers and smokers ( $t_{98} = 0.7, p > 0.05$ ). There was no significant difference between oral health status of the tobacco smokers and tobacco chewers ( $t_{98} = 1.85, p > 0.05$ ). There was no correlation between knowledge on hazards of tobacco consumption on oral health and oral health status of the smokers. Chi square value showed significant association between occupation of tobacco smokers and oral health status ( $\chi^2_1 = 9.09, p < 0.05$ ).

## DISCUSSION

**Knowledge on hazards of tobacco consumption on oral health:** Majority of the subject (53%) had good knowledge on oral health hazards; 28% of the subject had very good knowledge and 19% had average knowledge. None of the subject had poor knowledge. In the area of content of smoked tobacco, effects of tobacco consumption on oral health and oral hygienic practice the subject (tobacco smokers) had good knowledge (76%, 62.4%, 78% respectively). In the area of content of smokeless tobacco and oral hygienic practices the subject (tobacco chewers) had very good knowledge. (96%, 82.6% respectively) and in the area of effects of tobacco consumption on oral health the subject had good knowledge (61.3%). Tobacco smokers and tobacco chewers both showed significant difference in the area of knowledge on hazards of tobacco consumption on oral health. The findings of the study were consistent with a study conducted in Bhavanagar City, Jaipur. All students (100%) knew that smoking is injurious to health and cancer was caused by tobacco consumption.

Similar findings were found in a study conducted in Vantmuri village among the adults. The study revealed that most of the adults (96%) had knowledge that tobacco is injurious to health; 30% of the adults knew about the tobacco and its by-products and only 22% of the subjects knew about chewing tobacco causes oral cancer. The findings of a study conducted in Gwalior, M.P. revealed that 58% of PUC students and 58% of degree students have a fair knowledge regarding chewing tobacco and its hazards.

**Oral health assessment:** Majority of the subject (43%) had poor oral health status and 43% had average oral health status and only 9% had good oral health status and only 5% had very good oral health status. Data related to the health status of various parts of the oral cavity showed that all subject (100%) had tooth stains. Majority (88%) of the subject had lip discoloration and 8% of the subject had gingival infection and only 10% had least affected floor of the mouth. Similar findings were found in a study conducted in Mumbai, among subjects of SNDT women's university. Ulceration and stomatitis were found in 52.7%.

**Table 1. Distribution of subject according to their baseline characteristics**

Variables	N=100	
	Frequency (f)	Percentage (%)
<b>Forms of tobacco used</b>		
Cigarette	7	7
Non filter cigarette (Beedi)	43	43
Betal leaf with tobacco	26	26
Other specify (Gutkha, Madhu, Mawa)	24	24
<b>Age of initiation of Tobacco consumption (in years)</b>		
Below 20	25	25
21-30	55	55
31-40	20	20
41-50	-	-
More than 50	-	-
<b>Frequency of Tobacco use per week</b>		
Daily	64	64
Occasionally	31	31
Once in 2 days	0	0
Most of the days	5	5
<b>Frequency of tobacco use per day</b>		
1-5 times a day	9	9
6-10 times a day	15	15
More than 10 times	23	23
Continuously	53	53
<b>Motivational factors</b>		
Self Interest	61	61
Influence of others (friends)	27	27
Influence of parents / elders	2	2
Advertisements	10	10
<b>Reasons for tobacco consumption</b>		
To relieve mental tension	9	9
To reduce tiredness	4	4
To gain pleasure	6	7
To spend time	81	81

**Table 2. Area wise mean, percentage, and standard deviation of knowledge score of tobacco smokers**

N=50

AREAS	MAX. SCORE	MEAN	SD	%MEAN SCORE	REMARKS
Content of smoked tobacco					
Effects of tobacco consumption on oral health	1	0.76	5.32	76	Good
Oral hygienic practices	17	10.62	2.95	62.4	Good
	2	1.56	0.24	78	Good

Maximum score = 20

**Table 3. Area wise mean, percentage, and standard deviation of knowledge score of tobacco chewers**

N=50

AREAS	MAX. SCORE	MEAN	SD	%MEAN SCORE	REMARKS
Content of smokeless tobacco					
Effects of tobacco consumption on oral health	1	0.96	1.09	96	Very Good
Oral hygienic practices	16	9.9	2.31	61.3	Good
	3	2.48	0.47	82.6	Very Good

Maximum score = 20

Three subjects had mucosal fibrosis. Poor oral hygiene was found in 55 subjects, increased sensation to hot and cold food was found among 20.53% subjects. Stains on teeth were found in all patients. Plaque and cavities on teeth were found in majority of the subjects. The findings of a study conducted among females of Jawaharlal Institute revealed the similar findings.

Results showed prevalence of dental caries was 40.5%; missing teeth due to caries was 13.2%. The average DMFT was 3. The prevalence of periodontal diseases was 0.8%, 20.1%, 20.6% and 25.6% for bleeding, calculus, shallow and deep pockets respectively. Another study conducted in Kishore Ghanj revealed similar findings of oral manifestations. The common manifestations were abrasions in the teeth, black stains, tobacco mucositis, nicotine stomatitis and leukoplakia.

**Comparison between oral health status and knowledge on hazards of tobacco consumption on oral health:** There was no significant difference between knowledge on hazards of tobacco consumption on oral health of tobacco smokers and tobacco chewers. ( $t_{(98)} = 0.7$ ,  $p = >0.05$ ). Tobacco smokers and tobacco chewers were equally knowledgeable on hazards of tobacco consumption on oral health. There was no significant difference between oral health status of tobacco smokers and tobacco chewers ( $t_{(98)} = 1.85$ ,  $p = > 0.05$ ). Tobacco smokers and tobacco chewers oral health status was the same.

**Correlation between knowledge on hazards of tobacco consumption on oral health and oral health status:** The calculated r-value was less than the table value, hence there was no association found between knowledge on hazards of tobacco smoking on oral health and oral health status of tobacco smokers ( $r = 0.015$ ,  $p =$

>0.05). The calculated r value was more than the table value, hence there was association found between knowledge on hazards of tobacco chewing on oral health and oral health status of tobacco chewers ( $r = 0.271$ ,  $p = <0.05$ ).

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