

**“Why do I have to Clean Teeth Regularly?”:  
Perceptions and State of  
Oral and Dental Health in a Low-income  
Rural Community in Bangladesh**

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# Abstract

The general perception that dentistry is expensive keeps many people away from seeking treatment from registered professionals and make them hostage to the services of non-registered lay practitioners. In Bangladesh, no statistics on dental health problems or seeking dental healthcare is available which necessitates study for informed planning of a preventive programme. BRAC Research and Evaluation Division carried out a pilot survey in three unions of Gauripur *upazila* to document the knowledge and awareness and existing oral hygiene practices among the rural people and also, to explore the care-giving practices of the healthcare practitioners - both professionals and non-professionals. Both quantitative and qualitative methods were used for data collection. Also clinical examination was done to record their current state of oral cavity. Findings reveal poor oral and dental health condition of the survey population and their lack of knowledge and awareness conducive to good oral and dental health. Findings also reveal their reliance on informal sector providers for treatment of oral and dental health illnesses due to non-availability of qualified professionals. Oral hygiene practice is a neglected chore in the daily routine of the survey population as revealed through real life observation in the study area. The community people hardly used tooth brush and/or tooth paste/powder. Instead, they used various abrasive materials like charcoal powder, branches of trees claimed to have medicinal properties, etc. for cleaning teeth which is damaging, and in turn, cause different oral and dental health problems. The implication of these findings for programme development is discussed.

# Executive summary

## Background

Oral disorders cause difficulties with chewing, swallowing and speech, and can disrupt sleep and productivity. According to Banglapedia (2006), in Bangladesh, more than 80% of the population have at least one or more oral and dental diseases. Oral cavity is a portal of entry and the site of diseases for microbial infections that affect the overall health. Dentists are trained to correct many of these problems or to prevent them. Generally people are either unaware of what dentists can do to correct these problems or see that dentistry is expensive. As there is no population-based data available, this exploratory study attempts to fill in the knowledge gaps towards designing a preventive oral health intervention programme at primary healthcare level.

## Objectives

This study aims to explore the knowledge and practices about oral and dental health, and current status of oral and dental health of the study population and their relevant health-seeking behaviour.

## Methods

This cross-sectional population-based pilot survey was carried out in three unions of Gauripur *upazila* namely Bhangnamari, Ochintapur and Gauripur where both qualitative and quantitative methods were used for data collection. The community was categorized into six groups: 12-19 years, 20-34 years, 35-55 years old women (non-pregnant), 35-55 years old men,  $\geq 55$  years and pregnant women. Ten respondents were selected randomly from each cluster and sixty people from each union. Thus the total sample size was 180. The study was divided into three sections. Quantitative survey was done with the help of pre-tested structured questionnaire; observation was done with the help of checklists to document the existing oral hygiene practices among the rural people and also to explore the care-giving pattern of the healthcare practitioners, both professionals and non-professionals. Finally, clinical examination was done to record the current status of oral cavity.

## Key findings

- Knowledge and awareness of the survey population on oral and dental health was very poor. Apparently, most of the respondents were ignorant about the importance of good oral and dental health, its relation to general health, and the consequences of bad oral and dental health.
- Their knowledge was influenced by informal providers which is mostly harmful. As a result, majority of the community people relied on non-professional

practitioners like street tooth-pullers, *Bede* (the gypsies), *Kobiraj* (traditional healer), etc. for seeking oral and dental healthcare when problems arise.

- Oral hygiene practice was found to be neglected in the daily routine of the survey population as revealed through real-life observation. The people under study hardly used tooth brush and/or tooth paste/powder. Instead, they used various abrasive materials like charcoal powder, branches of trees claimed to have medicinal properties, etc. for cleaning teeth which is damaging for teeth and in turn cause different oral and dental health problems.
- Combination of poor knowledge and poor practice results in poor oral and dental health condition. This was reiterated by the findings from clinical examination. Calculus, caries, attrition and abrasion as well as halitosis (bad breath) was found to be common.

## Conclusion

This study reveals that the poor oral and dental health condition in a specific geographical region of the country which may be prevailing in the rural plain land of Bangladesh. Thus, an extensive oral and dental health education intervention is needed to raise knowledge and awareness so as to internalize the preventive oral and dental health practices into the daily life style of the population.

## Recommendations

- Knowledge and attitude changes are pre-requisite for behavioural changes. Thus, for a good oral and dental health, the people need to be aware and knowledgeable. The messages should be disseminated using multiple media (radio, TV, print media, popular theatre, folk songs, etc.), should be culture-sensitive and discourage harmful beliefs and practices.
- A life-course perspective need to be undertaken for developing a preventive oral and dental health culture in the country. Targeting the young generation especially the school-going children in the society would help both directly, and also through their practices in the family. Oral and dental health should form an important part of school health programme that BRAC is piloting now.
- Since there is lack of dental professionals in the community, BRAC can train its *shasthya kormis* (SK)/*shasthya sebikas* (SS) on basic and preventive oral and dental health practices, so that, they can build awareness through disseminating information on regular oral health care, basic home-based care, possible consequences of untreated dental problems, difference between professional and non-professional practitioners, need of dental visits and need of proper oral hygiene, etc. They can teach the community how to brush teeth properly or motivate them to give up tobacco consumption for better and stronger teeth, etc. Screening for oral and dental health problems during community health worker's visits to the households will help identifying cases for referral. The issue can also be introduced in the health forums where people can discuss their problems.

# Background

## The importance of oral health and its relation with general health

*"People think of gum disease in terms of their teeth, but they don't think about the fact that gum disease is a serious infection that can release bacteria into the bloodstream."*

*- Dr. Robert Genco (quoted in Emerson, 2009) Editor, Journal of Periodontology*

Oral health is a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity. Risk factors for oral diseases include unhealthy diet, tobacco use, harmful alcohol use, and poor oral hygiene (WHO 2009).

A healthy mouth enables people to eat, speak and socialize without pain, discomfort or embarrassment (Kawn *et al.* 2005). Oral disorders cause difficulties with chewing, swallowing and speech, and can disrupt sleep and productivity. The oral cavity is a portal of entry and the site for microbial infections that affect overall health status. Oral diseases can also affect different aspects of both personal and general life style. Dental treatment can be costly, uncomfortable and time consuming. For those willing to seek treatment, these factors may pose a barrier.

Oral health is related to general health and well-being and therefore, is fundamental to overall quality of life (QoL). Poor oral health might have a profound effect on general health. Morbidity and mortality are high from oral cancer and there is a need for improved primary prevention. Researchers indicate that people with periodontal disease are almost twice as likely to suffer from coronary artery disease as those without periodontal disease (American Academy of Periodontology 2008). Bacteria form in the oral cavity can be aspirated into the lung to cause respiratory diseases such as pneumonia, especially in people with periodontal disease (American Academy of Periodontology, undated). Empirical evidence suggests that there is mild to moderate association between human periodontal disease and certain systemic disorders such as diabetes mellitus, pneumonia, heart disease and pre-term birth (Teng *et al.* 2000). This is also supported by Oliveira *et al.* (2010) in a Scottish health survey. Also, the presence of maternal periodontitis has been found to be associated with adverse pregnancy outcomes such as pre-term birth, pre-eclampsia and gestational diabetes, delivery of a small-for-date infant and foetal loss (Offenbacher *et al.* 1996). Oral diseases and conditions are associated with other health problems such as diabetes, cardiovascular diseases, and pre-term/low birth weight births (Report of Surgeon General 2000).

Oral diseases are linked with individual lifestyle and their prevention depends on adopting lifestyles that are conducive to oral health (Masalu *et al.* 2009).

### **Oral health problems: the Bangladesh scenario**

In a developing country like Bangladesh, disease burden is enormous and availability of curative treatment is quite inadequate compared to the need. Prevention is better than cure. But, knowledge, attitude and practice (KAP) of the general population in disease prevention is far below the international level which contributes to higher disease prevalence. Many superstitions exist among the people of Bangladesh regarding diseases and their treatment. The general perception that dentistry is expensive keeps many people away from the registered professionals on one hand, while on the other hand making them hostage to the services of non-registered lay practitioners. The result is that the people of Bangladesh, in general, have a very low level of awareness regarding oral health and hygiene.

A large portion of population in Bangladesh is in the habit of chewing betel leaf and betel nut without knowing its side effects. Betel nuts contain aricolin (Aricolin is almost similar to nicotine in cigarette), which irritates the mucous membrane of mouth and exaggerates the respiration (Drug information online, undated). In Bangladesh, >80% of the population have at least one or more oral and dental diseases (Hussain 2006). The people of rural areas are comparatively much ignorant regarding oral and dental hygiene. In rural areas there is no facility available for regular dental treatment except voluntary dental camps at some places (Hussain 2006). Several small scale studies show that lack of proper knowledge impede people from receiving proper care - ultimately, leading to different dental and oral health problems.

### **Rationale of the study**

There is lack of studies on dental health status in Bangladesh. There have been no population-based survey done in the country over the past years and thus, no statistics on dental health problems or seeking dental healthcare is available which again reminds us of the necessity of a study for informed planning of a preventive programme for different segments of the population. This exploratory study is expected to reduce this knowledge gap towards designing a preventive oral health intervention at primary healthcare level.

### **Objectives**

#### **General objective**

To explore the knowledge and practices about oral and dental health, and current status of oral and dental health of the study population, and their relevant health-seeking behaviour.



**Specific objectives**

- To explore the awareness and knowledge about oral and dental health including its importance for general health, and current oral and dental healthcare practices among the survey community,
- Understand their health-seeking behaviour related to dental illnesses and the availability and accessibility of dental healthcare services and providers in the local community, and

Clinical examinations to study the current status of oral and dental health of the survey community.

# Methods

## Study areas

The pilot study was carried out in three unions of Gauripur *upazila* namely Bhangnamari, Ochintapur and Gauripur. Gauripur, a sub district (*upazila*) of Mymensingh, is situated at the northern part of the country with an area of 374.07 sq. km. It has a population of 247,945. The study area has been chosen purposively in terms of accessibility to the respondents and also because BRAC programs has been running in this region for a long time which helped us to find out the respondents.

## Sample size

The community was categorized into the following six groups;

- Teenagers (12-19 years old) (all permanent teeth erupts by this age, except wisdom teeth)
- 20-34 years old
- Middle-aged (35-55years) women (non-pregnant)
- Middle-aged (35-55years) men
- Elderly  $\geq 55$  years
- Pregnant women

Ten respondents were selected randomly from each cluster and sixty people from each union. Thus, the total sample size was 180.

## Data collection

This study is a cross-sectional population-based pilot survey where both qualitative and quantitative methods were used for data collection. The study was divided into three sections. Quantitative survey with the help of pre-tested structured questionnaire was done to explore the knowledge and current practices on oral and dental healthcare including oral health-seeking behaviour. Observation was done at two different times in a day (early morning after *Fazr* prayer and noon after *Zohr* prayer) for two consecutive days in the same area to document the existing oral hygiene practices among the general population. Checklists were used to do the observation and the time slots were chosen keeping in mind the lifestyle of the common village people.

Observations were also made to explore the care giving patterns of the healthcare practitioners, both professionals and non-professionals. Finally, clinical examination was done to record the current status of oral cavity and some key points were noted. It was done to each and every respondent including the service providers by a dental surgeon (the first author) with the help of disposable mirror and disposable probe in naked eye.

### **Data processing and analysis plan**

The data were organized and tabulated by using MS Word, Excel and SPSS. Data from the field were transcribed, translated and entered manually every day. Simple descriptive statistics was used to see the frequency and percentage distribution. The graphical presentation was used for disseminating the information in a more convenient way.

### **Variables (dependant and independent)**

The independent variables were age, sex, education, experience of any dental pain/discomfort in the past 12 months and their care-seeking behaviour.

The questionnaire was designed to assess the –

- Consumption of tobacco (in any forms) and/or alcohol,
- Professionals and/or non-professionals visit,
- Use of toothbrush, meswak (chewing sticks), etc and
- Use of toothpaste, tooth powder, charcoal, and toothpicks, etc.

### **Ethical consideration**

The study had ethical approval from the Research and Evaluation Division (RED) of BRAC. The study did not involve any invasive techniques and all the data were collected through face-to-face interview. In each case, a written consent form was read out to the participant with clarifications where needed. Verbal consent was taken from all the participants before doing any oral examination and interview as well. It was made sure that the participants understand the contents of the consent form and that they have no obligation to participate and withdraw from the interview and the oral examination at any point during the interview without any negative consequences. All the face-to-face interviews were done by specially trained research assistants with anthropology background for qualitative findings. The clinical examination of each patient was carried out solely by the principal investigator herself using disposable plastic mirror and spatula. The clinician used disposable gloves and mask to examine each patient. Patients were given minimum advice on oral and dental hygiene and the consequences of not maintaining proper oral and dental hygiene were explained to them. All the names of the respondents have been changed in the report.

# Findings

## Findings from the respondent survey

### *Socio-demographic profile of the sample population*

The study site was divided into three parts starting from the most remote area and gradually moving towards the central part of Gauripur. Of the total respondents, 33% were in the age category 35-55 years old, 55% were females, and 8% were non-Muslims (Table 1).

Sixty-seven percent of study population reported to have received some education. Of them, 48% had education up to primary level (5 years schooling), while 7% had education for more than 12 years (Fig.1). The main occupation of the study population was farming though others were there too. Forty-five percent of the population were housewives while 3% were unemployed. Male members were mostly the key earning members of the households in 41% cases while 37% were self employed. Major occupations of the household heads were farming (47%), and one percent was unemployed. Eighty-seven percent of the families had more than three members. The overall socio-demographic information can be seen in Table 1.

**Table 1. Socio-demographic profile of the study population**

Category	Sub-category	Frequency (N)	Percentage (%)
Age	12-19 years	41	23
	20-34 years	46	26
	35-55 years	60	33
	56+ years	33	18
Sex	Male	81	45
	Female	99	55
	Pregnant	30 (of 99 female)	17 (of 55% female)
Religion	Muslim	165	92
	Hindu	15	8
School attendance	1-5 years	60	48
	6-8 years	17	14
	9-10 years	21	17
	11-12 years	17	14
	>12 years	9	7
Occupation (self)	Housewife	81	45
	School Teacher	5	3
	Student	15	8
	Farmer	31	17
	Business	15	8
	Service	7	4
	Day labor	20	11

### Knowledge about oral and dental health

The knowledge that humans have 32 teeth in the oral cavity was found to be nearly universal (98%). A respondent replied to the question in a sarcastic manner, saying:

*"Anera shunen nai ek chore botrish (32) ta daat felay dimu? Eikhan theikka e to bujha jay mainsher mukhe koyta dat thake."* (Haven't you heard of people saying, one slap by your cheek will take out all the 32 teeth from your mouth? This proves how many teeth we have in our mouth.)

In response to another question on the number of teeth present in their own mouth, 62% reported to have 32 teeth present in their mouth.

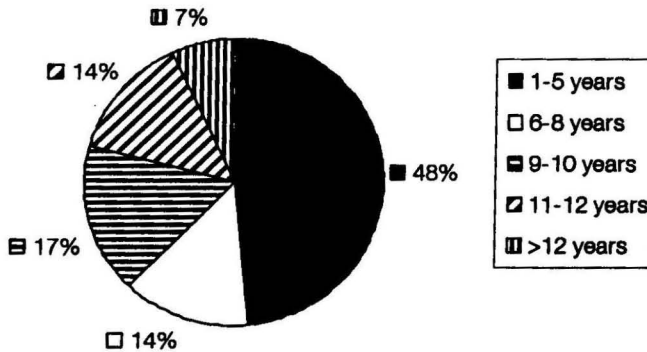
A man aged 57 years said,

*"Amar mukhe koyta daat kokhono ki gunchi naki?"* (Did I ever count how many teeth I have in my mouth?)

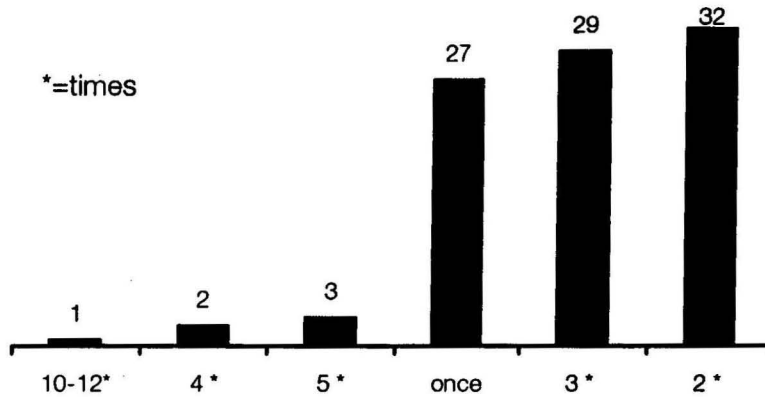
Ninety-nine percent said 'yes' in response to the question whether we should clean our teeth regularly. Ninety six percent responded to have some idea about what to use for cleaning teeth regularly but 17% mentioned the tooth brush.

Ninety-two percent respondents said that they knew the frequency of brushing teeth (Fig. 2). The majority of the respondents (61%) said that they should brush teeth two to three times a day (32%), and another 27% said that they should brush at least once a day.

**Figure 1. Years of schooling among the respondents**



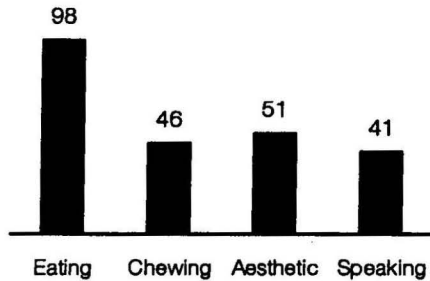
**Figure 2. Frequency of tooth brushing**



Asked about the possible consequences if we had no teeth, respondents were found to be prompt in answering (Fig. 3). Ninety-eight percent mentioned about problems with eating, but most importantly 51% of them mentioned aesthetics and they explained vividly what a major problem it would have been if there was no tooth.

A female respondent of 65 years said, "*Daat na thakle supari cheche khete hoy.*" (We would have to thrash our betel nut to eat if we had no teeth.)

**Figure 3. Consequences if we had no teeth**



Fifty percent of the respondents said that there is a positive relation between oral and dental diseases and digestion or other abdominal problems.

Regarding dental diseases 94% mentioned different dental problems such as toothache (86%), gum bleeding (69%), swelling of gum (49%) etc. (Fig. 4). The respondents commonly described toothache as *daa e chilik pare, gota hoy.* 'Pochamina' was the common term used by many

people to describe gum bleeding. A lady of 35 years said, "*Daat e shanniker betha hoy, daat rim rim kore.*" This term 'shanniker betha' was explained as gum swelling and bleeding on probing. Twenty-one percent mentioned dental caries, for which the commonly used terms were 'kira dhore' and 'dater poka'. Mobility was a problem to them because teeth may fall out of mouth if/when they become mobile and cause difficulty in chewing.

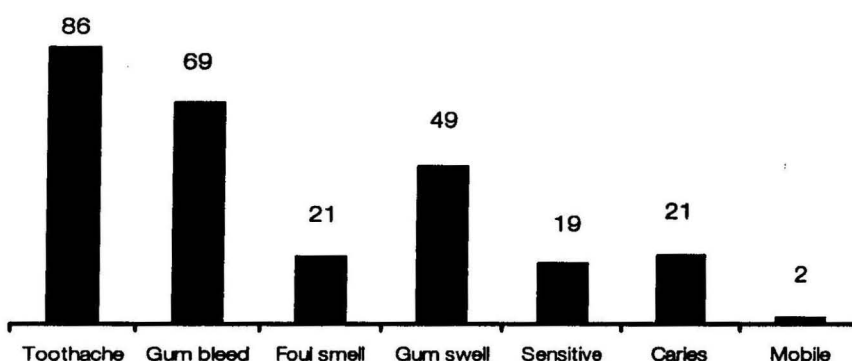
### Current practice related to oral and dental health

Ninety-seven percent of the respondents said they washed their mouth regularly. But more in-depth probing reveals that 11% of them do not use anything to clean their mouth and do not even clean regularly. They just gargle with water once in every 10-12 days.

A 70 years old male respondent said,

*"Daat abar roj roj porishkar korar ki ase, dosh baro din por por kuli kori pani diya, aar ki koroom?"* (Why do I have to clean teeth regularly, I just gargle with water every 10-12 days, and what else do I have to do?)

**Figure 4. Concept about different types of dental diseases**



Twenty-nine percent were found to wash their mouth twice a day. Few of them suggested cleaning the teeth after every meal. A 40 years old male respondent said, *Jotobar khaon khai totobar e daat porishkar kora uchit* (we should clean our teeth every time we eat). All the 180 respondents said that they cleaned their mouth once in every morning.

Fifty percent said they used their finger to clean their teeth. Thirty-eight percent used toothbrush and among them 33% (n=59) said that they change the brush frequently, the majority (70%) within six months or less. However, on further probing, it was found that they hardly change the brush on time or at regular interval. A 25 years old lady said, *"Brush noshto hoile paltai"* (we change the brush when it is distorted).

Tree branches from Hydor<sup>1</sup>, Arenda<sup>2</sup>, Betel nut tree and mango tree are also popular for cleaning teeth. Another lady of 65 years old said, *"Hydorer daal diya daat majhle dat porishkar hoy."* (Tooth cleans well if hydor tree branches are used.)

<sup>1</sup> Local term, used by village people, not found in dictionary

<sup>2</sup> Local term, used by village people, not found in dictionary

Thirty-eight percent reported to use charcoal powder for cleaning their teeth. Toothpaste is rarely used but *Bidyut* tooth powder was found to be quite popular among them. In the periphery, a special kind of home-made powder (Fig. 5) was found to be popular. They used this with brush or sometimes with finger. A 50 years old man reported that he cleans his teeth with mango tree branch and sand. He said,

*"Baba, amra koi pamu daat porishkar korar jinish, r tachara gaser shikor bakore je oshodhi gun ase ta ki bazaar er oshudh e paoa jaibo? Oi aam gaser daal r bali diya daat ghoshle onek aram paoa jay, daat e bish thakleo dur hoye jay"* (Dear, where will we get tooth cleaning material? Moreover, shall we get the special medicinal property from the local medicines that the tree branches carry? So, I use the mango tree branch with sand, it keeps my teeth clean and also gives relief from toothache)

**Figure 5. Tooth brush and special tooth powder used by community people**



Forty-three percent were found to complain of bleeding from gum during brushing. Most of them had their own home remedy to solve this problem. Like a female respondent said, *"Dater gura diya rokto porto, pore nimer dal diya ghoshchi, bhalo hoye gese."* (I had gum bleeding and I used *neem* stick and it disappeared.)

Fifty-seven percent (n=103) of the population reported to have the habit of chewing *pan* (betel leaf)

with *supari* (betel nut) with other different forms of tobacco like *jorda*<sup>3</sup> (snuff), *gul*,<sup>4</sup> etc. either to get relief from toothache, for cleaning teeth, or just as a habit. *Gul* is famous for pain relief to most of the people.

A respondent said, *"Gul dile daat er rog dur hoy, kintu majhe majhe bhitor e gas jome, gas jomle abar onnanno rog hoy."* (*Gul* gives temporary relief from dental diseases but sometimes gas forms and causes other health problems.)

Betel leaf is often times a solution for toothache or gum swelling to them. A woman of 35 years said,

*"Daat e rim rim kore, shanniker betha hoy, tokhon paan khaille aram paoa jay, betha hoile ki kori? Daat er goray ektu paan aar gul diya rakhi, ektu por betha bhalo hoye jay."* (Betel leaf gives relief from toothache or gum swelling, so what we do is we put some betel leaf and *gul* in our gum of the adjacent tooth with pain, and it gets cured.)

<sup>3</sup> A preparation of tobacco to be chewed with beetle-leaves

<sup>4</sup> Powder of burnt tobacco



Fifteen percent and 12% are in the habit of smoking *biri* and cigarettes respectively. Fifty-three percent of them were consumers of tobacco, while others became regular users either due to friend's pressure or societal status or use it as a means of pain relief. A male respondent of 20 years said, "*Ami jokhon choto achilam, amar dadur jonno paan cheche dite hoito, shekhan theke ekta duita koire khaite khaite amar o pan khaoar obbhash hoye gese.*" (In my childhood I used to thrash betel leaf for my grandmother, and I used to taste small amount, since then I became habituated.)

Most of the pregnant mothers mentioned that chewing tobacco increases their appetite. One pregnant mother said,

*"age khaitam na, biyar por shamir shathe khaite khaite obbhash hoye gese, ekhon ektu adhtu na khaile mukhe bishad lage, bujhen na shorir ta to kharap, bomi bomi lage, tai ektu adhtu pan chibai aar ki"* (I never had this habit before. After marriage, I started sharing with my husband, now I don't feel good if I don't have it. Moreover, I am sick, I feel nauseous, so I feel better if I chew betel leaf).

They take tobacco countless times a day and the habit increases with their age. A 48 years old female respondent said, "*Paan to kharap kisu na, khaoar por por paan na khaile khaoar shad mite na, khaoa ta kamon jani poripurno hoy na.*" (Betel leaf is not something bad, if we do not have it after meal, it gives a feeling of emptiness and dissatisfaction).

#### **Current health-seeking behaviour related to oral health problems**

Different oral and dental health problems arise for not maintaining good oral and dental hygiene for long time. People are not aware of problems such as periodontitis, gum bleeding, dental caries, different tooth surface lesions like attrition, abrasion, erosion etc. Seventy-three percent of the respondents reported to have had dental problems during their lifetime. Fifty-seven percent complained about toothache and 41% complained about gum bleeding. The other main complaints were oral sores and foul smell.

Apparently, the survey community is largely unaware of the consequences of untreated dental problems. Reportedly, many of them leaves the problem untreated (21%). A girl of 19 years said,

*"Grandma taught me to use gul in the gum, I always had thoshka in my gum, which smells bad, and I follow her advice, though it doesn't cure me for long but it gives me temporary relief."*

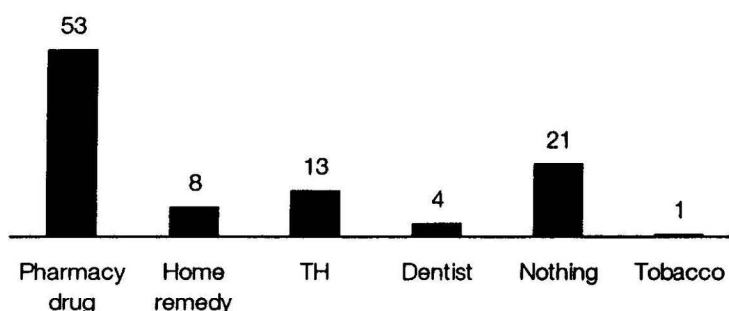
When they seek care for oral and dental health problems, people mostly preferred non-professional healers (traditional and allopathic) and home remedies for treatment. According to the respondents, 53% used to buy drugs from retail drug shops as advised by the drug sellers (non-qualified practitioners of allopathic medicines) while 13% used to visit the local traditional healers (*Kobiraj*). Interestingly, 4% of the respondents stated that they visited dentist when they had dental problems (Fig. 6). But different excuses were given for not visiting dental professionals, a man of 50

years said, *"Daat falaile chokher drishti shokti koime jay"* (It causes problems with eye-sight if we extract our tooth). Another reason for not going to dentist was mentioned as frequent change of dentists. A 45 years old man said,

*"Hashpatale gele to bhaloi hoito, hahspataler daktar daat uthay, injection diya tobda lagay, kintu daktar eto torit paltay je porobortite shomoshsha hoile her e pamu kamne?"* (It would have been better if I could go to hospital to seek care, dentists extract tooth by anesthetizing the area with injection, but how can we go there? They get transferred so rapidly that if I face any difficulty afterwards, where would I find him?)

The rest are either leaving the problems untreated or taking home remedies like warm water gurgling or using tobacco

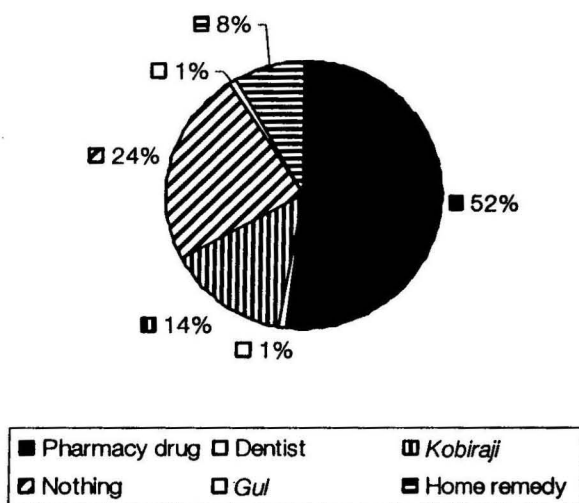
**Figure 6. Oral healthcare-seeking pattern among the community people.**



Those who have had experienced dental problems had different opinions about seeking care. Twenty-four percent did not seek any treatment at all while 52% sought medicine from the retail drug shops as per shop attendants' advice (Fig. 7). They are mostly dependent on traditional healers (14%). A boy of 13 years said, *"Barite amar dadi e daktar, poka khaile uni e jhar fok kore, mookh fule gele oshud dey."* (My grandmother is a healer, she can expel of evil spirit by uttering charms and incantations if I have dental caries, and she provides medicine if we have any swelling in the mouth). A 35 years old female respondent said,

*"Shumir ma shoni budh chara shob din shokal theke shondha porjonto dater chikitsha kore, jhar fok kore, kono taka lage na, je ja khushi hoye dey tai ney, tar chikitshay dater oshukh bhalo hoy."* (Shumi's mother provides service for all, everyday dawn to dusk except for Saturdays and Wednesdays. She utters incantation, and she doesn't claim money, people pays her according to their wish. It cures their problems.)

**Figure 7. Oral healthcare-seeking pattern among the community people once problem arise**



One percent of the patients visited a dentist during their life time. Table 2 shows the frequency of dentist's visit of the community people. People were not very much satisfied with the dentist available in their locality. Professional dentists were found only in Gauripur sadar. The research team fortunately met a leader of local *Mohila Samiti* (Women Voluntary Association), who said,

*"hashpataler daktar er kase gele gorur garir chakkar moto daater bethar bori dey, oikhane giya labh ki, pet er bethar jei bori shei bori e dey, eta to kinei khaoa jay."* (The doctor gives us the same medicine for toothache which is given to cure stomach ache, so what's the point of going to them? The medicine looks like a wheel of an oxcart; we can buy it from the local shops without even going to them.)

The other member of this Samiti said, *"Kamini fuler pata halka gorom panite lobon diye jal diya, shei pani khaile daater betha bhalo hoye jai"* (The leaves of Kamini tree are good pain reliever; it has to be boiled in water and then the water should be consumed). They showed us their box of toothbrush of the entire family. They had separate chamber for new and old toothbrushes in the same container and it apparently showed the regular use of toothbrush and tooth powder (Fig. 8).

**Table 2. Frequency of dentist's visit (categorized into union, age and sex)**

Treatment from dentist	Yes (%)	No (%)
Bhangnamari	29	6
Gauripur	12	18
Ochintyapur	35	0
12-19 years	12	0
20-34 years	12	6
35-55 years	35	18
56+ years	18	0
male	35	0
female	41	24

**Figure 8. Tooth brushes and tooth powders used by a family in the community**



Eight percent of the respondents were found to use home remedies. Some were more dependant in home remedies. A woman of 25 years old said, "Daater majoner shathe shorishar tel mishay makhle dater betha r mari theke rokto pora bondho hoy." (Toothache and gum bleeding can be cured by using mustard oil mixed with tooth powder). While another woman said, "Dater betha hoisilo, lobongo chibaisilam, aram hoisilo, rokto porao bondho hoisilo, ekhon daat e betha hoile lobongo e chibai" (I had toothache and also gum bleeding and I got relief by chewing clove, so now I take only clove if I face dental problem.) Sixty-one percent of the population said to have recovered from the care they seek out and others either did not seek for any care at all or they were not satisfied with the care they received.

As a consequence, 19% went for alternative treatment. Others relied on coal powder use, warm water gargle, chew cloves or use *gul* or tobacco (*pan*, *jorda*) to get temporary relief from the discomfort. People were also found to wear amulet (*tabij*) from the *Kobiraj* for dental problems (Fig. 9). On clinical examination, a 40 years old lady showed an amulet which was given by a local *Kobiraj* for treating her dental problems. She had one tooth extracted due to severe pain, but ultimately it did not reduce her discomfort. Then the *Kobiraj* gave her the amulet and since then she does not have any dental complaint. On clinical examination, her oral cavity was found to be full of stains with mobility in the upper and lower anterior portion, gum was swollen, and foul smell was coming out of her mouth. She has been taking *pan*, *supari* and *jorda* regularly for the last 25 years.

**Figure 9. Amulet used by a female respondent for oral problems**



Nine percent of the patients went to dentist as secondary choice of treatment out of which 89% (n=16) went with the complaint of toothache and the rest 11% went for advice. Among them 76% (n=13) received dental treatment. They had tooth extraction, filling, scaling, etc, but 15% (n=2) could not mention the name of the treatment they took. For majority of those seeking treatment (66%), the expenditure was not more than Tk. 500/- which was considered as highpriced by 53% of the patients. While asked about the reasons for negligence to visit dentist, some of them complained about unavailability of dentists. Thirty-five percent have visited dentist from Ochintapur union, and it has been observed highest

(35%) among the age group of 35-55 years and predominantly females (41%) were found to be cautious about dental visits. A man of 55 years said,

*"hashpataler daktar er kase kamne jai, tar naam e ba kamne koi, eto torit paltay jay taral Aar her kase chikitsa nile porobortite her kase jamu kamne, tare koi pamu, shey to ekhane thake na, shei Mymensingh theke aisha chikitsa kore. Rat birate dorkar porle to here paoa jaibo na, tai oi Kobiraj e bhorosha."* (How can we go to the hospital doctor if they are changed so frequently? If I take care from him, where will I find him for follow-up or any kind of complaints afterwards, what will I do if I have pain at odd hours since he doesn't even live here. He travels all the ways from Mymensingh, the traditional healer is the only anticipation).

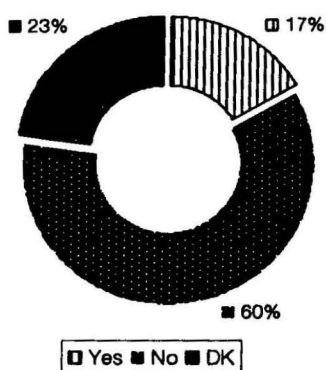
Others complained about the expenses, *"Oi ektu adhtu bish bedna, pochamina shara bochor laigai thake, er jonno otto otto taka diya daktar dekhano jay?"* (It is a common complaint of toothache and gum bleeding throughout the year, so why waste money for this purpose?)

#### **Availability of and accessibility to dental healthcare services**

While asked about the availability of dental healthcare facilities, 60% of the respondents said (Fig. 10) that there was no such facility but they were aware about the availability of non-professional healers, knowing that they did not have any professional training. Some non-professional healers were found to be quite well-known among the local people. Many of them mentioned *Shukkuri's* name in Bhangnamari Union. Some described her as having learnt the profession from her mother-in-law. A female respondent of 35 years from most remote village of Bhangnamari Union said,

"Nodir oipare ekjon ase, she daat er chikitsa dey, roshun, kacha holud, dubla ghash, kolapata diye mishay ekta dola banay, sheita diya daater pok falay." (I know someone from the other part of the river, she treats patients and gives medicine made from the paste of garlic, turmeric, green grass and banana leaves. She uses this paste to remove dental caries.)

**Figure 10. Availability of and accessibility to dental services in the community**



Some of the people talked about the gypsies (*Bede*) in the Ochintapur Union. A male respondent of 86 years said, "*Bedera kola gach theke kira ane, fan gach theke pata ane, tula diye oshud dey, daat theke kira pore, eita ki bishsash kora jay?*" (The *Bede* brings insects from the banana tree, leaves from fan<sup>5</sup> tree and puts medicine with cotton. The insects come out of teeth. Is it believable?) Another male of 60 years had an experience with *Ozha*,<sup>6</sup> he said,

"*Amar daat e bedna hoisilo, pore ei alakay ojha ashle gesilam, tokhon daat er theke shutar moto kalo kalo kotogula kira felaise, ami nijer chokhe dekhsi, her pore amar dat*

*e bish bhalo hoye gese, shathe kisu oshud o disilo*" (I had toothache and I came to an *Ozha*. He brought out blackish insects from my tooth and I saw it myself. Since then I felt relieved from toothache, he gave me some medicines too.)

Very few of them talked about professional dentists who were in Gauripur Union, but none of them could mention their names. They said, "Daktar ase jani, filling kore, daat fele, kintu naam koibar parum na." (There are dentists who do filling and extraction, etc. but cannot recall their name.) They often make mistakes identifying the professional qualified dentists because of the presence of some unqualified and unregistered practitioners in the local markets of Gauripur Union. While the research team was looking for dentists to interview, a boy of 18 years said,

"*Ei alakay kono dater daktar ase na ki, ekhon je upore dokan diya dater daktar er sign board lagaise, shey to age bazaar er moddhe chala bichay daat falaito, tare ki daktar koy naki?*" (Is there any dentist in this locality? The one, who has a chamber upstairs with billboard, was used to sit on the mat in the market and treat patients.)

The person he was talking about was a non-professional practitioner and has been practicing there for about two years. He has very limited options to treat patients.

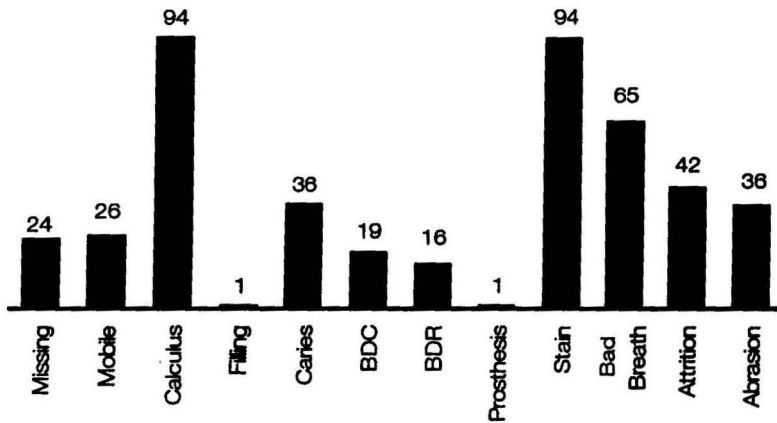
<sup>5</sup> Not found in dictionary, local terms used by village people.

<sup>6</sup> A quack professing to have (supernatural) power of curing snakebites and other morbidities.

### Findings from clinical examination

On clinical examination, 26% people were found to have all the 32 teeth present in their mouth, although 62% claimed to have 32 teeth. Calculus and stain on tooth were the most common findings among almost all the respondents (94%) (Fig. 11).

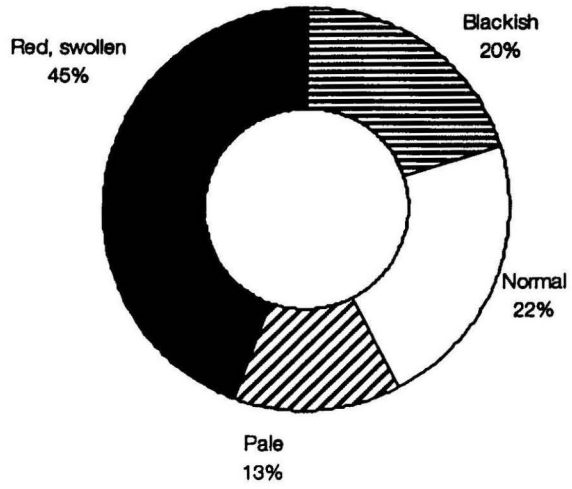
**Figure 11. Findings of oral and dental health through clinical examination**



Although most of them used tobacco, 65% had foul smell. Attrition (42%) and abrasion (36%) were also quite common. one percent was seen with artificial prosthesis and 1% had filling from dentist. Broken down crown (BDC) and Broken down root (BDR) were identified among 19% and 16%, respectively. Caries was identified among 36% of the respondents. Missing tooth (extracted or fallen out due to old age) were found among 24% of the respondents. Mobility was found among 26%, who were mostly old age people.

Forty-five percent of the respondents had red and swollen gum (Fig. 12) while 20% had blackish gingiva which could be either due to their complexion or habit of smoking. Thirteen percent of the respondents were found with pale gingiva. Gingival recession was common to most of them. White mucosal lining could be commonly seen in habitual tobacco chewers in the area of tobacco contact called tobacco keratosis (Fig. 13a). Figure 13b shows oral cavity of a middle-aged man with attrition of all teeth, staining and crowding in both upper and lower anterior region. The summary can be found in Table 3.

**Figure 12. Colour of the gum among the respondents**



**Figure 13a. Keratosis on tongue**



**Figure 13b. Oral cavity of a middle aged man**





**Table 3. Summary of clinical examination of all the respondents**

Points checked in clinical examination	Teeth present	Frequency	Percentage
Number of teeth	0	1	1
	1	1	1
	8	1	1
	12	1	1
	17	1	1
	18	2	1
	20	2	1
	22	2	1
	23	8	4
	25	1	1
	26	2	1
	27	8	4
	28	35	19
	29	6	3
30	28	16	
31	34	19	
32	47	26	
Missing teeth <sup>7</sup>		43	24
Mobile teeth <sup>8</sup>		46	26
Calculus <sup>9</sup>		170	94
Filling teeth		2	1
Caries <sup>10</sup>		65	36
BDC <sup>11</sup>		35	19
BDR <sup>12</sup>		28	16
Prosthesis <sup>13</sup>		2	1
Stain		169	94
Bad Breath <sup>14</sup>		117	65
Colour of the gum	Blackish	36	20
	Normal	40	22
	Pale	24	13
	Red-swollen	80	44
Attrition <sup>15</sup>		76	42
Abrasion <sup>16</sup>		64	36

<sup>7</sup> The absence of teeth from the dentition because of congenital factors, exfoliation, or extraction

<sup>8</sup> Excessive movement of a tooth within its socket as a result of changes in the supporting tissues caused by injury or disease

<sup>9</sup> A hard yellowish deposit on the teeth, consisting of organic secretions and food particles deposited in various salts, such as calcium carbonate

<sup>10</sup> destruction of the outer surface (enamel) of a tooth

<sup>11</sup> Broken down crown

<sup>12</sup> Broken down root

<sup>13</sup> Artificial tooth

<sup>14</sup> an unpleasant odour of the breath

<sup>15</sup> A rubbing away or wearing down by friction (chewing surfaces of teeth)

<sup>16</sup> The process of wearing down or rubbing away by means of friction (tooth surface by incorrect brushing technique and perhaps through the use of a hard brush)

## **Findings from observation on community oral hygiene practices**

We have used the observation technique to explore oral hygiene practices of the community people. This was performed in three different areas of Gauripur *upazila* which were Bhangnamari, Ochintapur and Gauripur Union. It was done in two different times of a day on two consecutive days a week. The time chosen were during early hours of the morning after *Fazr* prayer and at noon following *Zohr* prayer. We observed more than 250 people of different age.

### **a. 1-11 years age group**

Mothers were the caretaker and washed and cleaned the children of 1-4 years age. They used tooth powder or sometimes tooth paste to clean their baby's teeth using their fingers. Children aged five years and above cleaned their teeth themselves and the mothers were least bothered. The kids mostly use charcoal powder to clean their teeth. Others used tooth powder or tooth paste with either finger or tooth brush. Proper technique of tooth brushing (up and down and not sideways) was not practiced. Furthermore, attention was not given how well the teeth have been cleaned while brushing.

### **b. 12-19 years age group**

Half of the 50 children of this group were observed to use charcoal powder for cleaning their teeth with finger for a very short time. Approximately, 12 children were using *meswak* and tooth powder and 10 of them were using tooth brush and tooth paste – 8 of whom were girls. They hardly changed their tooth brush even if it was damaged and non-usable. Mostly the school-going children used tooth brush and tooth powder. However, they were also not aware of proper brushing technique or how to clean the brush. Some kids were seen to keep their brush in an open place where anyone comes and uses it for cleaning household utensils or even birds are sitting on it. The next day they were using the same brush for cleaning their teeth.

### **c. 20-34 years age group**

Some young boys were seen using tooth brush with tooth powder, while others were using *neem stick*. They were cleaning their teeth between 8 and 10 a.m. They came out of their homesteads and stood in groups; gossiped for a long time, and in between they brushed their teeth unmindfully. Apparently, they were not much concerned about the time they spent for cleaning/brushing their teeth. This was rather a kind of social gathering for the youngsters.

### **d. Middle-aged women and men (35-55 years age group)**

Middle-aged men and women used to clean their teeth between 6 and 7 a.m. Four among 50 women were found using tooth brush and tooth paste while the rest were using charcoal powder with finger. They hardly care for the time they spent for this purpose. Most of them are in the habit of using *Gul* in their gum regularly at hourly

intervals. Ten out of the 50 men were observed to use tooth brush and tooth paste. Six were found using *neem stick/meswak*. They did not use any tooth powder or paste with the *meswak*. Rest of them used charcoal powder to clean their teeth with their fingers.

Usually, they performed this ordeal where washing of the household utensils took place. Most of them were not aware of the water they were using to wash their brush, neither the cleanliness of the place where they were storing their *meswak* or *neem stick*. Many had been observed to store their brush or *meswak* in the fence of their house. As usual, birds were sitting on it countless times a day.

e. ≥55 years age group

Many of the elderly usually wake up during *Fazr* prayer i.e. around 5 a.m. in the morning. Those who went for prayer usually used *meswak* for cleaning their teeth before performing ablution (*Oju*) for *Fazr* prayer. They used *neem stick* or betel nut stick (*suparir chal*) with charcoal powder to clean their teeth. Some simply rinsed their oral cavity with water while performing *oju*.

## **Findings from in-depth interviews with the providers**

### ***Unqualified dental practitioners***

#### **Case I. The floating tooth puller of Gauripur Sadar**

**Mode of treatment.** On the first day of our fieldwork, the work of a tooth puller was observed without any interruption. The forceps he used were neither sterilized nor cleaned properly. He cleaned the instruments with Chlorhexidine<sup>17</sup> solution though these were decrepit, old and rusty through repeated use for long years. He mixed red colour with the anaesthetic solution to make the injection colourful and attractive lest the village people assume it be plain water only. High-pitched screaming of the patients and conversation with them made it clear that the anaesthesia was not effective at all. Next, the practitioner anesthetized the affected tooth. After 4-5 minutes, he used the '*Sharashi*' (forceps) to pull out the tooth. He supplied few painkillers and three antibiotic capsules to them (one for each patient).

Four different patients were approached for exit interview of which three was successful. All three had teeth extracted; one had cleaning. One of them had a history of hole in his tooth while the other two had pain and swelling of the gum. The patients' said that they came here because the services were cheap and easily available. Non-availability of dental surgeon in the *Upazila* Health Complex and the cost kept them away from professional doctors. The patients expressed satisfaction with his treatment though two of them complained about pain during extraction. They said that the anaesthetic solution was not effective; it was either only water or cheap product was bought by the practitioner.

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<sup>17</sup> Antiseptic solution

He charged Tk. 80 from each of them for tooth extraction and 50 for cleaning the tooth. Thus, he earned Tk. 290 from them and spent approximately 12-15 minutes for each of them.

### List of tooth pullers instruments

Name of the instruments	Quantity	Use	Type
Disposable syringe	03	For tooth extraction	Repeatedly used and decrepit
Needles of different size	08-10		
Anaesthesia cartridge	Few		
Forceps	01		
Red colour	01 bottle	To make the injection coloured,	
Self- made rasp (ret)	01	To clean the teeth during filling	
Hexo blade	01	To cut the teeth (while extraction)	

**His own story.** In one afternoon, a tooth puller was seen in *Moddhobazar* area of Gauripur union, sitting on a mat (*madur*) under a banyan tree (*Bot tolay*) with some instruments used for tooth extraction, few extracted tooth, glass bottles, and a big hand bag. A conversation with him brought out his profession and treatment technique, inner story of his background, and current status of service delivery.

The man is 38 years old and has been in the profession of tooth extraction for the last 11 years. He can be found in different places of Mymensingh district, especially in *haat-bazaars*. He worked as an assistant of another guy for more than four years before starting his own business and roamed around different places with him. He used to get paid Tk. 40-50 every day from his mentor. After about five years of assistantship, he started his own business. He started with cleaning and extraction of tooth, including implantation of artificial prosthesis. He uses the knowledge and experiences gained from his mentor. He charged between Tk. 20-100 per case. Each '*hat bar*' (the day when the special market takes place) brings him approximately Tk. 400. He mainly extracts tooth with forceps, cleans teeth with specially made instrument and a special kind of liquid. Sometimes he fixes artificial tooth with simplex powder. In addition to treatment, he provides painkillers and antibiotics to the patients. It happened many times that he could not identify the problem of the patient and was unable to provide service to them, and advised them to seek professional care.

The man became excited at some point of conversation and asked us to leave. On our preparation to leave he started talking again. He said that he has two daughters and one son and he has to earn for them. His wife cannot work because of the hernia she had since her third delivery. He has his parents to look after too. They are too old to work and moreover his mother is physically handicapped. These have compelled him to stick to this profession. He had seven years of schooling and has no professional training on oral and dental health. He learnt everything from his mentor.

The tooth puller was aware of his fraudulence, and has been reproached physically by the local people which made him live away from the locality. Many patients returned with infections which he could not manage well. Thus, he has to shift places to avoid unpleasant situations and made his profession uncertain. He argued that competition from modern dental care services is harmful for his line of work, and if this continues for another 2-4 years and becomes acceptable to people, he would have no other alternative but to leave this profession.

#### Case II. The traditional healer of the Bhangnamari Union

While conducting door-to-door visits for quantitative survey, a lady was found sitting at the door-step of a house in the Boalbari village of Bhangnamari Union of Gauripur. She was hearing our conversation with other ladies. At one point the respondent pointed at her and said that she was a traditional healer and treats oral and dental problems very well.

**Mode of treatment.** While shifting the conversation to the healer, she asked us to visit her next day early in the morning without washing mouth. She thought that we were looking for treatment of our dental problems.

To observe her treatment activities we visited her next day as advised. On arrival, two patients were found sitting alongside her. They heard about her from their neighbours. She was giving them medicines prepared by herself. She advised them to take the medicine every day in the morning for 7 days. The first patient gave her Tk. 28 – while the second one gave her Tk. 30. She spent 5-6 minutes for each of them.

We had to spend hours to find out her charisma of providing care to people. After hours of discussions and arguments she confessed about her use of exclusive tree branches to remove 'dater kira'<sup>18</sup> from the teeth. The roots and branches are sometimes inaccessible and she has to gather those from the local forest and hilly areas. She prepares medicines by mixing different tree branches with other ingredients like, *irar kosh*, *fitkari*, *tuita*, *parhi khoyer*,<sup>19</sup> etc. which are available in the local shops. She claims that this is an infallible medicine for almost all kinds of dental and oral health problems.

According to her, this medicine works best for toothache, dental caries, broken crown, foul smell, dental attrition, gum bleeding, gum swelling, etc. which were explained in her own words as, "*Ei oushodhe dater betha, dater poka, dater gorto, pochamina, dater khoy rog, marite rokto pora, mari fule jaoa ittyadi shompurnorupe bhalo hoy.*" (This medicine cures toothache, removes caries, gum bleeding, dental wearing, gum infection etc.) She claimed that the tree branches were adequate to remove dental caries, but she needed to use other materials as well. She charged about Tk. 10-15 for each patient. Everyday, 3-4 patients visit her. The payment

<sup>18</sup> Dental caries is termed as dental insects by the community people

<sup>19</sup> Local terms for different herbs and chemicals

depends on patients' satisfaction. She needs to treat each patient for three consecutive days to complete the course of treatment.

She gives care dawn to dusk every day except for Saturdays and Mondays. She starts from *Fazr* prayer. The special charismatic prayer (*Jhar-fuk*) works after *Fazr* prayer and it is a must for both the patient and herself to stay unwashed. She thinks that since all the treated patients get cured, they do not need to come to her afterwards and neither need follow-up with her in future. The treated patients send their friends and relatives to her for seeking care. She doesn't put pressure on anyone for paying for treatment. Those with mobile tooth and decayed gum are asked to seek professional care since she admits her inability of treating such cases. The patients were highly satisfied with her treatment.

**Her own story.** The lady has been treating patients for the last six years, since her mother-in-law died. Her mother-in-law passed-on the expertise to her before her death which includes the special incantation and also introduced her with the roots and rinds of trees. She said, "*Ami moroner shomoy amar boro cheler bou re shikhamu.*" (I will teach my elder daughter-in-law before I die.)

She has learnt from her mother in law, she will teach her daughter in law and so on. One of their ancestors claimed to have learnt these special charms through his dreams and since then the practice has been going on. This learning is purely for their family members and an asset for them. They will lose the influence of their learning if it is taught to outsiders. Neither she nor her forefathers ever had any professional degree on oral and dental health.

**Cross-checking the patients.** On examination, we found the first patient with swelling of the gum on upper left first molar tooth and he complained bleeding on cleaning and bad breath. Another one had complaint of toothache and sensitivity. I found them both having the history of smoking for a long time and chewing tobacco. Both of them had calculus with stain on teeth. We talked to each of them and tactfully tried to find out their knowledge on oral and dental hygiene. At one point they argued with us strongly that there is existence of tooth insect (*dater poka*), as they all have seen live insects taking out of the mouth. Even a school going boy was arguing with us in this regard.

On examination, the healer's oral and dental health was found with calculus (3+); stain in general, few mobile teeth and swollen gum. She gave history of chewing betel leaf and nut with *jorda* for ages.

**Comments.** This lady has inherited these special skills from her ancestors and also learnt their different charms and incantations. She prepares medicines from tree brunches and other locally and easily available ingredients. She has no training or specialization on dental and oral health. She removes caries ('Teeth insects', according to her) from tooth, and treats other dental problems. It can be said that the people in the villages are not at all aware of oral and dental health. Lack of knowledge and awareness, unavailability of dental professionals, the cost of dental

treatment, and also existing superstitions hinder general people from accessing professional practitioners. These non-professionals are always available, neither highly demanding nor they have any fixed rate for their treatment. Local people have unconditional faith on them and that is why people like this lady could run their fraudulent business efficiently.

**Case III. Mokhlesur Rahman of Seba Dental House, Gauripur Sadar**

**The physical set up.** A signboard was visible in Gauripur Moddhobazar, in the second floor of an old building. The signboard says, "All kinds of dental service including artificial prosthesis are provided here at reasonable price" (Fig. 14). The room was shabby, with no window, not enough artificial lighting even. He sits in a

**Figure 14. The Dental clinic**



chair which he uses as patient chair as well; all his instruments are kept on the table adjacent to it (Fig.15). No dental chair is there, a special kind of hand-piece was there with motor, which ends in a plastic tub for drainage of water. The room is partitioned with curtain and a bed was found on the other part. It was assumed that he lived in the same premises.

**Knowledge check.** He has been working as a dental practitioner for the last 5 years and has been working in Gauripur Moddhobazar for the last 2 years. He holds a diploma in dental training programme from Mymensingh. After passing SSC examination in 1999, he got admitted into the LMF training programme in Mymensingh where he studied for 16 months and obtained the diploma. He does not

**Figure 15. Instruments used for dental treatment by the non-professional practitioners**



know the name and number of tooth present in our mouth. He has a diary with extensive notes taken during the training sessions. But he could not recall the knowledge gained, could not recall the name of the instruments either. Neither he could specify the name of the filling materials he uses for different kind of filling nor could he mention properly the treatment needed for each problem.

**Mode of treatment.** People usually come to him with the complaint of toothache. He has arrangements for filling, extraction and denture preparation. He prescribes medicines to them after treatment, which are usually pain killer with peptic ulcer drugs and antibiotics.

He mixes simplex powder and simplex liquid (Fig. 16-1) together to make a paste and then put it in the decayed tooth. Simplex powder was common term used by many of the non-professional practitioners. The material resembles glass ionomer cement used for permanent filling in general dental practice. To mix the filling materials, he uses a sea shell and/or tea cup (Fig. 16-4) and a wax knife. Before he puts the filling material he cleans the cavity<sup>20</sup> with a wax knife.

Every day he works from 10 a.m. to 6 p.m. with 2 hours lunch break. He treats 5-7 patients per day which earns him approximately Tk. 400 per day.

He showed the artificial porcelain teeth, simplex powder and simplex liquid, a rasp and a porcelain tea cup to be used for preparing artificial dentures (Fig. 16). This simplex powder resembles alginate powder. No dental impression materials or clasp preparation materials were there which are essential in making a removable partial denture.

He takes impression from the mouth with a tooth and cuts it with a rasp until it fits the empty space inside a patient's mouth. Then mixes the simplex powder and liquid and sets in the empty space and once it is set properly he places the artificial tooth. That fills up the empty space in a patient's mouth. (The picture shows the steps and instruments used by him; Figure 16-1: simplex powder and liquid, Figure 16-2: the rasp, Figure 16-3: the denture base, and Figure 16-4: porcelain tea cup)

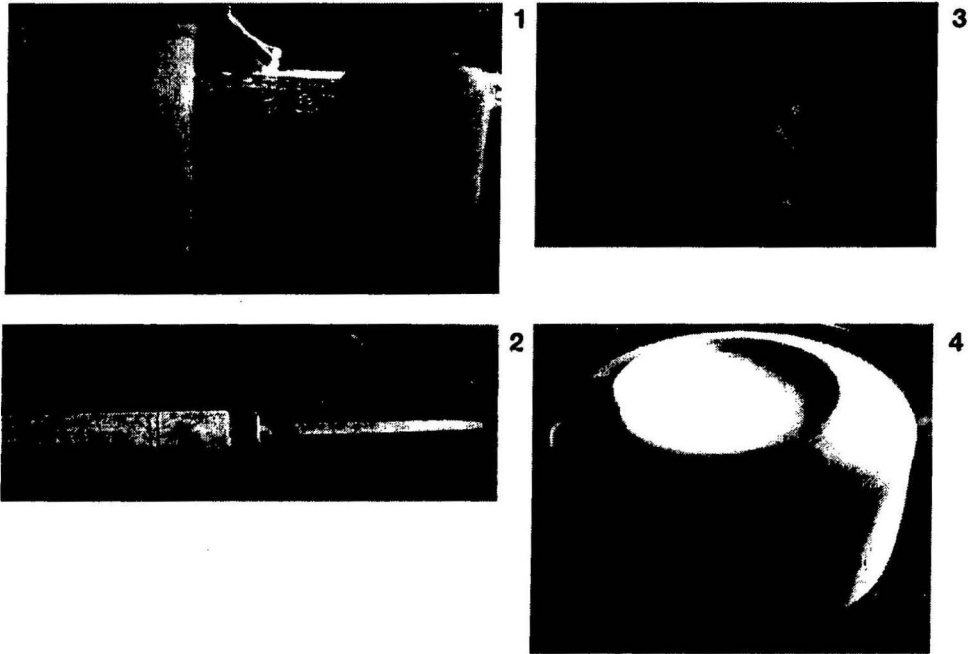
**Observation.** Coincidentally, a lady came with the complaint of toothache when the interview was going on. The provider (Mr. Rahman) was trying to clean the affected tooth of the patient with a hand-piece (self-made) without any anaesthesia. When the patient did not co-operate due to severe pain, he left that tooth and started treating another. He mixed some filling material and put in that tooth. The main complaining tooth was left untreated. He prescribed her some antibiotics and pain killers. The patient went away. After a while, the patient returned with some queries about post filling instructions. He advised her to eat regular meal and asked her to come after two days to treat the other tooth. The lady paid Tk. 50.

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<sup>20</sup> A cavity is a hole in the tooth that is caused by decay. Decay occurs when plaque, the sticky substance that forms on teeth, combines with the sugars and/or starches of the food we eat.



**Figure 16. The instruments used for denture preparation**



**Self oral hygiene.** He had visible stains in his teeth. So, he was asked about his hygiene practice. He showed a toothpaste which was given to him by the distributor free of cost for advertisement. But he never cleans with that; he cleans his teeth once a day, with *bidyut* tooth powder. He regularly smokes 7-8 sticks per day for the last 8-9 years.

**The set up.** A large (15'x20') room with good natural light, situated on the left side of entrance to the *Upazila* Health Complex of Gauripur is used as the dental clinic. A big size wooden table with a single chair for the dentist and another for the assistant is seen. One non-functional dental chair was seen, and a separate table for keeping instruments and dental materials and a steel almirah (wardrobe) were also present in the room. A separate unused store room was there. No hand-piece i.e., the micro-motor which is usually used for general dental treatment purpose was seen. Very little anaesthetic solution with a pack of needle and a metallic syringe were seen. There were very few elevators and forceps to be used during tooth extraction. There was no separate forceps for individual tooth neither for children. The dental assistant was carrying a register book, a mirror and a probe dipped into savlon solution in a tray. The surgeon was not there. He usually comes thrice a week from Mymensingh. But we could not find him in that week and the following week.

**The assistant's duty.** The assistant was asked about the patient flow and the care they provide. She keeps records of the patient's name, age, sex and chief complaints and prescribes medicines like antibiotic, pain killers and peptic ulcer drugs. She asks

them to come on the following day for treatment of the complaining tooth. She also informed us that the clinic is not provided with any kind of filling materials other than tooth extraction instruments.

**Observation.** The dental assistant was examining the patients with a mirror which is hardly in working condition. Only one mirror was there to check all the patients. She was sitting all the time in her chair and the examination was carried out while the patients were standing beside her (Fig. 17-2).

During our fieldwork over the week, we never found the dental surgeon. One experienced patient who was knowledgeable about the affairs of the UHC said, "How will he be here? He lives in Mymensingh, is it very easy to ride on a motorcycle everyday from here to Mymensingh? There is no local dental surgeon to give service from this health complex."

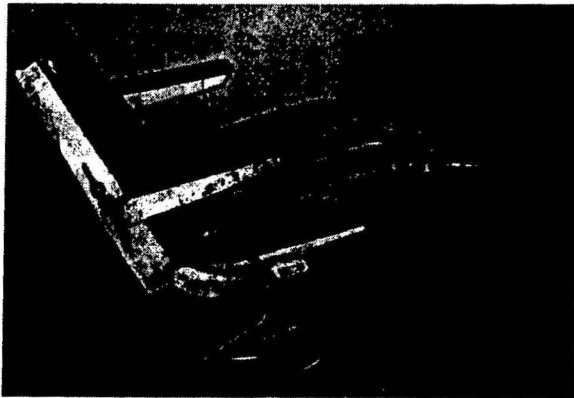
**Figure 17. The Upazila Health Complex in Gauripur – the Dental outdoor**



**1. Dental instruments**



**2. Dental assistant treating patients**



**3. Dental chair**

## Discussion and conclusion

There is lack of population-based data on the oral and dental health conditions of the population especially in the rural areas in Bangladesh, where there are few facilities which offer dental health services by qualified professionals. This survey was done to fill in this knowledge gap and inform the development of a preventive oral and dental health programme at the PHC level. Findings reveal poor oral and dental health condition of the survey population, their lack of knowledge and awareness conducive to good oral and dental health, and also, their reliance on informal sector providers for treatment of oral and dental health illnesses due to unavailability of qualified professionals.

From the survey, it became apparent that most of the people are ignorant about the importance of good oral and dental health, its relation to general health and the consequences of bad oral and dental health. This is reiterated by the findings from clinical examination on the condition of the oral cavity and the teeth. Their knowledge is influenced by the informal providers which is mostly harmful e.g., the notion that caries are produced by a kind of insect, that taking *Gul* (a form of tobacco) and chewing betel leaves and nuts can heal all forms of dental illnesses, etc. As a consequence, they neither maintain proper oral hygiene nor seek timely care for oral and dental health illnesses. This is not surprising because such poor level of knowledge on oral and dental health has also been observed even in enlightened populations like medical students in Rajasthan, India (Sharda and Shetty 2010) or qualified nurses in an English hospital (Adams 1996).

Oral hygiene practice is a neglected chore in the daily routine of the survey population as revealed through real life observation in the study. Interestingly, the people in the community hardly used tooth brush and/or tooth paste/powder. Instead, they used various abrasive materials like charcoal powder, branches of trees claimed to have medicinal properties, etc. for cleaning teeth which is damaging, and in turn, cause different oral and dental health problems. Finger was most frequently used for brushing and *meswak* occasionally. *Meswak* is advocated both for its religious and cultural connotations. A study done on Saudi population found no difference in plaque scores between *meswak* and tooth brush users, rather a positive association between the frequency of *meswak* and lesser need for periodontal treatment (Eid *et al.* 1990). The gender differential in frequency of brushing, flossing and use of *meswak* agrees with the trend found in other studies (Farsi *et al.* 2003) that, females use brushing more than males while males use *meswak* more than females. In the study, pregnant mothers were reported to be in the habit of chewing betel leaf for increasing appetite while recent research shows the association between maternal periodontitis and adverse pregnancy outcomes (Offenbacher *et al.* 1996).

Pain was found to be the main reason for visiting dental care practitioners which is plausible given the poor knowledge base regarding oral and dental health and the necessity of preventive check-up by a qualified professional, and is consistent with the literature (Rajab *et al.* 2002; Farsi, Farghaly, Farsi 2003, and Lissau, Holst and Feijs-Hasche 1990) analysed the relationship between dental health behaviour and periodontal disease. The results showed that dental health behaviour in children and adult were together responsible for 10-14% of the variance in level of periodontal disease indicator. Thus, subjects who had a low awareness of the disease process (low self-efficacy) did not recognize or seek action for prevention or active care when indicated (Persson *et al.* 1998).

The findings from this study may not be true for all of Bangladesh since it was confined to a particular area but it gives a fair indication of the state of the oral and dental health condition in the vast rural areas of the country. For identifying the specific conditions in specific locations such as the urban areas and different geographical areas (e.g., hill tracts region, remote and hard-to-reach areas), more exploration is needed for development of a need-based preventive programme.

### **Conclusion**

This study reveals the poor oral and dental health condition in a specific geographical region of the country which may be prevailing in the rural plain land of Bangladesh. Thus, an extensive oral and dental health education is needed to raise knowledge and awareness so as to internalize the preventive oral and dental health practices into daily life style of the population. More specifically, this intervention should emphasize the relationship between oral/dental health and general health, the necessity of maintaining good oral/dental health for overall well-being, proper way of brushing/cleaning teeth with proper material, preventive dental check-up once in a year, seeking care from qualified professionals when there is a problem, and should adopt a life-course approach to the issue.

## Recommendations

- Knowledge and attitude changes are pre-requisite for behavioural changes. Thus, for a good oral and dental health, the population need to be made aware and knowledgeable. This will inform and motivate them to practice preventive measures correctly. The messages should be disseminated using multiple medias (radio, TV, print media, popular theatre, folk songs, etc.), should be culture-sensitive, and discourage harmful beliefs and practices.
- A life-course perspective need to be undertaken for developing a preventive oral and dental health culture in the country. For this, targeting the young generation especially the school-going children in the society would help both directly, and also through their practices in the family. Thus, oral and dental health should form an important part of school health programme that BRAC is piloting now.
- Since there is lack of dental professionals in the community, BRAC can train the *shasthya kormis/shasthya sebikas*) on basic and preventive oral and dental health practices so that they can build awareness through disseminating information on regular oral healthcare, basic home-based care, possible consequences of untreated dental problems, difference between professional and non-professional practitioners, need of dental visits and need of proper oral hygiene, etc. They can teach the community how to brush teeth properly or motivate them to give up tobacco consumption for better and stronger teeth, etc. Screening for oral and dental health problems during community health worker's visits to the households will help identifying cases for referral. The issue can also be introduced in the health forums where people can discuss their problems.
- At a higher level, BRAC can think of developing dental health assistants through structured training to increase access to qualified care by the poorer section of the community.

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