OUTREACH REPORT FOR ORAL HEALTHCARE SERVICES AT KAMANGA HEALTH CENTER IN SENGEREMA DISTRICT MWANZA – TANZANIA

BY

TANZANIA HEALTH ENVIRONMENT AND DEVELOPMENT INITIATIVES (THEDI) IN PARTNERSHIP WITH CEDAR FOUNDATION TANZANIA

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Tanzania Health Environment and Development Initiatives

changing lives!

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Acknowledgements

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THEDI is committed to strengthen Public Private Partnership (PPP) to ensure limited resources are effectively utilized to save unleveraged population with limited access to oral health care services in rural communities in Tanzania Mainland and Zanzibar.

List of Abbreviations

ART	Atraumatic Restorative Technique
CO	Clinical Officer
DMO	District Medical Officer
DDS	Doctor of Dental Surgery
DMFT	Decay Missed Filled Teeth
DT	Dental Therapist
EEC	Early Enamel Caries
GIC	Glass Ionomer Cement
HBM	Health Belief Model
IEC	Information Education and Communication
ICT	Information and Communication Technology
MSc	Master of Science
NGO	Non Governmental Organization
ODK	Open Data Kit
PPP	Public Private Partnership
PA	Public Address
RCH	Reproductive and Child Health
SRP	Scaling and Root Planning
THEDI	Tanzania Health Environment and Development Initiatives
TDC	Tropical Disease Control

1.0 Introduction

Oral health is crucial for individuals' quality of life and overall well-being. It involves speaking, smiling, tasting, touching, chewing, swallowing, and conveying emotions through facial expressions (Lee JS, et al., 2018). Common oral diseases like dental caries and periodontal diseases cause long periods of suffering, but are not always fatal. Poor oral health also impacts general health, as dental treatment is expensive and affects government expenditure (Bajpai S et al., 2010). Cost-sharing for dental treatment may limit access to services, contributing to socio-disparities in health (Patrick DL et., al 2016). Poor oral health also hinders child growth and development by interfering with food intake and sleep.

Oral diseases are preventable through lifestyles that promote oral health (Watt RG, 2005). Key behaviors include daily tooth brushing, flossing, tooth picking, using fluoridated toothpaste, reducing sugar intake, stopping tobacco, and avoiding non-nutritive sucking (Petersen PE et., al 2005). Socio-economic status affects an individual's ability to adopt healthier lifestyles. Dental visits are crucial for early detection and treatment of dental diseases. A viable healthcare delivery system is essential to realize the benefits of dental visits. Dental caries and periodontal diseases are chronic and can go unnoticed for a long time without causing pain or discomfort sucking (Petersen PE et., al 2005), leading to untreated conditions. Dental checkups are crucial for maintaining oral health. Other less prevalent oral diseases, such as dental trauma, malocclusion, and fluorosis, can significantly impact an individual's quality of life. Understanding the occurrence of these conditions is crucial for planning access to quality oral health care (Locker D, 2000).

Evidence-based dental planning requires current, representative data from the target community. As lifestyles change, new data sets are needed to monitor trends in oral health to address dental diseases and caries in the target community. Tanzania Health Environment and Development Initiatives (THEDI) jointly with Cedar Foundation Tanzania conducted an outreach mission to provide oral healthcare services at Kamanga Health Center in Sengerema district, Mwanza region Tanzania.

This report provides the overview of the organization of the outreach mission and the findings of assessment of the oral health knowledge, attitude and practice. Further the report portrays the oral health care with respect to examinations of oral health conditions and treatment.

2.0 Catchment Area

Outreach service was conducted at Kamanga Health Center located at Kamanga village Nyamatongo ward, Sengerema district. Kamanga Health Center was established by Cedar Foundation Tanzania following the study conducted in 2015 on the exploration of social economic baseline information of residents of Kamanga village. Kamanga is a village among other 3 villages in the Nyamatongo ward of the Sengerema district; other villages are Nyamatongo, Karumo and Kabusuli. Kamanga is situated on the shores of Lake Victoria, opposite the city of Mwanza. The study revealed that, despite its proximity to Mwanza, Kamanga lacks basic services, such as healthcare, and residents have only limited economic opportunities.

3.0 Rationale of the Outreach Mission

Cedar Foundation and Sengerema district council jointly operates Kamanga Health Center since 2018. According to the national census report of 2022, the facility serves a total population of 16,414 of them 8,084 and 8,330 male and female respectively. Kamanga Health Center offers basic health services, except for oral health care. Dental professionals like Dental Therapists, Assistant Dental Officers, and Doctors of Dental Surgery are not available, causing people in the catchment area to be deprived of these essential services. Lack of oral health services reported to have adverse effects as they remained untreated as a result to pain leading to failure to attend school and other economic activities for school children and adults, pain leading to inability to eat leading to poor nutrition especially in children, bad mouth breath (halitosis), and lack of self-esteem especially with poor teeth arrangement.

4.0 Organization of the Outreach Mission

Tanzania Health Environment and Development Initiatives (THEDI) and Cedar Foundation Tanzania organized an outreach mission to strengthen -Public Private Partnerships (PPP) and achieve impactful initiatives. THEDI is a local NGO, established under the Non-Governmental Organization Act of 2002, collaborates with the government and stakeholders to ensure sustainability of national strategies and programs, focusing on public health, environmental management, gender inclusion, monitoring, evaluation, learning, information communication, and community development.

The Cedar Foundation Limited, a not-for-profit company, was incorporated in 2014 under the Tanzania Companies Act 2002. Its headquarters are in Bulgaria, offering services to help people with disabilities reach their potential and integrate into their communities. These services include living and accommodation support, employment, education, and training, as well as opportunities for community involvement, friendship building, and exploring local opportunities.

5.0 Outreach Mission Objectives

5.1 Broad Objective

The outreach mission aimed to investigate oral health knowledge, attitude, behavior, and overall oral health status in Nyamatogo ward in Sengerema district, and provide basic oral health care services for consecutive three days from 24 to 26 of July 2023.

5.2 Specific Objectives

Specifically the outreach mission aimed to:

1. Investigate the oral health status
    a. Assessing dental caries experience and periodontal health
    b. Assess oral health conditions like infections, tumors, fractures, anomalies, and malocclusions.
2. Gather information on oral health symptoms, knowledge, attitude, and behavior.
3. Offer basic oral healthcare to those experiencing oral health issues.
4. Raise awareness about oral health and provide oral health education.
5. Suggest referral for the patients who needs specialty and high level oral health management

6.0 Outreach Mission Approach

Community sensitization was conducted in a week before the starts date of the outreach mission in order to inform the communities and raise awareness. Trusted local channels were used; including the PA system, community leaders, Community Health Workers, RCH, religion leaders, and posters to all prominent public places. The outreach mission involved the following components and activities:

1. Data collection through questionnaires (documentation)
2. Clinical examinations (screening of all patients presented with oral problems)
3. Provision of oral health education based on specific oral condition
4. Treatment for treatable oral health conditions
5. Referral to higher hospitals for management and expertise

6.1 Data Collection

A questionnaire was developed to assess oral health symptoms, oral health knowledge, oral health attitude, oral health behavior, and personal information.

- Oral health knowledge was assessed by responding to questions on the causes and prevention of dental caries and the causes and prevention of periodontal diseases.
- Oral health attitude was assessed based on Health Belief Model (HBM). According to the HBM as applied to oral health education, when individuals find themselves susceptible to oral health problems and understand the severity of such problems, they will be more likely to adopt recommended oral health behaviors.

- Assessment of oral health behavior focused on dental attendance pattern through assessing time of last dental visit and reason for last dental attendance and basic oral care practices.

6.2 Clinical Oral Status Assessment

The oral health status (dental caries status and periodontal status) was assessed using the method and materials as prescribed by the World Health Organization basic oral health survey. DMFT index was used to assess the number of Decayed teeth, Missing teeth (due to caries) and Filled teeth. Periodontal status was assessed by using the Community Periodontal Index.

6.3 Oral Health Education

Oral health education was provided during the outreach mission to specific oral condition presented. Oral health education aid materials were distributed, including the flies, leaflets, banners and posters. Basic oral health education materials focused on dental caries, periodontal diseases, dental trauma, oral cancers, and practicing good oral health like good oral hygiene with regular brushing and flossing, eating and drinking healthy foods low in sugar. Questions and Answers (Q&A) methodology will be used to allow interactive leaning session.

6.4 Provision of Oral Healthcare Service

THEDI and Cedar ensured the availability of all portable dental equipments and disposable materials. Experts discussed treatment needed according to the treatment plan for every patient accordingly. A universal protocol for infection control was adhered throughout the delivery of oral healthcare by autoclaving instruments and disinfecting the working area in intervals. Among of the basic oral health care which provided during the outreach days were oral hygiene instructions and demonstration, fluoride gel application, caries stabilization, scaling, simple restorations and extractions.

7.0 Findings

7.1 Respondents Characteristics

A total of 93 local residents of Nyamatongo ward attended for the dental examination and treatment during the oral health outreach mission. Among the 93 respondents, 66 (71%) were females and 25 (29%) were males. Of the total respondents, their age group ranged from 5 to over 50 years of age, 26.9% of them were under the age group 11-20 years, 18.6% were above 50 years. Majority of the respondents 61% completed primary education and 14% completed ordinary level secondary education. Of the respondents 39% and 30% reported to be engaged in small business and farmers as their economic activities respectively.

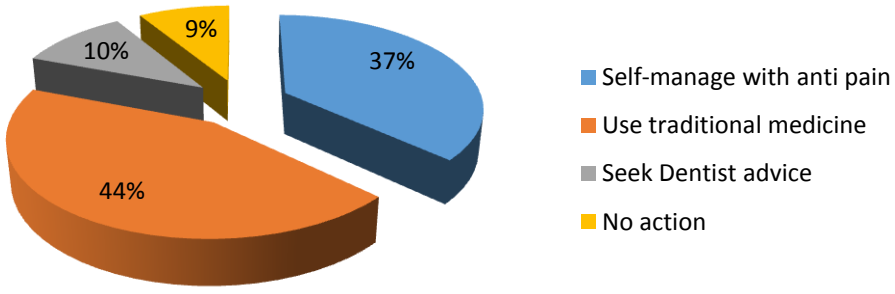
7.2 Assessment of Oral Health Knowledge, Attitude and Practice

Respondents were assessed to understand their knowledge, attitude and practice with respect to oral health. Prior receiving oral health care services, respondents were randomly selected to respond to questions. Among of 93 respondents attended the oral health care during the outreach mission, 57 (53%) were included in the assessment. A questionnaire was developed and embarked into the ODK application. The questionnaire was divided in 4 sections, where as section A comprised the demographic characteristics of the respondents, section B comprises the questions to assess oral health knowledge, section C the questions to assess the oral health attitude and section D the assessment of oral health practice.

7.2.1 Experience on Oral Health Problems and Management

All respondents included in the assessment 57(100%) reported to experience dental problems over the past 12 months. Of them 44% self-managed their dental problem using traditional medicine and 37% using anti pain. Only 10% reported to seek advices from dentists and 9% did not take any action. See the figure 1 below.

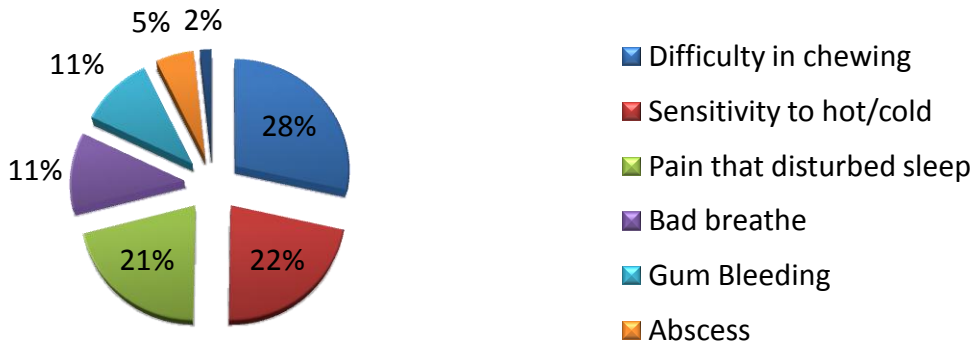
Figure 1: Action taken during dental problem



7.2.2 Common Oral Health Problems

Respondents were asked on the signs and symptoms they experienced with respect to their oral health conditions presented during the outreach mission. About 28% of respondents reported to experience difficult in chewing while 22% and 21% reported to have sensitive to hot or cold intake and pain that disturb sleep respectively. In additional, 11% had experienced gum bleeding and whereas 11% also reported to experience bad breathe. See figure 2 below

Figure 2: Oral health problems reported



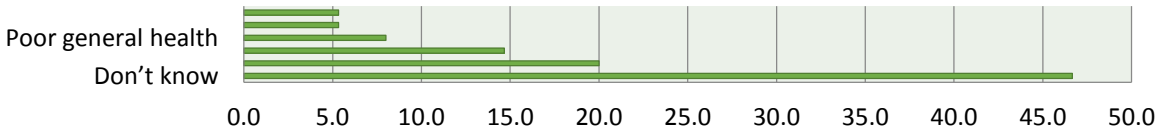
7.3 Oral Health Knowledge

Respondents were asked to mention factors causing teeth decay and appropriate preventive measures they know.

7.3.1 Factors Causing Teeth Decay

More than 46% of the respondents lack oral health knowledge with respect to the factors leading to teeth decay. Only 20% and 14.7% of the respondents mentioned that eating too much sweet food and improper cleaning can cause teeth decay respectively. See figure 3 below.

Figure 3: Factors causing teeth decay

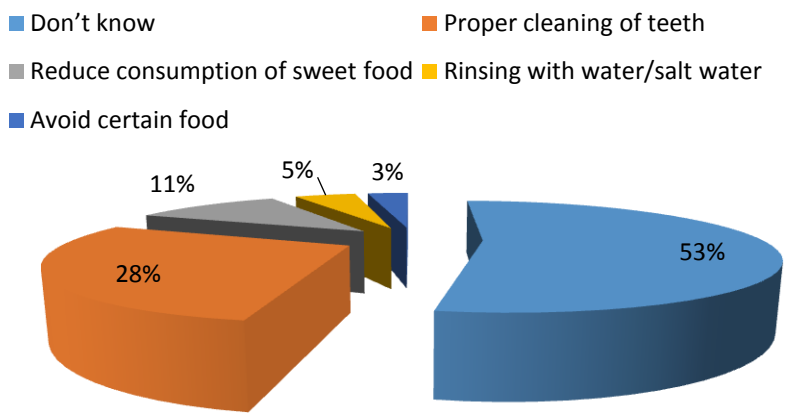


	Don't know	Eating too much sweet food	Improper cleaning of teeth	Poor general health	Dental bacteria	Sour food
Percentage	46.7	20.0	14.7	8.0	5.3	5.3

7.3.2 Preventive Measures for Teeth Decay

More than half 53% of respondents lack knowledge on preventive measures for teeth decay. Only 28.1% believe that proper cleaning is effective, and 10.9% suggested reducing sweet food consumption is vital for preventing teeth decay. See figure 4 below.

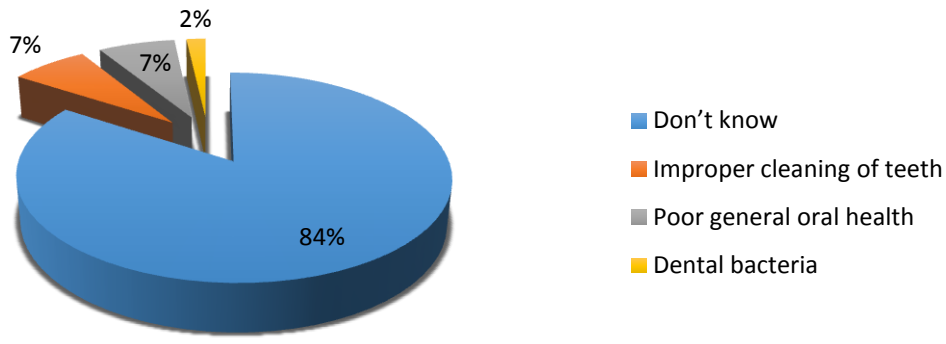
Figure 4: Preventive measures for teeth dacay



7.3.3 Factors Causing Gum Diseases

The findings shows that of the total respondents 84% revealed that they lack knowledge on the factors causing gum diseases. Only 7% and 7% responded that improper cleaning of teeth and poor general oral health can cause gum diseases respectively. See figure 5 below.

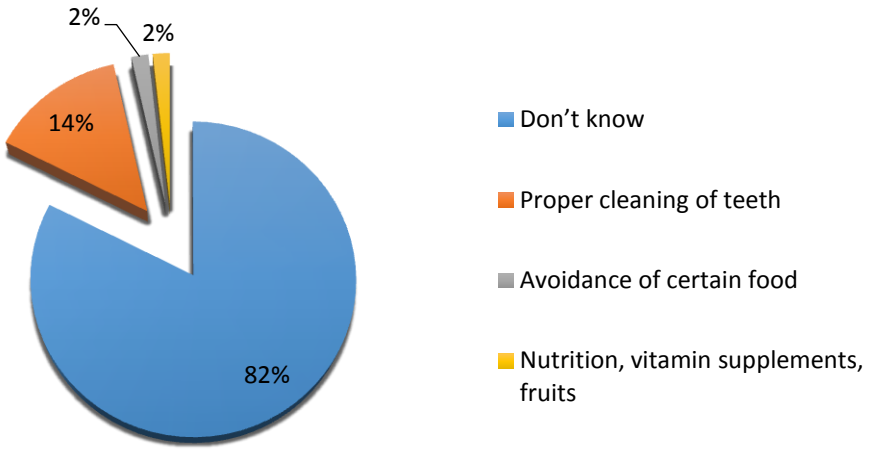
Figure 5: Factors causing gum disease



7.3.4 Preventive Measures for Gum Disease

A total of 82% of respondents lack the understanding of preventive measures for gum diseases, while only 14% believe proper tooth cleaning prevents them. See figure 6 below.

Figure 6: Preventive measures for gum disease



7.4 Oral Health Attitude

Majority of the respondents have positive attitude towards their oral health. Among of the positive attitude was revealed on the practice of dental cleaning, materials used for tooth brushing, the importance of fluoride containing toothpaste helps in prevention of tooth decay as well as frequency and duration for teeth brushing. Further, positive attitude revealed on the understanding that tobacco chewing, smoking and consumption of alcohol may cause oral problems. However, they show a negative attitude on the importance of dentist in prevention of dental problem, they also believe that the state of the teeth is decided at birth and is not related to self-care. Further, they tend not to believe that flossing should be done at least once daily, most of them acknowledge doing this frequently in a day. See figure 7 below.

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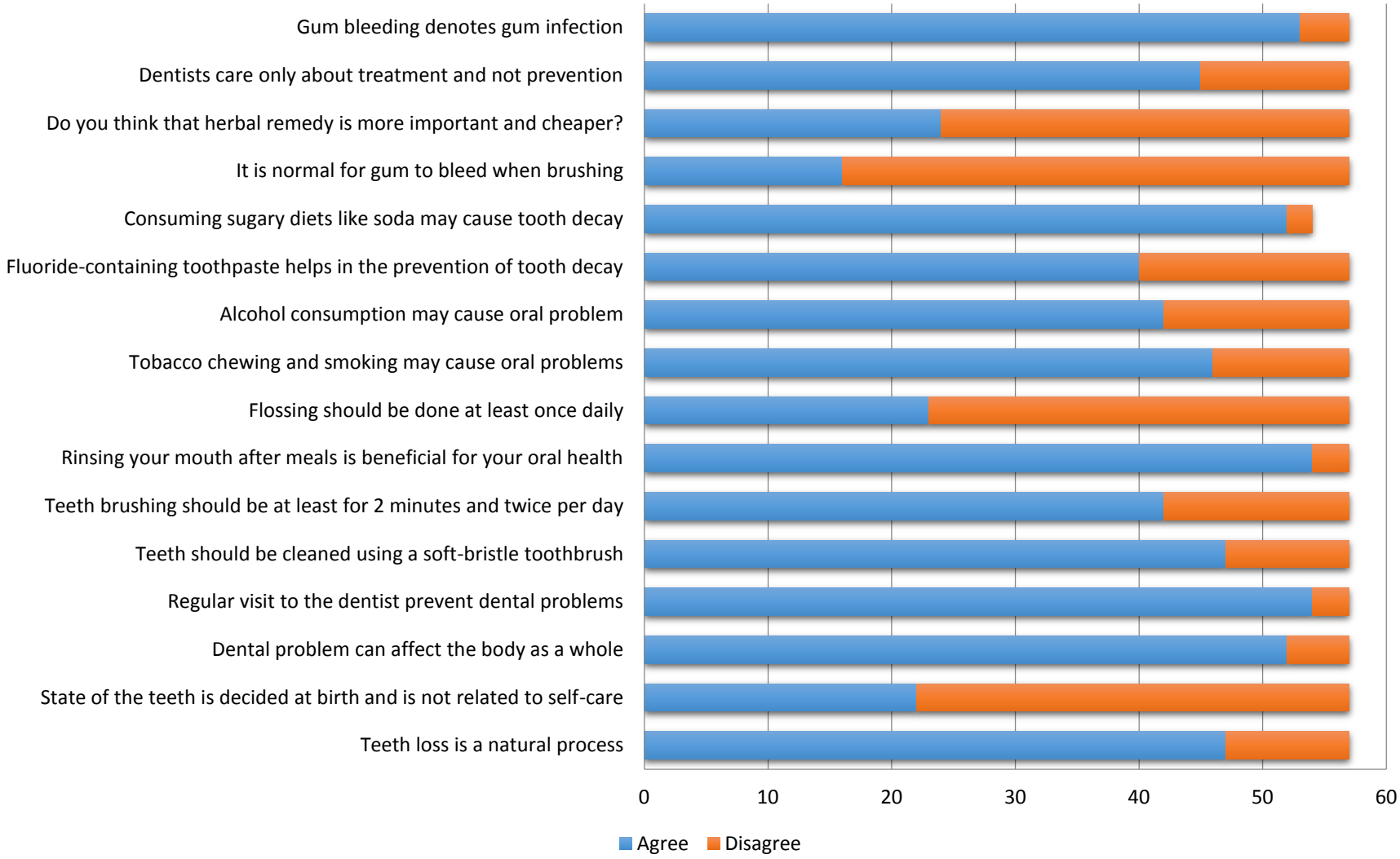
Figure 7: Oral health Attitude



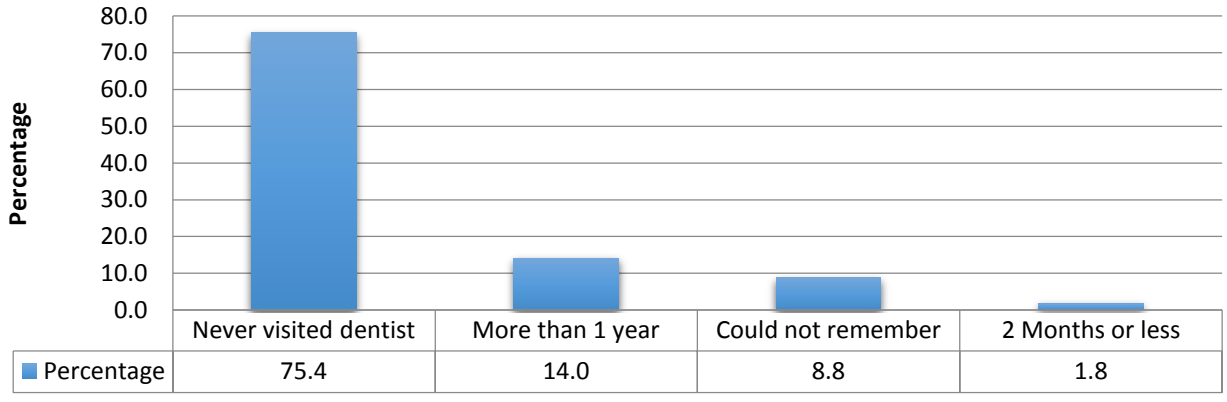
7.5 Oral Health Behavior

Respondents were also assessed on their oral health seeking behavior and basic oral health care practices.

7.5.1 Oral Health Seeking Behavior

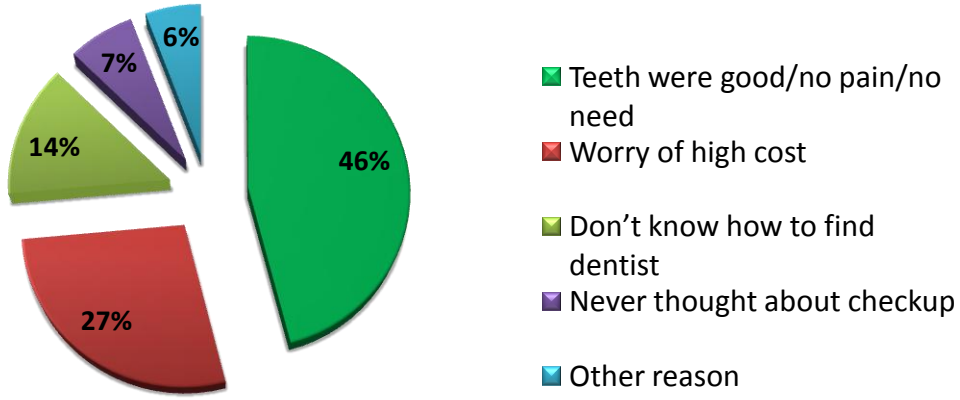
The majority of respondents (98.2%) did not have a routine visit for dental care service for checkups, whereas 75.4% never had a dental care service visit in the past 12 months. Only 14% reported to have visited a dentist for dental care services in more than one year ago. Reasons for not visiting dental care included 46% not seeing the reason to visit, 27% being worried about costs, and 14% they don't know how and where to find the dentists and 8.8% could not remember when was their last visit. See figure 8 and 9 below.

Figure 8: Last visit for dental care



	Never visited dentist	More than 1 year	Could not remember	2 Months or less
Percentage	75.4	14.0	8.8	1.8

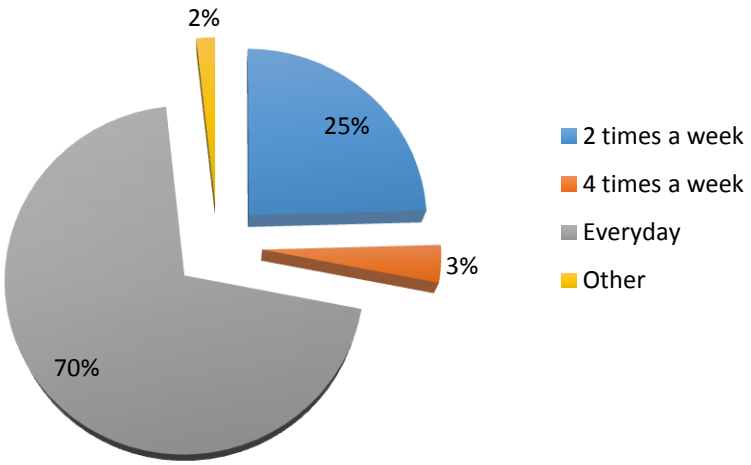
Figure 9: Reasons for not visiting dentist for dental checkup



7.5.2 Sugary Food Intake Frequency and Types

Most of respondents 70% reported to eat sugary food every day, where as 25% only 2 times a week and only 2% use a sugary food twice a week. Among the sugary food reported by respondents include tea 31%, soda 31% and sweets 21%. See 10 figure below.

Figure 10: Proportional of sugary food intake



7.5.3 Oral Health Behavior and Practice

Table 1 portrays the respondents' oral health practices. Results show that majority of the respondents 67.1% reported to use a soft-bristle toothbrush and only 31.6% reported to use soft wood toothbrush. Furthermore, only 29.8% and 35.1% knew that teeth brushing should be done for at least 2mins and twice per day respectively. However, majority of respondents 45.6% reported that teeth brushing should be done only once a day though 73.7% understand that appropriate time for tooth brushing should be done preferably morning before a meal and in the evening before going to bed.

In additional, most of the respondent 94.7% confirmed to use toothpaste during tooth brushing, however 77.2% of respondents do not know whether the toothpaste they use contain Fluoride. Majority of the respondents 93% reported to brush their teeth horizontally only, 3.5% brush their teeth up and down and another 3.5% reported to brush their teeth both horizontally and vertically.

Table 1: Respondents oral health practices

Variables	No of Responses	%
Materials used for teeth cleaning (n=76)		
A soft-bristle toothbrush	51	67.1
Soft wood toothbrush	24	31.6
Others	1	1.3
	76	**100.0**
Time spent to clean their teeth (n=57)		
More than 2 minutes	17	29.8
Don't know	15	26.3
30 seconds	10	17.5
2 minutes	9	15.8
1 minutes	6	10.5
	57	**100.0**
Frequency used to clean their teeth (n=57)		
Once a day	26	45.6
Twice a day	20	35.1
More than twice a day	11	19.3
	57	100.0
Appropriate time to brush their teeth (n=57)		
Morning before a meal and evening before bed	42	73.7
Morning before a meal, afternoon after lunch and evening before bed	13	22.8
Before and after lunch in the afternoon	1	1.8
Anytime you wish to brush	1	1.8
	57	100.0
Use of toothpaste when brushing their teeth (n=57)		
Yes	54	94.7
No	3	5.3
	57	**100.0**
Understanding whether toothpaste contain Fluoride (n=57)		
I don't Know	44	77.2
Yes	13	22.8
	57	**100.0**
How they brush their teeth (n=57)		
Both horizontally and vertically	2	3.5
Horizontally only	53	93.0
Vertically (up and down) only	2	3.5
	57	**100.0**

7.6 Dental Caries Experience

In a period of three days, the team managed to screen a total of 93 people of which majority 67 (72%) were females. Screening depended on DMFT as a guide, and the following were the findings

7.6.1 Decayed Teeth

On screening, 84 people (90%) had dental caries whereas only 9 people (10%) were found without any carious tooth. The dental caries experience was more noted in females than males 71% and 29% respectively.

7.6.2 Missing Teeth

On screening, about 33% of the screened people were missing at least one tooth and more. Of these, 23 were females and 10 males. Further analysis revealed that 19 people were missing 1-3 teeth, 7 people were missing 4-6 teeth while 3 people were missing more than 7 teeth.

7.6.3 Filled Teeth

Screening revealed that no any person had any of his/her tooth filled.

7.7 Periodontal Status

Screening team also focused of the periodontal condition in which 42 people (45%) had periodontal conditions while 51 people had healthy periodontium. Other oral conditions were also encountered during screening whereby 3 people had dental abscess, one participant had two peg laterals and a three-month female baby was presented by her mother complaining of plastic teeth.

7.8 Treatment Provision

Treatment was focused on the following treatment modalities: Oral Health Education and teeth brushing demonstration, extractions, Scaling and root planning, filling (ART), Counseling/reassurance and referral for further management. After screening, a total of 66 (70%) patients benefited from extraction of root remnants and 3 patients who had developed dental abscess had tooth extraction and I&D was done and antibiotics and analgesics were prescribed for pain relief. Two (2) out of 42 (2/42) patients who had moderate plaque and calculus benefited from Scaling and Root Planning (SRP). During our mission we had GIC for Atraumatic Restorative Technique (ART) where patients with Early Enamel Caries (EEC) had their teeth filled, a total of 14/84 (16%) patients had their teeth filled by ART.

One baby, whose mother was complaining of plastic teeth, was counseled on the same and reassured that it is just a myth and that her baby would be fine after treating diarrhea which was also revealed during our history taking. The baby was referred to a Medical Doctor for management of diarrhea. Due to the outreach context, the team lacked a dental chair for filling, extraction of impacted teeth, scaling and root planning for those with severe periodontal conditions hence we opted to offer referral further dental treatment. A total of 63/93 patients (67%) were referred for different treatment options such as filling, extractions, SRP and disimpaction.

8.0 Discussion

The finding of this assessment suggests that the majority of the respondents experienced oral health problems though their oral health care seeking behavior is very low due to various factors. Most of respondents revealed that they don't see the importance of visiting Dentist for check up while they don't have any oral health conditions. Also high costs for accessing the oral health care seem to be of concern. These factors accelerate self management of oral health problem. The finding shows that self management using traditional medicine and anti pain is very high 44% and 37% respectively. Further, the finding shows that the level of knowledge with respect to the factors causing dental decay and the preventive measures seen to be low. In additional, majority of respondents 84% have very low knowledge with respect to factors causing gum disease and 82% they don't know the preventive measures.

Majority of the respondents have positive attitude towards their oral health. Among of the positive attitude was revealed on the practice of dental cleaning, materials used for tooth brushing, the importance of fluoride containing toothpaste helps in prevention of tooth decay as well as frequency and duration for teeth brushing. Most of the respondents revealed to use toothpaste and admitted that fluoride could prevent teeth decay. However, more than 77% they don't know whether the toothpaste they are using contain fluoride.

Majority understand that tooth brushing should be done at least twice a day and appropriate time should be morning before any meal and evening before going to bed however, more than 45% reported that teeth brushing should be done only once a day. This is important given that a good knowledge of oral health is necessary to pursue healthy oral practices. The results notwithstanding, it is important that the population should be educated on all aspects of oral health rather than on a single or few issues.

Following screening, majority of the participants 84% had dental caries. About 33% of participants were missing at least one tooth; nineteen (19) participants were missing between 1-3 teeth. No any of the participants was found to have any filled tooth, this depicts that the only treatment option for this community is extraction and not teeth restoration. Periodontal conditions were found among 42 (45%) participants. Other oral conditions that were found included: dental abscess (2), peg laterals (1) and plastic teeth myth (1).

During treatment, majority of the patients benefited from extraction 66 (70%) where most of the extracted teeth were root remnants and dental abscess. Atraumatic Restorative Technique (ART) was employed in filling teeth with Early Enamel caries (EEC) where Glass Ionomer Cement (GIC) was applied, only 14/84 patients benefited from ART.

A three months who was brought with a chief complaint of plastic teeth, her mother was counseled on what caused the signs and symptoms in her baby, then she was reassured that the baby will be

fine after treating diarrhea and plastic teeth are not there but it is just a myth. Cases/Diagnosis (63/93) that were not managed under outreach context, were referred for further dental examinations and treatment.

9.0 Conclusion and Recommendation

The team gained firsthand experience in delivering oral health care services in an outreach capacity, despite the challenges of limited equipment and time. This experience helped them understand the prevalence of oral health conditions and dental care demands among rural communities, and the valuable role dentists can play. Among the community members came for the oral health care service, they generally had poor oral health knowledge, high level of dental decay and periodontal and very few of them had irregular dental visits. Community revealed to have positive attitude towards oral health practice. Health practitioners need to change the public perception of oral health as many people do not consider oral health important to their overall health and fail to understand the role it plays in preventing future diseases.

The team was able to provide basic oral health care services to the community during the 3 days of outreach, however, the time was very limited as some of the community members presented oral health problem were not attended in the last day. It is therefore recommended:

- Community are in need of the oral health care, though are very limited, thus an outreach should be seen as the immediate solution while the government plan for sustainable solution.
- There is a need to look into possibilities to increase access to oral health services at least on every hospital and health center in the district to increase access in terms of reduced travel distance
- The community to be mobilized and own health insurances to counter challenge the gap of affordability
- The government and donor community to be mobilized to invest more in oral health services.
- School and community oral health promotion should be designed and implemented to prevent oral health problems at very early age. If public health specialists effectively communicate the importance of oral health and its impact on the body, it will encourage people to visit the dentist and thus prevent future diseases.

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