ASSSSEMENT OF THE IMPACT OF CHAT CHEWING HABIT ON THE PERIODONTAL TISSUE STATUS AMONG MEDICAL OUT PATIENT AT HARAR JEGOL HOSPITAL

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JIMMA, ETHIOPIA

ASSESSMENT OF THE IMPACT OF CHAT CHEWING HABIT ON THE PERIODONTAL TISSUE STATUS AMONG MEDICAL OUT PATIENTS AT HARAR JEGOL HOSPITAL.

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Abstract

Background:- Catha adulis is a flowering plant native to the horn of Africa and the Arabian peninsula. Khat's exact place of origin is uncertain but believed it was first grown in Ethiopia, particularly Eastern city of Harar from which it was later introduced to Yemen in the 15th century. In the oral cavity it has different effect as a result of chewing for long time such as temperomandibular Joint problem, gingival recession, clinical attachment loss, and oral cancers and gingival allergic reactions.

Objectives:- To assess the impact of Chat chewing habit on periodontal status among out patients of medical OPD at HJH.

Methods:- Cross sectional study was conducted in HJH by convenient sampling technique on 72 chat chewer medical out patients out of which 40 were males and 32 were females.using strucured questionnaire and physical examination on a sample of out patients.

The data were systematically analyzed, interpreted and presented in the form of tables.

Result and Discussion:- Tooth discoloration was the main complaint of chat chewer patient and some have gingival bleeding and bad breath. There is significant statistical association between duration of chat chewing and periodontal variables with p-value of 0.000. But there is no statistical association between gender and oral cavity change, age, religion, ethnic group, method of tooth cleaning, with p-value of 0.124, 0.33, 0.718, 0.754, 0.61 respectively.

Conclusion and Recommendation:- The periodontal tissue of chat chewer patients have defects like gingival recession, clinical attachment loss, calculus deposition and bleeding of the gum, as well as oro-dental problem. Therefore it is strongly recommended that the concerned body should create awareness in the community about the impact of chat on periodontium and the oral cavity as a whole.

Key terms:- Chat, Chata adulis, periodontium.

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Abbreviations and Acronyms

BOP:- Bleeding On Probing

CAL:- Community Attachment Loss

CBE:- Community Based Education

CNS:- Central Nervous System

CPI :- Community periodontal Index

CPITN; Community periodontal index treatment needs

GR;- Gingival Recession

HJH:- Harar Jegol Hospital

OPD:- Out Patient Department

OSCC:- Oral Squamous Cell Carcinoma

TM:- Tooth Mobility

TMJ: Temperomandibular joint

UNESCO:- United Nation Educational Science and Cultural Organization.

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CHAPTER ONE

INTRODUCTION

1.1 Background

The chat plant (Catha Adulis Forssk) is a tree of the family celestracaea that is widely cultivated in certain areas of east Africa and Arabian Peninsula. The leaves of chat plant contain alkaloids structurally related to amphetamine and they are currently chewed daily by a high proportion of the adult population in Yemen for the resulting pleasant mild stimulant action. (21)

The fresh chat leaves contains alkaloid such as cathinone and Cathine, the former being structurally related and pharmacologically similar to amphetamine. Chat leaves also contain considerable amount of tannins (7-14% in dried materials), vitamins minerals and flavonoids. Cathinone is believed to be the main active ingredient in fresh chat leaves. (17, 18)

The pleasurable central stimulating effects of chat are commonly believed to improve work capacity and are used on Journeys and by students preparing for examination and to counteract fatigue. In recent years as a result of air transport, the consumption of fresh chat leaves has expanded considerably and it is readily and legally available in UK. (17)

The plant is known by different names in different areas of the world accordingly they call chat in Ethiopia, Qat in Yemen, Mirre in Kenya, Qoat in Somalia. Most literature call by the name chats. Moringu is a dried leaves of chat and it is known as Abyssinian tea. (21)

The plant grows and can reach the height of 10-20 foot. The fresh leaves are crimsons brown and leathery, as they age they also emit strong smell. The most favored part of the leaves is the young shoots near the tip of the plant. However, leaves and stems at the middle and lower section are also used. (22)

Chat chewing is a predominantly male habit but women's also practice it. These users report that chat gives a sense of happiness, increased energy and staying alert, improving communication ability, thinking and capacity to associate Ideas. (19)

Epidemiological investigation on possible association between chat and periodontal disease report contrasting result. Some concluded chat chewers had more attachment loss than non chewers. The effect of chat on oral mucosa include frictional keratosis, possible malignancy, gingival recession but lower incidence of caries reported from some researchers. Chat leaves are placed in the mouth in the lower distal mucobuccal fold while chewing creating a noticeable pouch and the duration of clewing may last up to several hours. Low rate of caries had been observed among chat chewers. Mouth dryness following chat chewing might be due to sympathomimetic effect of cathinone and or to excess secretion of saliva during chewing. (20)

As a general chat chewing habit causes many lesions to supporting structures of the teeth, namely gingivitis, periodontal pocket formation, gingival recession, tooth mobility and tooth mortality. It also causes clicking and pain in TMJ and led to attrition and staining of the teeth and cervical caries particularly among crystallized sugar consumers. (3, 5, 7)

Enlargement of salivary gland, inflammation and folding of the parotid papilla at the site of chat chewing with obvious facial asymmetry can result from chat chewing habit. (3, 5, 7)

1.2 Statement of the Problem

In our country Chat is chewed for its social reaction. But occupational groups and students Chew Chat to keep awake and get mental alertness. (4)

Chat leaves are chewed during socio cultural gatherings and have got an extreme sociologic nature (individual feelings of sociability and social gathering). It causes different influence on both physical and mental health of human being. (11)

In a house-to-house survey held in 1997, 200 adults from a rural Ethiopian community were interviewed. The prevalence of Chat use was 32% and significant associations of Chat use were found with physical illness, injuries, under nutrition and mental distress. Mental distress was higher among frequent and daily users and among those who chewed chat for more than two years. In addition steep disturbances were significantly, higher among them. (12)

In recent studies it was found that chat chewing causes loss of periodontal attachment present either as increased pocket depth or gingival recession. It also increases the risk factors for periodontal disease and causes temporomandibular joint click and xerostomia. (3)

Studies show that there is strong relationship between Chat chewing and oral cancers. Most OSCC of studied patient was located on the buccal mucosa and lateral side of the tongue. Even though there is no significant relationship between chat chewing and oral leukoplakia, recently oral keratocytic lesion (Precancerous) and plasma gingivitis (allergic reaction to chat) can be seen. (13)

As a consequence of its mode of consumption Chat affects the oral cavity and the digestive tract. A high frequency of gastritis, periodontal disease and chronic recurrent subluxation and dislocation of the temperomandibular joint has been suggested. (14, 15, 16)

Another study found no significant difference in oral hygiene between Chat chewers and non Chewers. Chat itself is considered non cryogenic, but the consumption of soft drinks and the use of sugar to counteract the bitter taste of chat leads to high caries activity among chat chewers.(17)

CHAPTER TWO

2.1. Literature Review

The habit of chewing chat leaves dramatically increasing in the world but most commonly chewed in the south west part of Arabian Peninsula and east African countries like Ethiopia, Djibouti, Kenya, Somalia, Tanzania and Uganda. (21)

The study that was conducted in yemen found the result that oral hygience of non chewers significantly better than that of chewers. The incidence of gingival bleeding was significantly higher in chat chewers. About 23% of chewers complained difficulty in mouth opening as compared to 1% of non-chat hewers. A small percentage has also difficulty in swallowing hard food, burning sensation in soft tissue, ulcers in oral mucosa and gingival recession was found in higher proportion of chat chewers (1).

From august to September 1991, the periodontal status of 1001 Yemenites representing age group 12-14, 15-19,20-24 & 35-44 years was recorded and evaluated with performance of CPITN the calculus index and clinical attachment level the impact of chewing chat, the leaves of cultivated alkaloid shrubs of using the traditional chewing stick for oral hygiene purpose when investigated. The result show that 69% of youngs (13-29)years had healthy periodontal tissue, where as BOP & calculus where registered in 33 -44 years age group. 84.5% have shallow pocketing and 12.5% had deep pocketing. Clinical attachment level and calculus index revieled, age related attachment loss and calculus formation. Oral hygiene aids have also an influence on periodontal status with tooth brushing providing more efficient hygiene than using stick. WHO effort directed toward prophylaxis programs to be intensified (2)

A case report revealed chat induced plasma cell gingivitis which disappear after discontinuation of chat chewing .This case reports also indicate possible synergistic effects of chat in development of OSCC of the floor of the mouth plus relevance of good social history to the patients ethnic back ground (3)

A crossectional study was conducted in January 2001 in the four colleges found in North West Ethiopia. The study revealed 13.1% life time prevalence rate of cigarette smoking and 26.7% life time prevalence rate of hat chewing (4)

In recent crossectional study it was found chat chewing caused loss of periodontal attachment presenting either as an increased pocket depth or gingival recession. From the context of oral health, chewing chat increases the risk of periodontal disease, temperomandibular joint click and dry mouth (5)

A result obtained from one study indicate that chat chewing increased the prevalence or and levels of a number of periodontal health associated species of bacteria, while it did not influence and, in some cases decreased those of periodontal pathogens. It is concluded that chat chewing does not seem to induce a microbial profile that would put the periodontium at risk of developing disease. It rather favours the presence of species that are compatible with periodontal health. This may be due to selective antimicrobial properties of chat. If has also tannin with cariostatic properties (6)

One of the most important considerations from oral point of view is the relationship between chat chewing and development of oral cancer (OSCC). Soufi et.al stated that there may be a link between chat chewing and oral malignancy. in some cases malignant lesion develop at site where chat bolus is hold. A further retrospective study undertaken in yemen looked at 649 cases of primary malignant tumors eventhough this study found that OSCC is the most prevalent of all tumors (18.3) occurring in this group. There was high occurrence of simultaneous consumption of tobacco in these patients and makes it difficult to deduce precise role played by chat in high prevalence of OSCC. (7)

2.2. Significance of the Study

The spreading of chat plant and related problems to chat use in different part of Ethiopia is worth considering. In particular Harar, the area which in known in its long history by growing chat plant, is the focus of this study. It is detrimental to study the magnitude of chat impact on periodontal status and to find a solution for the problem.

Studies show that chat chewing cause loss of periodontal attachment presented with either increased pocket depth or gingival recession. It is also supposed to increase risk factor of periodontal disease, temperomandibular joint disorders and xerostomia.

This study will provide base line information of impact of chat chewing practice on periodontal tissue health among medical out patients of HJH of Harar town. This will help to identify the problem chat cause on the intact periodontal tissue and to prevent it.

In addition this study will describe the outcome of habitual chewing of chat on periodontal tissue as well as in the oral cavity and creating awareness in the society about it.

CHAPTER THREE

3.1.1 General objectives

To asses impact of chat chewing habit on the status of periodontal tissue among medical out patients at HJRH in Harar town, Eastern part of Ethiopia.

3.1.2. Specific Objective

1. To determine chat chewing pattern by sex, religion and ethnic group of outpatients.
2. To determine the relationship between chat chewing and gingival bleeding
3. To determine the relationship between chat chewing and gingival recession.
4. To determine the relationship between chat chewing and clinical attachment loss
5. To determine the association of chat chewing with different periodontal variables.
6. To determine the relationship between chat chewing and calculus deposition.

CHAPTER FOUR

4. Methods and materials

4.1. Study area & study period

4.1.1. Study Area.

The study was conducted in Harar Jegol Hospital at medical OPD in Harar town located eastern part of Ethiopia which is 525 km from the capital, Addis Ababa. It has average altitude of 1885m above sea level. It is known by Harar Jegol which included in world heritage list in 2006 by UNESCO. According to national population and housing census of Harar town of 2005 G.C, the population of Harar town was 122000.

4.1.2. Study period.

The study period was from June 1-14, 2013

4.2. Study Design

A crossectional study deign was conducted

4.3. Population

4.3.1. Source population

The source population were all medical out patients at HJH

4.3.2. Study population

All medical out patients who was chat chewer during data collection period at HJH

4.4. Sample size determination and sampling technique

4.4.1- sampling technique

Non probability Convenience sampling technique was used

4.5 Inclusion and Exclusion criteria

4.5.1 Inclusion criteria

- Those patients that can speak & hear
- Chat chewer patients

4.5.2 Exclusion criteria

- Patient with hearing and speaking problem
- Patient who do not have chat chewing habit.
- Patients with other medical problem like DM, HTN
-Patients who have cigarette smoking habit

4.6 Measurement Variables

4.6.1 Dependent Variables

- Gingival bleeding
- Gingival recession
- Clinical attachment loss
- Halitosis
-Oral hygiene
-Mucosal ulceration

4.6.2 Independent Variables

- Age
- Marital Status
- Ethnicity
- Educational level
- Religion

4.7 Data Collection processes And Instruments

4.7.1 Data Collection Technique

An interview and direct observation was done by a data collector using a prepared questionnaire as stepping stone. The oral cavity was observed closely to assess the periodontal status and fill the questionnaire in an ordered manner.

4.7.2 Data quality Control

Before collection of Data, the highlight about the relevance of data was given for data collectors. All Questionnaires and document was kept properly for possible checking.

4.7.3 Instruments

The instruments used include; mirror, explorer and graduated probe and wooden spatula

4.8 Ethical consideration

A letter was written by Jimma University CBE Office and sent to HJH Medical OPD. The purpose was politely explained for the patient and the Medical staff.

4.9 Limitation

- Shortage of study Time

4.10 Operational Definition

1. Cathaedulis – A scientific name given to chat.
2. Calculus - A calcified adherent mass on the surface of teeth and appliances.
3. Amphetamine – A group of Sympathomimic drugs that has potent CNS stimulant action.
4. Clinical attachment loss: distance between base of pocket and CEJ
   Mild; 1-2 mm attachment loss
   Moderate; 3-4 mm attachment loss
   Severe; 5-6 mm attachment loss
5. Gingival recession: Measured from CEJ to Marginal gingiva of each tooth
6. Periodontal Pocket; distance between bases of pocket and gingival margin
7. Sub gingival calculus: calculus located below the crest of marginal gingiva.
8. Supragingival calculus- calculus located coronal to gingival margin.
   9.Furcation
   Class I- Probe can reach concavity of root trank
   Class II – Can reach furcation area between roots
   Class III- Whole through furcation area.
   10. Periodontal tissue- tissue attached to the tooth.
   11. Grading in CPI
   0 = Healthy
   1 = gingival bleeding after probing

2 = Sub gingival calculus

3 = Probing depth 4-5 mm

4 = Probing depth > 6 mm

12. Tooth mobility

Grade I: Moves < 1mm horizontally.

Grade II: Moves 1-2 mm horizontally.

Grade III: Moves >2 mm and if the tooth can move in occluso apical direction (can be depressed or extruded)

13. Oral hygiene

Excellent: no debris and calculus

Good: Soft debris and calculus covering < 1/3rd of tooth surface

Fair: Supra gingival calculus and soft debris covering <2/3 of tooth surface.

Poor: Soft debris and supra gingival calculus covering > 2/3 of tooth surface.

CHAPTER FIVE

Result

A cross sectional study was done on chat chewer patients that visited medical OPD of HJH to assess the impact of chat chewing habit on periodontal tissue.

The study was conducted on 72 chat chewer patients, out of which 40(55.5%) were males and 32(44.4%) were females. About one third 24(33.3%) of the patients were in the age group of 21-30 years followed by 31-40 years and > 40 years which accounted for 30.5% and 27.7% respectively.

More than two third of the patients 55(77.7%) were Muslim followers and majority of them 62(86.1%) were Oromo in ethnic group, the rest were Amhara, Harare and other ethnic groups.

Regarding the occupation of these patients most of them were farmers and marchants, 41.6% and 27.7% respectively. More than half 44(61.1%) of these patients were married.

Concerning oral hygiene practice chewing stick (55.5%) were the leading tooth cleaning tool among these patients and most of them use it irregularly (36.1%).

High percentage of partients (52.7%) complained tooth discoloration as major change in their oral cavity after they started to chew chat. These patients preferred to chew mainly in the afternoon (83.3%) and were daily (52.7%) chewers.

From the duration of start, 63.8% of the patients was experienced chewing chat for >4years. 22.2% started to chew within the last four years(2-4years) and 13.8% were started to within the last 2 years(1-2years).

DUMMY TABLES

Table 1: Distribution of chat chewing habit on socio demographic basis, at HJH, 2013

Distribution of chat Chewing	Male		Female		Total	Level of significance
AGE	%	no	%	no		
10-20	5.5	4	2.7	2	8.3%	X2=3.42
21-30	20	14	13.3	10	33.3%	Df=3
31-40	16	12	14.5	10	30.5%	P=0.331
>40	21	16	6.7	4	27.7%	
RELIGION						X2=2.1
Muslim	60.3	43	17.4	12	77.7%	Df=4
Orthodox	6	6	4	2	11.1%	P=0.718
Protestant	2.7	2	0	0	2.7%	
Catholic	1.7	2	1.0	0	2.7%	
Others	0.7	3	2	2	2.7%	
ETHNIC GROUP						
Oromo	64	46	22.1	16	86.1%	X2=1.20
Amhara	2	1	0.7	1	2.7%	Df=3
Harari	0.7	1	2	1	2.7%	P=.754
Other	5.1	4	3.2	2	8.3%	
OCCUPATION						
Student	17.1	12	5.1	4	22.2%	X2=.222
Farmer	30	22	11.6	8	41.6%	Df=3
Government Employee	6.3	4	2	2	8.3%	P=.970
Merchant	19	14	8.7	6	27.7%	
MARITAL STATUS						
Single	17.4	12	10.3	8	27.7%	X2=4.38
Married	45	32	16.1	12	61.1%	Df=3
Divorced	3.5	3	2	1	5.5%	P=0.224
Widowed	1.5	1	4.0	3	5.5%	

Table 2; - General Oral hygiene practice Of Medical out Patients, at HJH, 2013

Frequency of cleaning	**Male%**	**no**	**Female %**	**no**	**Total**	**Level of significance**
Every Morning	15	11	7.2	5	22.2%	
Always before sleep	8.6	6	8	6	16.6%	X2=11
After each meal	16	12	9	6	25%	Df=4
Before meal	0	0	o	0	-	P=.721
Irregularly	20	14	16.1	12	36.1%	
Total					99.9%	
Tools and method of cleaning						
Rinse only with water	10.6	8	6	4	16.6%	X2=0.971 Df=2
Chewing stick	40	29	15.5	11	55.5%	P=o.610
Tooth brush	17	12	10.7	8	27.7%	

Table 3; Changes that occur in oral cavity of chat chewers of medical out patients at HJH, 2013

Changes in oral cavity	**Male%**	**Female%**	**Total**	**Level of significance**
Discoloration	33.3	19.4	52.7%	
Bad breath	11	3.5	14.5%	X2=5.77
Ulceration or mucosal				Df=3
irritation	2.7	8.3	11.1%	P=0.124
Gingival bleeding	19.4	8.3	21.7%	

Table 4: Periodontal variables among chat chewers of medical out patients of HJH, 2013

Variables of periodontal status		Male		Female		Total	Level of significance
		No	%	No	%		
Healthy gingival		12	16.6	8	11.1	27.7%	
BOP		18	25	22	30.5	55.5%	X2=6.34
Calculus		23	31.6	9	12.2	43.8%	Df=5
PD 4-5 mm		8	11.1	6	8.3	19.4%	P=0.275
PD ≥ 6 mm		5	6.9	3	4.1	11%	
GR		34	47.2	18	25	72.2%	
	Grade I	10	14.4	7	10.2	24.6%	
TM	Grade II	6	8	2	2.6	10.6%	
	Grade II	3	4.2	1	2	6.2%	
	Class I	12	17.2	4	6	23.2%	
FI	Class II	1	2	1	2	4%	
	Class III	0	0	0	0	-	
	Mild	24	34	7	10	44%	
CAL	Moderate	2	3	2	2.8	5.8%	
	Severe	5	6.9	3	4.1	11%	
Lost tooth		18	25	4	5.5	30.5%	

Table 5: Chat Chewing practice among medical out patients at HJH, 2013

	Male %	**Female%**	**Total**	**Level of significance**
Frequency of chewing				
Daily	45.7	7	52.7%	
Once a week	9	2.1	11.1%	X2=4.7
2-3 times per Week	5	3.3	8.3%	Df=3
Occasionally	18.3	9.4	27.7%	P=0.195
Total				
Duration of start				
< 6 month	-	-	-	X2=7.1
1-2 Year	6.8	7	13.8%	Df=3
2-4 Year	13	9.2	22.2%	P=.342
➢ 4 Years	44.8	19	63.8%	
Specific time of chewing				
Morning	-	-	-	X2=6
Afternoon	62.3	21	83.3%	Df=3
In Evening	7.9	3.2	11.1%	P=.o84
During night	5.5	0	5.5%	

Table 6; Association between duration of chat chewing and periodontal variables.

	Duration of chat chewing						Level of significance
periodontal	**1-2 years**		**3-4 years**		**4 years**		
Variables	**No**	**%**	**No**	**%**	**No**	**%**	
Healthy gingival	7	9.2	8	11.4	5	7	
BOP	8	11.5	9	13	22	31	**X2 = 35.4**
Calculus	10	13.6	10	13.6	12	16.6	**Df = 12**
GR	4	5.2	17	24	31	43	**P = 0.000**
TM	2	22.6	10	13.8	18	25	
FI	0	0	7	9.2	13	17.7	
CAL	0	0	16	22.5	27	38	

CHAPTER SIX

Discussion

This study attempts to assess the impact chat chewing on periodontal tissue status among medical out patients of HJH in Harar town, Eastern part of Ethiopia.

Before it was believed that chat chewing is a habit that only Muslims used in lieu of drinking, but in this study participants were from different religion. This result is consistent with the research done by Yigzaw Kebede, gonder, northwest Ethiopia which included chat chewer college students of different religion.

High percentage of these patients was expected to chew chat daily because chat chewing was believed as social norm in Harar & Harar area community and morally acceptable in that society. About 52.7% chew daily while others chew occasionally, once a week and 2 to 3 times per week.

There is significant statistical association between the duration of chat chewing and gingival recession, attachment loss, calculus formation, pocket formation, tooth mobility and gingival bleeding. This finding did not contradict with the research done in Yemen which found that the chronicity of chewing has strong association with defects of periodontal tissue.

However, no significant association is found between gender and changes that occur in the oral cavity of chat chewers and oral hygiene practice including the frequency of cleaning and method of cleaning the tooth.

In terms of specific time of chewing, some patients chew in evening & during night, otherwise 83.3% chew in the afternoon. Another research in Yemen found the result that chat chewing is predominantly a male habit and mostly chewed in the afternoon during social gathering and with families while holding conversation.

Concerning changes that occur in the oral cavity of these chewers, Tooth discoloration (52.7%) were the most common one because most of them use chewing stick (55.5%) and irregularly (36.1) clean their teeth. From the journal of periodontology it has been said that oral hygiene aids have also an influence on periodontal status with tooth brushing providing more efficient hygiene than using stick. (2) Gingival bleeding (21.7%) and bad breath (14.5%) were other complaints of these subjects. Gum bleeding early in the morning and while brushing tooth were common, Small number of patients (11.1%) were complain ulceration or mucosal irritation especially on the side of chewing due friction in chronic chewers on buccal mucosa.

Similarly the study that was conducted in Yemen found the result that the incidence of gingival bleeding was significantly higher in chat chewers. About 23% of chewers completed difficulty in mouth opening. Small percentage has also difficulty in swallowing hard food, burning sensation in soft tissue, ulcer in oral mucosa & gingival recession was found in higher proportion of chat chewers. (1)

Regarding periodontal status that was determined by using CPITN, only 27.7% of these patients have healthy periodontium. 55.5% has BOP, 43.8% has calculus deposition especially on lingual area of lower anterior and buccal surface of upper molars, most likely due to the presence of salivary gland duct orifice and poor oral hygiene practice. Small percentage of patients a have shallow pocket (19.4%) and 13.7% has deep pocket.

About 72.2% of patients have gingival recession. These higher percentages of gingival recession were associated with the higher frequency of chewing and longer duration of start (daily, 52.7% and > 4 years, 63.8% respectively).
Mild clinical attachment loss and grade I tooth mobility were uncommon finding among them.
In another study from August to September 1991 the periodontal status of 1001 Yemenites representing age group 12-14, 15-19, 20-24 and 35-44 years was recorded and evaluated with performance of CPITN the calculus

index and clinical attachment level, the impact of chewing chat, the leaves of cultivated alkalized shrubs of using the traditional chewing stick for oral hygiene when investigated, the result show that 69% of young's (13-29) years had healthy periodontal tissue, where as BOP and calculus were registered in 33-44 years of age group. 84.5% have shallow pocketing and 12.5% had deep pocketing. clinical attachment level and calculus index revieled, age related attachment loss and calculus formation.(2)

In recent crosectional study it was found that chat chewing caused loss of periodontal attachment presenting either as an increased pocket depth or gingival recession. From the context of oral health, chewing chat increases the risk of periodontal disease, temperomandibular joint click and dry mouth. (5)

One of the most important considerations from oral point of view is the relationship between chat chewing and development of oral cancer (OSCC). Soufi et.al stated that there may be a link between chat chewing and oral malignancy. In some cases malignant lesion develop at site where chat bolus is hold. A further retrospective study undertaken in Yemen looked at 649 cases of primary malignant tumors' even though this study found that OSCC is the most prevalent of all tumors (18.3) occurring in this group. There was high occurrence of simultaneous consumption of tobacco in these patients and makes it difficult to deduce precise role played by chat in high prevalence of OSCC. (7)

CHAPTER SEVEN

Conclusion and Recommendation

Conclusion

- ✓ The majority of chewer patients started to chew chat 4 years ago and they were daily chewers.
- ✓ Discoloration and gingival bleeding are the major changes that are seen in the oral cavity.
- ✓ Most of chewer patients used chewing stick to clean their teeth.
- ✓ Majority of patients have gingival bleeding and gingival recession especially on the side of chewing. There is statistical association between duration of chat chewing and gingival recession, gingival bleeding and calculus deposition.
- ✓ Calculus deposition mostly supra gingival calculus **present** lower lingual of anterior and posterior region of the Jaw of these chat chewer patients. This may be due to poor oral hygiene and the presence of salivary gland duct in this region.
- ✓ About 22 numbers of the patients lost at least one tooth in the mouth after they started to chew chat.

Recommendation

- ✓ Awareness should be created about impact of khat chewing habit on the oral cavity among the community in order to maintain healthy oral cavity.
- ✓ Scientific research on chat in different institutions and universities should be supported.
- ✓ I would like to recommend the government to integrate education about chat in to curricula of primary and secondary schools.

ANNEX I

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ANNEX II

JIMMA UNIVERSITY

PUBLIC HEALTH & MEDICAL SCIENCES COLLEGE

SCHOOL OF DENTISTRY

QUESTIONNAIRE

Questionnaire to assess periodontal status among chat chewers of medical out patients at HJH, 2013

PART I: Socio Demographic characteristics

1- Age ☐

2- Sex Male ☐ female ☐

3- Religion

a. Muslim ☐

b. Protestant ☐

c. Orthodox ☐

d. Catholic ☐

e. Others ☐

4- Occupation

a. Student ☐

b. Farmer ☐

c. Merchants ☐

d. Government employee ☐

5. Marital Status

a. Single ☐

b. Married ☐

c. Divorced ☐

d. Widowed ☐

6. Ethnicity

a. Oromo ☐

b. Amhara ☐

c. Harari ☐

d. Other ☐

Part II – Specific Questions

1. Have you ever chew chat?

A. Yes ☐ B. No ☐

2. If yes, How often?

A. Once a week ☐ C. Daily ☐

B. 2 or 3 times a week ☐ D. Occationally ☐

3. At which time of the day usually you chew?

A. Morning ☐ C. Evening ☐

B. Afternoon ☐ D. During night ☐

4. For how long have you been chewing chat?

A. < 6 month ☐ C. 2-4 year ☐

B. 1-2 year ☐ D. > 4 year ☐

5. Do you clean your teeth?

A. Yes ☐ B. No ☐

6. If yes, by what method?

A. Rinse with water ☐ C. Tooth brush ☐

B. Chewing Stick (mefakia) ☐

7. When did you clean your teeth?

A. Every morning ☐

B. Before sleep ☐ D. Before meal ☐

C. After meal ☐ E. Irregularly ☐

8. Have you ever faced gum bleeding during early morning or while cleaning your teeth?

A. Yes ☐ B. No ☐

9. Do you use sugar while chewing chat?

A. Yes ☐ B. No ☐

10 .If Yes, how often?

A. Always ☐ B. Seldom ☐

11. Do you notice any changes in your oral cavity after you start to chew chat?

A. Bad breath ☐ C. Ulceration or mucosal irritation ☐

B. Tooth discoloration ☐ D. Gingival bleeding ☐

12. Oral hygiene

A. Poor ☐
B. Fair ☐
C. Good ☐
D. Excellent ☐

13. Gingival recession

16 11
26

46 31
36

14. Tooth mobility

16 11
26

46 31
36

15 .Furcation Involvement

8	7	6	6	7	8
8	7	6	6	7	8

16 .Supra gingival Calculus

16 11
26

46 31
36

17 .CPI chart

16 11
26

46 31
36

18 .CAL

16 11
26

46 31
36

19 .Number of lost tooth

_____
_

13. Gingival recession

16 11 26

46 31 36

14. Tooth mobility

16 11 26

46 31 36

19 .Furcation Involvement

8 7 6 6 7 8
8 7 6 6 7 8

20 .Supra gingival Calculus

16 11 26

46 31 36

21 .CPI chart

16 11 26

46 31 36

22 .CAL

16 11 26

46 31 36

19 .Number of lost tooth _____