



“A COMPARABLE STUDY ON ORAL HEALTH STATUS AND KNOWLEDGE ON ORAL HEALTH HAZARDS AMONG ADULTS CONSUMING TOBACCO OF SELECTED COMMUNITIES OF GWALIOR CITY”

**Ritu Tobit Associate Professor,
Sardar Patel College of Nursing, Lucknow. India.**

Abstract

Tobacco use is generally perceived as an adult problem. The diseases widely caused by tobacco are mostly seen to afflict the older population, yet tobacco use most often starts in youth, vast majority start consuming tobacco before the age of 25 years. Tobacco use has injurious effects on oral health. The oral health is an important aspect of community health. To plan important interventions it is necessary to find out the prevalence and factors associated with them. This study is aimed at assessing the knowledge of adults on hazards of tobacco consumption on oral health and to assess their oral health status. Objectives of the study were to assess the oral health status of adults consuming tobacco using observational check list., to determine the knowledge on hazards of tobacco consumption on oral health and to find an association between oral health status and knowledge on hazards of tobacco consumption on oralhealth.

Keywords: Adults, Tobacco smokers, Tobacco chewers, Knowledge on hazards of tobacco consumption on oral health; Oral health status.

1. INTRODUCTION

Tobacco has been introduced into India since ages. Use of tobacco has been changed from the traditional cigarette to the most recent gutkha and mawa. Even though government has passed laws for control of tobacco and has made notifications because of the addiction of nicotine it has become part of the adult (male and female) and children's life. The present generation especially high school and the further years of life get addicted to tobacco. A survey conducted during January-March 2001 in Gwalior. M. P. among 13 - 15 year old students showed that the current smokeless tobacco (Boys 35.5-49.5%, Girls 27.2-36.4%) and gutka (Boys 8.4-22.2 %,Girls 14.2- 22.2%) use and exposure to gutkha advertisement were reported equally for boys and girls.

The easy availability and cheap cost has made one to be addicted. This addiction has bad impact on the oral health status there by both to the respiratory system, cardiovascular system and the gastrointestinal system. A study conducted among smokers showed prevalence of bleeding gums (85.1%), 100% showed calculus, 82.3% had shallow and deep periodontal pockets and 79.4% showed loss of tooth attachment.

The investigator observed that tobacco smoking and tobacco chewing habits developed gradually from the very early age of 15 years with increasing frequency in the later years. The frequency of smoking increased beginning with 1per day gradually to 5-6 packets per day and chewing tobacco for about 10-12 times per day. The adults had stained teeth, dental caries, halitosis, lip discoloration and many had complaints of mucosal ulceration and gingival changes. Thus the investigator with self interest, experience, interview with adults and her own observations is motivated to assess the oral health status and identify their knowledge on hazards of tobacco consumption on oral health. Identification of knowledge on hazards of tobacco consumption on oral health and assessment of oral health status among tobacco consuming adults will help at primary, secondary or tertiary level prevention, reduction or weaning depending upon their needs and requirements.

Globally, cigarette smoking is the dominant form of tobacco use. In Indian context, the tobacco use implies the use of tobacco in any form of chewing or smoking. Smoking and chewing habits however differ a great deal in different parts of India. Different types of smoking habits such as beedi and cigarette & chewing habits such as khaini, mawa and betel quid differ even more in different parts of the country. In general, men smoke as well as chew tobacco whereas women generally chew tobacco with exception of few areas where prevalence of smoking among women is high. In coastal areas of Andhra Pradesh and Orissa, women smoke cheroot (called chutta) in a reverse manner (i.e. with glowing end inside the mouth) and in some northern parts of India, women often smoke hukkah or hubble- bubble. Among men, cigarette smoking is largely confined to urban areas whereas in rural areas men mostly smoke beedi.

A descriptive correlative approach was used for this study. The study was carried out in Gwalior City. Research design was correlative design. The sample comprised of 100 adults consuming tobacco (50 tobacco smokers and 50 tobacco chewers). Sample was selected using purposive sampling technique. Formal written permission was obtained to conduct the study and informed consent was obtained from the adults prior to data collection process. Using a structured interview schedule and observation checklist data was collected. Data were analysed using descriptive and inferential statistics (unpaired t-test and chi-square test).

The results of this study showed that there was no significant difference between the knowledge score of tobacco smokers and tobacco chewers ($t_{98} = 0.7, p > 0.05$). 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 ($r = 0.0015, p > 0.05$). There was no correlation between knowledge on hazards of tobacco consumption on oral health and oral health status of the chewers ($r = 0.271, p > 0.05$). The computed chi square value showed significant association between occupation of tobacco smokers and oral health status ($\chi^2_{21} = 9.09, p < 0.05$). The statistical significance was at 0.05 level.

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. The findings of the study support the need for conducting educational programme to increase the knowledge of adults on tobacco consumption and its related problems. Educating the youth and adults and providing them with correct information can help them to avoid bad habits and develop as healthy citizens.

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 methods 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. Extraordinary high use of tobacco products has devastating impact on the health of people. 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 getenslaved.

2. RESEARCH METHODOLOGY:

Research methodology is a way to systematically solve the research problem. It deals with defining the problem, formulation of hypothesis, methods adopted for data collection and statistical techniques used for analyzing the data with logical reason behind it. The study was conducted with the purpose of assessing the knowledge of tobacco consuming adults on oral health hazards and assessing their oral health status in selected communities.

2.1 Population and Sample –

The target population was adults consuming tobacco either in the form of tobacco chewing or tobacco smoking only. In the study sample comprises of 100 adults (50 tobacco smokers and tobacco 50 chewers) who fulfilled the sampling criteria.

2.2 Data and the Source of Data -

A formal written permission was obtained from Health officer of Gwalior City. Data were collected. The investigator familiarized himself with the subject and explained the purpose of the study, method of data collection, the use of mouth mirror and probe for oral health assessment and the time duration. He requested the participants for their full co- operation and assured about the confidentiality of their response. An informed consent was taken from the subject willing to participate in the study. Subjects were selected by purposive sampling. Subjects were identified by house – to – house survey. The subjects were first interviewed and their demographic and baseline information was collected. There after their knowledge on hazards of tobacco consumption on oral health was obtained using the structured interview schedule. Subjects were given clear instruction regarding the structured interview schedule. They took 10-15 minutes to answer the structured interview schedule.

The subjects were 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 sterilized

using a sterilizer. According to the availability of the subject the investigator collected the data. The data collected was then compiled for data analysis.

2.3 Theoretical Framework –

In the present study dependent variables refers to oral health status of tobacco consuming adults and independent variable was the knowledge on hazards of tobacco consumption on oral health among tobacco consuming adults. Extraneous Variable of this study referred to age, sex, religion, educational status,

occupation, income, type of family, marital status, dietary habits and forms of tobacco frequency of consumption, motivational factor, and reason for consuming tobacco.

2.4 Descriptive and inferential statistics

Description and inferential statistics was used for the data analysis.

3. RESULT AND DISCUSSION :

Section I: Description of demographic and baseline characteristics

Table 1: Distribution of subject according to their demographic characteristics

N = 100

Variables	Frequency(f)	Percentage %
Age (in years)	14	14
21-30	26	26
31-40	27	27
41-50	33	33
About 50Sex Male Female		
Religion Hindu Muslim		
Christian	75	75
Any other Education status	25	25
Illiterate		
Primary Secondary Graduation	86	86
Professional Occupation	10	10
Unskilled Skilled Unemployed	4	4
ProfessionalStudent	-	-
	29	29
	48	48
	28	28
	0	0
	2	2
	42	42
	27	27
	30	30
	1	1
	-	-

Income of the family (in rupees)	9	9
below 2000	5	5
2001-3000	35	35
3001-4000	41	41
Above 40001		
Type of family		
Nuclear	87	87
Joint Marital Status	13	13
Single Married		
Separated / Divorced/ /Widowed	7	7
Dietary habits		
Vegetarian	76	76
Mixed Diet	17	17
	7	7
	93	93

Type of family		
Nuclear	87	87
Joint	13	13
Marital Status		
Single	7	7
Married	76	76
Separated / Divorced/ /Widowed	17	17
Dietary habits		
Vegetarian	7	7
Mixed Diet	93	93

Data presented in Table 1 show the following:

Most of the subject (33%) belonged to above 50 years of age group.. Only 14% belonged to 21 –30 years of age group.

Majority of the subject (75 %) were males and only 25% were females.

Majority of the subject (86%) belonged to Hindu religion. The remaining subject were Muslims (10%). Only 4% were Sikhs.

Most of the subject (48%) had primary education. The remaining 29% were illiterate and only 2% were professionals. None of the adults were graduates.

Forty two percent were unskilled, 27 % were skilled, 30% were unemployed and only 1% were professional.

Most of the subject (41%) belonged to the income range of above rupees 4001. Only 5% belonged to rupees 2001 – 3000 income groups.

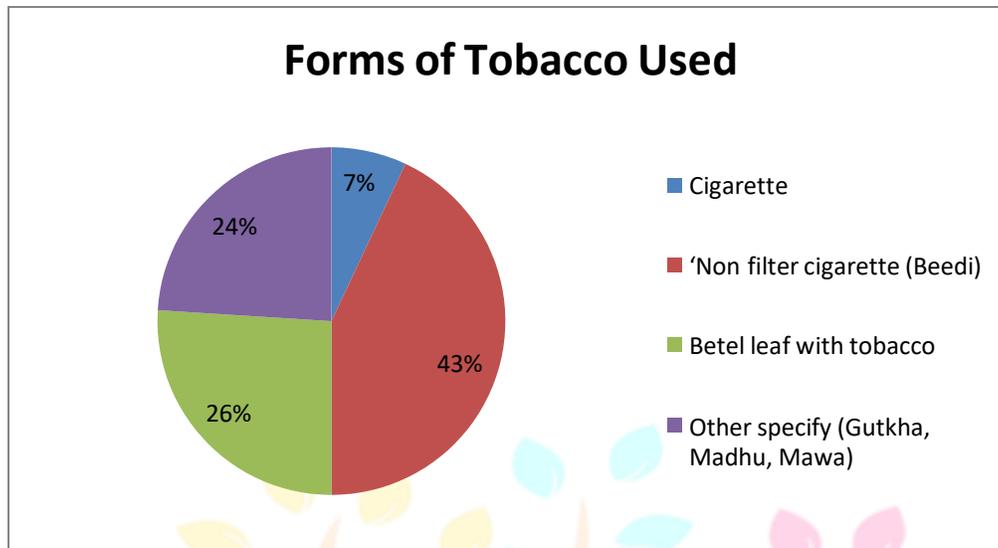
Majority of the subject (87%) belonged to nuclear family and 13% belonged to joint family.

Majority of the subject (76%) were married; 17 % were widowed and 7% were single. Majority of the subject (93%) consumed mixed diet and only 7% were vegetarian.

Table 2:- Distribution of subject according to their baseline characteristics

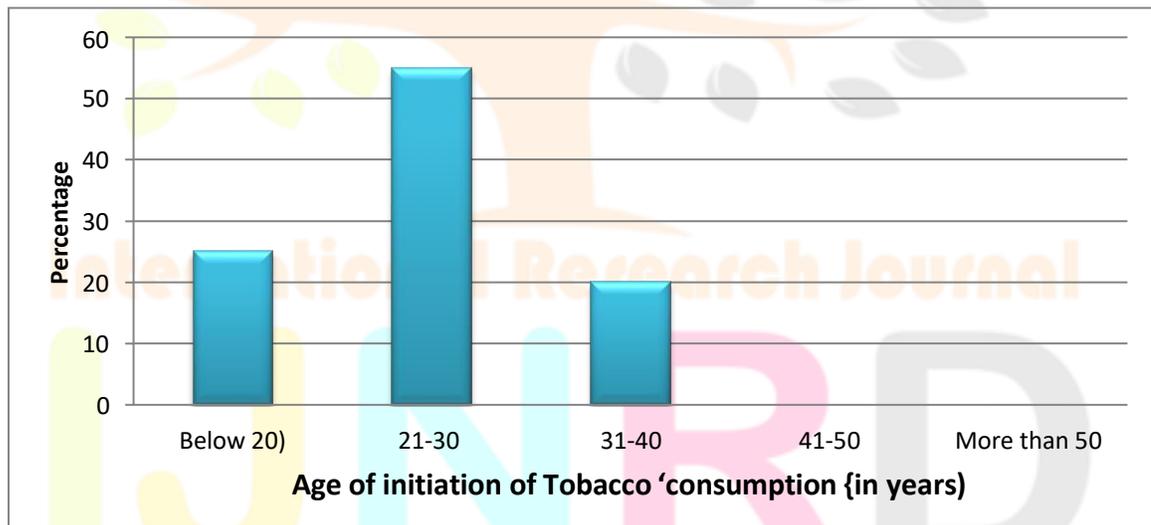
Variables	Frequency	Percentage
Forms of tobacco used		
Cigarette	7	7
'Non filter cigarette (Beedi)	43	43
Betel leaf with tobacco	26	26
Other specify (Gutkha, Madhu, Mawa }	24	24
Age of initiation of Tobacco 'consumption {in years)		
Below 20)		
21-30	25	25
31-40	55	55
41-50	20	20
More than.50		
Frequency at Tobacco use per week, Daily :		
Occasionally Once in 2 days	64	64
Most of the days	31	31
Frequency of tobacco use per day		
1-3 times a day	5	5
6-10 times a day	9	9
More than 10 times		
Continuously		
Motivational factors		
Self Interest	15	15
influence of others (friends)	23	23
influence Of parents / elders	53	53
'Advertisements		
Reasons for tobacco consumption	61	61
To relive mental tension	27	27
To reduce tiredness	2	2
To gain Pleasure	10	10
To Spend time	9	9
	4	4
	16	16
	81	81

a. Figure : Pie Diagram showing the forms of tobacco used –



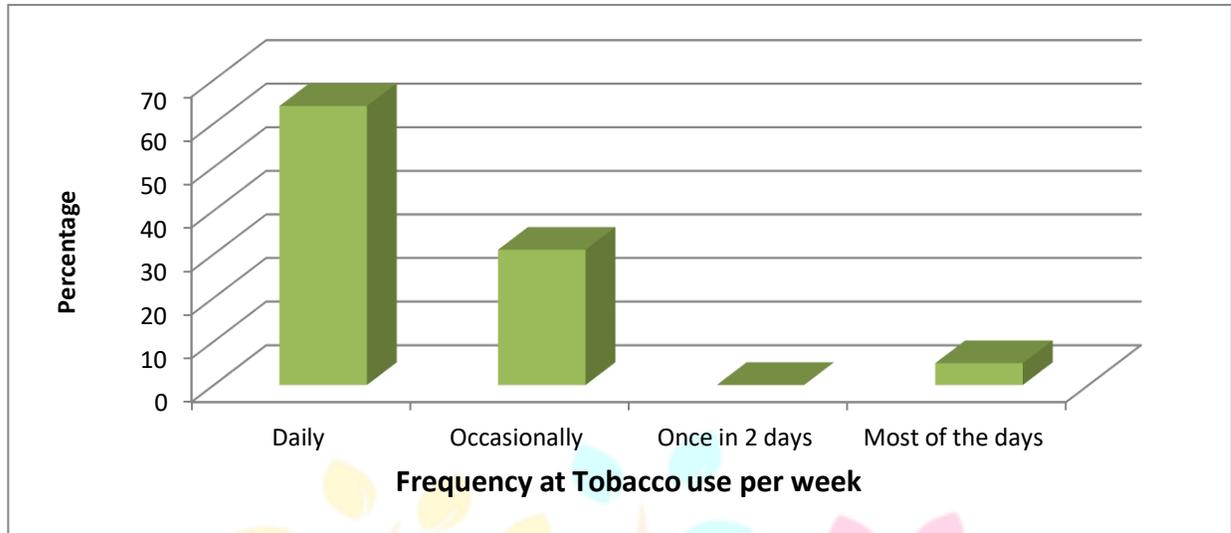
The data presented in Table 2 and Figure 3 show that majority of the subject 43% smoked beedi; and 24% chewed gutkha ha varieties.

b. Figure : Bar Diagram showing age at which tobacco consumption was initiated –



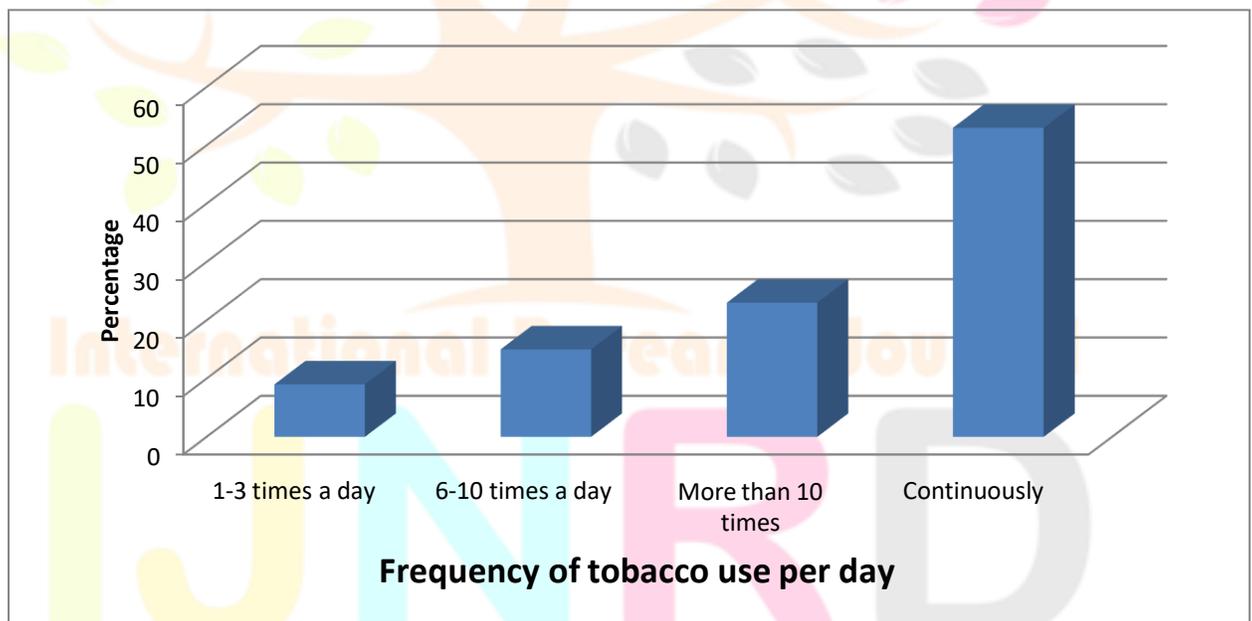
The data presented in Table 2 and Figure 4 show that majority of the subject (55%) man tobacco consumption at the age of 21 - 30 years and 25% started tobacco consumption below 20 years.

c. Figure : Bar diagram showing the frequency of tobacco use per week -



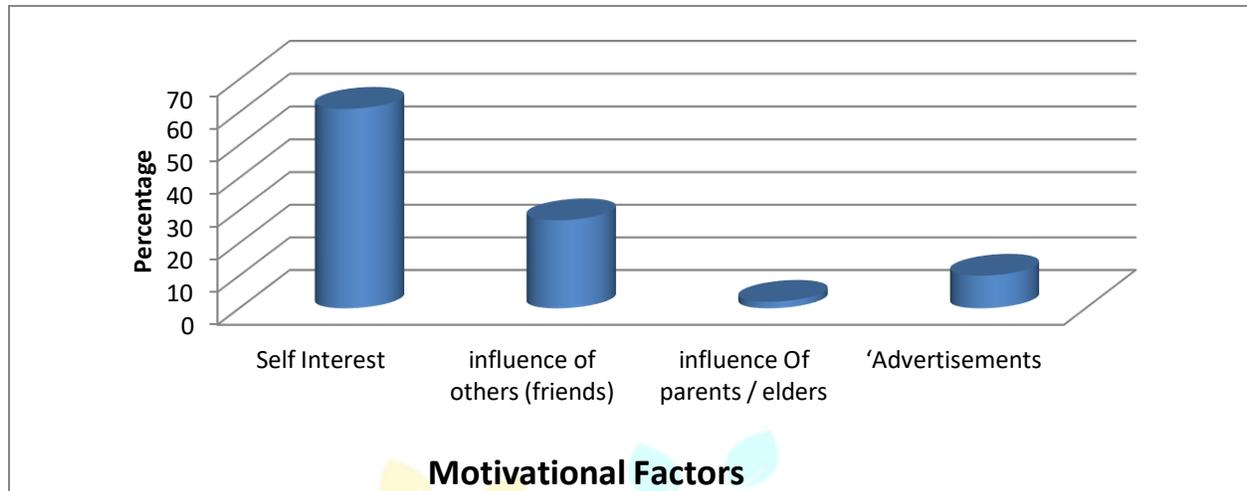
It show that majority of subject (64%) consumed tobacco daily. The remaining 31% consumed occasionally.

d. Figure : Diagram showing frequency of tobacco use per day –



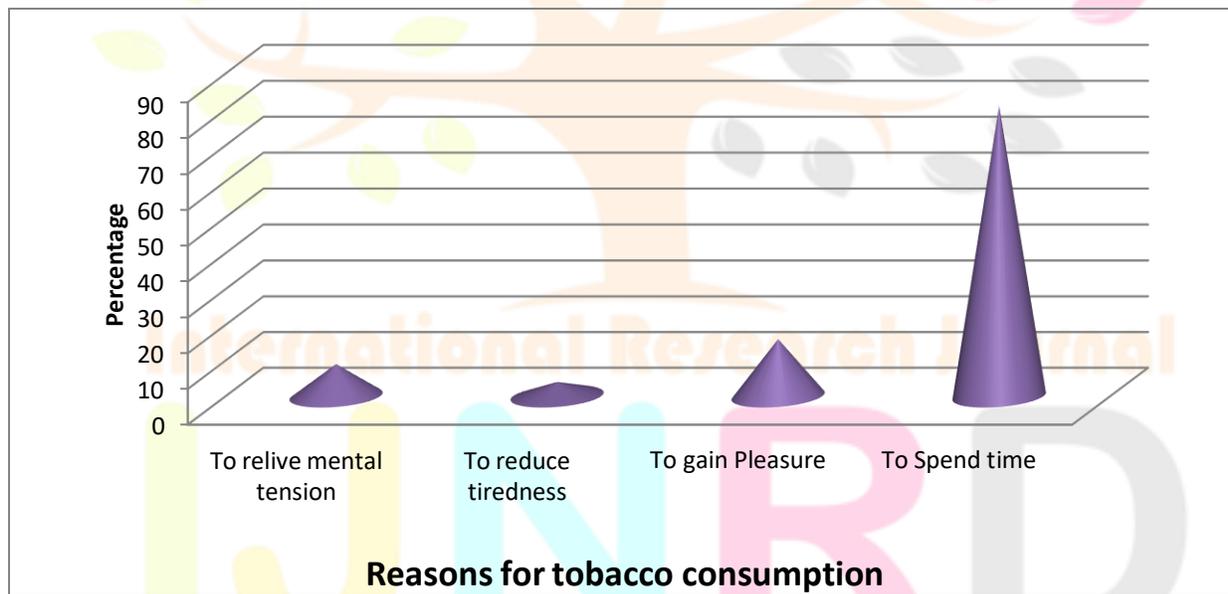
This data presented in to show that majority of the subject (53%) consumed tobaccocontinuously.

e. Figure: Cylinder diagram showing the motivating factor for tobacco consumption.



Depict that majority of the subject (61%) started tobacco resumption on self-interest. Only 2% of subject started tobacco consumption due to Parental influence.

f. Figure: Pyramid diagram showing the reasons for tobacco consumption –



The data presented to show that 4% of subjects consume tobacco to reduce tiredness and majority of subject (81%) consume tobacco to spend time.

Section II: Knowledge of subject on hazards of tobacco consumption on oral health.

It deals with analysis of knowledge score and comparison of knowledge score area wise.

Table 3: Distribution of subject according to their knowledge score.**N= 100**

KNOWLEDGE SCORE	INFERENCE	TOBACCO SCORE SMOKERS (%)	TOBACCO CHEWERS (%)	TOTAL (%)
16-20	Very good	13	15	28
11-15	Good Average	25	18	53
6-10	Poor	12	7	19
<5		0	0	0

Maximum score = 20

The data presented in the Table 3 show that most of the subject (53%) had good knowledge, scored within the range of 11 – 15.

A very few subject (19%) had average knowledge, scored in the range of 6 – 10. Nearly 28% of the subject had very good knowledge, scored in the range of 16 – 20. None of the subject had poor knowledge (score below 5).

Table 4: Area wise mean, percentage, and standard deviation of knowledge score of tobacco smokers**N=50**

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

Maximum score = 20

Table 5: The data shows 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%).

Area wise mean, percentage, and standard deviation of knowledge score tobacco chewers.**N=50**

AREAS	MAX SCORE	MEAN	SD	%MEAN SCORE	REMARKS
content of smokeless tobacco	1	0.96	1.09	96	Very Good
Effect of tobacco consumption on oral Health	16	9.9	2.31	61.3	Good
Oral hygienic practices	13	2.78	0.47	82.2	Very Good

The data presented to 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%).

Table 6: Area wise comparison of knowledge score of tobacco smokers using Friedmann's test.**N=50**

AREAS REMARKS	MEAN	SD	%MEAN SCORE	Value
content of smokeless tobacco	0.76	5.32	76	85.24
Effect of tobacco consumption on oral Health	10.62	2.95	62.4	
Oral hygienic practices	1.56	0.24	78	

$$\chi^2_{(2)} = 5.99, p < 0.05$$

The data presented in Table 6 show that there is significant difference in the knowledge score of tobacco smokers in different areas since the calculate $\chi^2_{(2)}$ value is greater than the table value $\chi^2_{(2)} = 85.24, p < 0.05$.

Table 7: Area wise comparison of knowledge score of tobacco chewers using Friedmann's test.
N=50

AREAS	MEAN	SD	%MEAN SCORE	Value
content of smoke tobacco	0.96	1.09	96	42.10*
Effect of tobacco consumption on oral Health	9.9	2.31	61.3	
Oral hygienic practices	2.48	0.47	82.6	

$\chi^2(2) = 5.99, p < 0.05$ * = Significant

The data presented in Table 7 show that there is significant difference in the knowledge score of tobacco chewers in different areas since the calculated χ^2 value is greater than the table value ($\chi^2(2) = 42.10, p < 0.05$).

Section III: Oral health status of tobacco consuming adults

This section deals with analysis of health status of various parts of oral cavity.

Table 8: Frequency and percentage distribution of score of oral health status among the subject
N=100

ORAL HEALTH STATUS	INFERENCE	TOBACCO SMOKERS	TOBACCO CHEWERS	TOTAL (%)
0-7	Good	2	7	9
8-14	Average	28	15	43
15-21	Poor	18	25	43
22-28	Very Poor	2	3	5

Maximum score = 28

'The data presented in the Table 8 show that most of the subject (43%) had average oral health status. Only 9% of subject had good oral health status. The remaining 5% of subject had poor oral health status.

Table 9: Distribution of the subject according to the health status of various parts of theoral cavity.
N=100

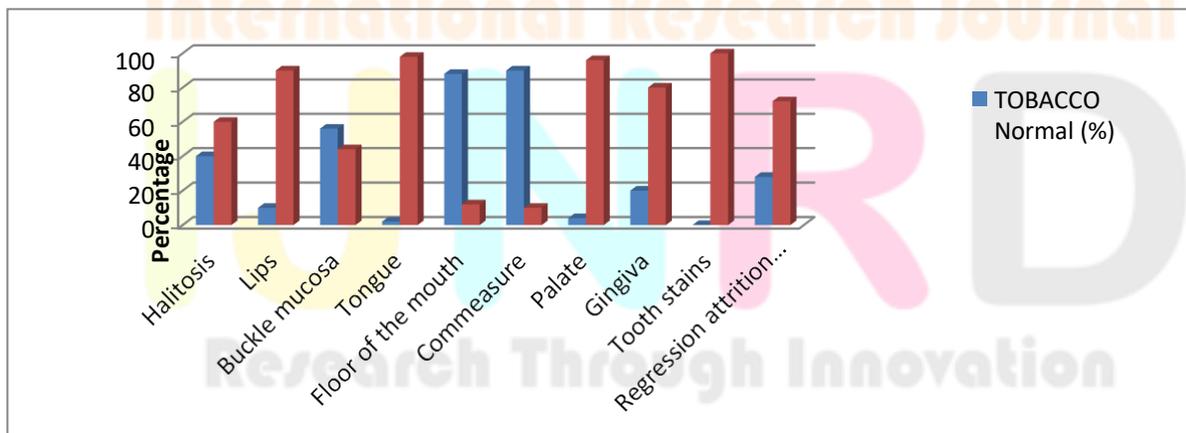
HEALTH STATUS OF VARIOUS PARTS OF ORAL CAVITY	TOBACCO (%)	SMOKERS (%)	TOBACCO (%)	CHEWERS (%)
Halitosis	40	60	28	72
Buckle mucosa	10	90	14	86
Tongue	56	44	58	42
Floor of the mouth	2	98	58	42
Commeasure Palate	88	12	92	8
Gingiva Tooth stains	90	10	66	34
Regression of teeth	4	96	40	60
Ettrition of teeth	20	80	18	82
	D 28	100	0	100
		72	32	68

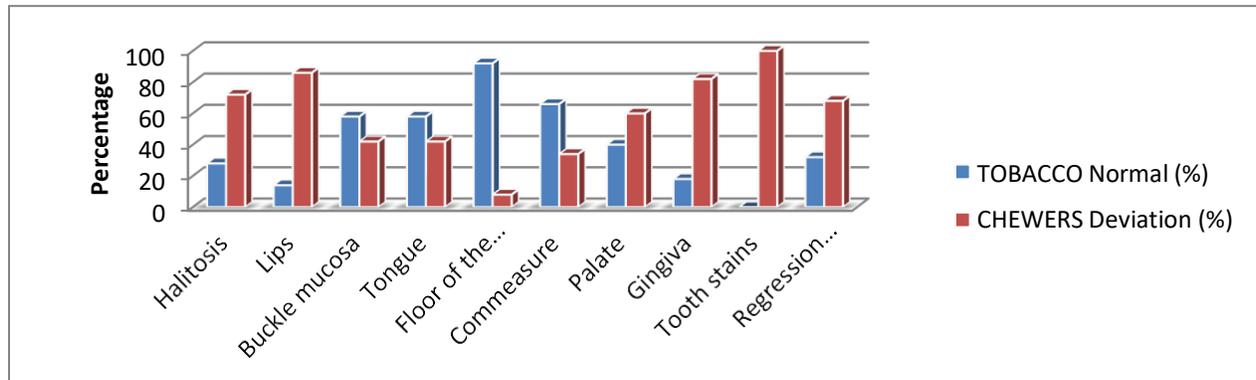
The data and the figure (g & h) presented in-Table 9 shows that 100% of subject had tooth stains.

Among the tobacco smokers 084% had affected on tongue;. The floor of the mouth and Commissar were least affected nearly 12% and 10% respectively. Nearly 60% of ablest had hepatics.

Among the tobacco chewers 100% of the subject had tooth stains: 86% had Pigmented lips; 82% had gingival infection; 7226 bad halitosis and 60% had affected Palate Nearly 42% of subject had affected buckle mucosa.

g. Figure: Bar Diagram showing the health status of various parts of oral cavity of tobacco smokers.



h. Figure: Bar Diagram showing the health status of various parts of oral cavity oftobacco Chewers.**Section IV:****A) Comparison between oral health status and knowledge on hazards of tobacco consumption on oral health among the subject.**

Section IV describes the un-paired 't' test, correlation test and chi square computation to find out an association between knowledge on hazards of tobacco consumption on oral health and oral health status and comparison between knowledge of tobacco smokers and tobacco chewers; comparison of oral health status of tobacco smokers and tobacco chewers and association between oral health status and selected personal characteristics.

There is no significant difference between knowledge score of tobacco smokers and tobaccochewers.

Table 10: Comparison between the knowledge score of tobacco smokers and tobaccochewers.

N=100

VARIABLE	MEAN	SD	VALUE	INFERENCE
Knowledge	12.92	3.39		Non Significant
Oral Health Status	13.46	4.01	0.015	

Critical value of r at 49 df at 5% level = 0.273

The coefficient of correction test show that there was no relationship between tobacco smoking on oral health and oral health status of tobacco smokers since the calculated value 0.015, $p > 0.05$, was less than the table value hence the hypothesis was accepted.

There is no significant relationship between the oral health status and knowledge on hazards of tobacco chewing on oral health among tobacco chewers.

Table : 13 coefficient of correction between knowledge on hazard of tobacco chewing on oral health and oral health status of tobacco chewers.

N=50

Variable	Mean	Sd	Value	Inference
Knowledge	13.34	2.49	0.271	Significant
OHS	12.12	5.03		

Critical value of r at 49 df at 5% level =0.273

The coefficient of correction test show that there was no relationship between knowledge on hazard of tobacco chewing on oral health and oral health status of tobacco chewers since the calculated r value 0.271, $p < 0.05$ was more than the table value hence the research hypothesis was accepted .

Association between selected personal characteristics of the subjects and oral health status.

There is no significant association between the oral health status and selected baseline characteristics such as age occupation and duration of consumption of tobacco.

Table 14 Chi square value computed between selected baseline characteristics and oral health status of tobacco smokers.

Selected Personal Characteristics	Score of Oral Mean	Health Status Mean	Value	Df
Age (in Years)				
21-40	16	4	24.916	1
41-60	2	28		
Occupation				
Unskilled Skilled	5	1	23	
Duration of Smoking	13	9	9.09	1
Below 20 years 21-40years	5	9		
	13	23	0.006	1

Significant Age

There was significant association between age of tobacco smokers and oral health since the calculated $\chi^2 = 24.916, p < 0.05$

Occupation

There was significant association between occupation of tobacco smokers and oral health status since the calculated χ^2 value was more than the table value

($x^2=9.09, <0.05$)

No significant association was found between duration of tobacco smokers consumption and oral health status of tobacco smokers since the calculated x^2 value is less than the table value ($x^2=0.006, p<0.05$).

There is no significant association between the oral health status and selected baseline characteristics such as age occupation and duration of consumption of tobacco chewers.

Table No 14: Chi square value computed between selected baseline characteristics and oral health status of tobacco chewers .

N=50

Selected Personal Characteristics	Score of Oral Mean	Health Status Mean	Value	Df
Age (in Years)				
21-40	17	2	28.01	1
41-60	3	28		
Sex				
Male				
Female	12	13		
Occupation	8	17	1.33	1
Unskilled				
Skilled				
Duration of Smoking	15	13		
Below 20years	5	17	3.46	1
21-40years	9	8		
	11	22	1.79	1

Age

There was significant association found between age of tobacco chewers and their oral health status since the calculated x^2 value was more than the table value ($x^2=28.01, p<0.05$)

Sex

There was no significant association between sex of the tobacco chewers and oral health status since the calculated x^2 value less than the table value ($x^2=1.33, p >0.05$).

Occupation

There was no significant association between occupation of the tobacco chewers and oral health status since the calculated x^2 value less than the table value ($x^2=3.46, p >0.05$).

Duration of consumption

There was no significant association between duration of consumption of the tobacco chewers and oral health status since the calculated x^2 value less than the table value ($x^2=3.1, p >0.05$).

REFERENCES:

1. Gupta V M, Sen P. Tobacco: The addictive slow poison. Indian Journal of Public Health 2001 July-September, 45 (3): 75-87. 2. Arora M, Reddy K S. Global youth tobacco survey - Delhi. Indian Journal of Pediatrics 2012 August; 42: 850-851.
2. Sarma P V R, Dhand A, Malhotra A. et al. Pattern of tobacco smoking in North.
3. Chaturvedi H K, Phukan R K, Zoramtharga K. Hazarika N C, Mahanta J. Tobacco use in Mizoram, India: Socio-demographic differences in pattern, South East Asian Journal of Tropical Medical Public Health 1998; 29 (1):66-70,
4. Singh S. Patterns of tobacco use and precancerous lesions among smokeless tobacco users in an urban slum community Mumbai. MD Desertation. University of Mumbai. 1998.
5. Indian adults. Indian Journal of Chest Diseases and Allopathic Sciences 1990, 32 (2): 83-93.
6. Prabhu S R, Wilson D F, Daftary D K, Johnson N W. Oral diseases in Tropics. Delhi Oxford University press, 1993.
7. Fakhfakh R, Hsari M, Maalej M, Achour N, Nacef T. Tobacco use in Tunisia: behaviour and awareness. Bulletin of WHO 2002; 80(5): 350-355.
8. Sinha D N. Gutkha advertisement and smokeless tobacco use by adolescent in Sikkim. Indian Journal of Community Medicine 2012 January-March: 30 (1): 18-19.
9. Sood M. A study of epidemiological factors influencing periodontal diseases in selected areas of District Ludhiana, Punjab. Indian Journal of Community Medicine 2005 April-June; 30 (2); 70-71.
10. Polit D F, Hungler B P. Nursing Research; Principles and Methods. Philadelphia: JB Lippincot company; 1999.
11. Abdallah F G, Levine E. Better patient care through Nursing Research. New York: Mac Millan Publishing company; 1986.
12. Pandey M R, Venkatramaiah S R, Neupane R P, Gautham A. Epidemiological study of tobacco smoking behaviour among young people in a rural community of the hill region of Nepal with special reference to attitude and beliefs. Indian Journal of Community Medicine 1987; 9 (2); 110-120.
13. Potter P A, Perry A G. Basic Nursing -Essentials for Practice. 5th ed. Noida: Mosby; 2003.
14. Sinha D N, Gupta P C, Pednekar M S. Tobacco use in rural area of Bihar, India. Indian Journal of Community Medicine 2003 October - December; 28(4) :167-170.
15. Guggenheimer J, Zullo G T. et. al. Changing trends of tobacco use in a teenage population in Western Pennsylvania. American Journal of Public Health 1986. February; 78(2): 196-197.