CARE Givers’ Attitude on the Oral Hygiene Status and Treatment Needs of Their Children Aged Between 6-10 Years Attending the University of Nairobi, Dental Hospital and Kenyatta National Hospital, Dental Clinic.

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ABBREVIATIONS AND DEFINITIONS

BDS: Bachelor of Dental Surgery.

UONDH: University of Nairobi Dental hospital.

KNHDC: Kenyatta National Hospital Dental Clinic.

DMFT: Decayed Missing Filled Teeth.

SPSS: Statistical Package of Social Sciences.

ADA: American Dental Association.

WHO: World Health Organization.

ORI: Oral Rating Index.

H₀: Null Hypothesis.

Hₐ: Alternative Hypothesis.
ABSTRACT

Background. Care givers have an important role in making decisions about their children's oral hygiene. With the modern development of foods and drinks in the twenty first century, care givers' attitude towards their children's oral hygiene and dental treatment needs, need to be improved. Previous studies have shown that this is a major problem due to poor preventive measures and poor financial status especially in the third world countries.

Objective. This study aims to investigate care givers' attitude towards their children's oral hygiene status and treatment needs.

Study area. This study will be carried out at the UONDH and KNHDC, located within the city of Nairobi.

Study design and sample size. Clinical examination forms will be used to assess and record the oral hygiene of the children samples. A questionnaire will be filled by both the caregiver and their children aged between 6-10 years old and returned on the same day. A sample size of 130 children will be used.

Data collection instruments and technique. A different sterile tray will be used for each clinical examination. Plaque score, DMFT values and gingival index of the pediatric patients will be recorded after a full mouth examination is performed by the investigator.

Data analysis and presentation. SPSS will be used for analysis of the data collected. All variables mentioned will be analyzed and recorded. Data collected shall be represented in form of descriptive statistics, frequency tables, graph histograms and pie charts.
Perceived benefits. The results from the study maybe used in determining how much emphasis should be placed on care giver’s attitudes towards their children’s oral hygiene and treatment needs.
Oral hygiene is the practice of keeping the mouth clean by brushing and flossing to prevent tooth decay and gum disease (ADA)\(^1\). The purpose of oral hygiene is to prevent the build-up of plaque, a sticky film of bacteria and food that forms on the teeth. Plaque adheres to the crevices and fissures of the teeth and generates acids that, when not removed on a regular basis, slowly eat away, or decay, the protective enamel surface of the teeth, causing holes (cavities) to form. Plaque also irritates gums and can lead to gum disease (periodontal disease) and tooth loss.

Each parentally linked factor, such as parents' oral hygiene knowledge, and attitudes, may be considered to shape the oral hygiene behaviors of their children. In the context of a family, children should not be considered merely as passive recipients of care in everyday routines of hygiene action, because they play an active role in making healthful choices [Christensen, 2004]\(^2\). In their role as hygiene-promoters, they can contribute to healthy activities in the family. Thus, the family should promote children’s oral hygiene as well as their children’s development of a healthy lifestyle.

Many children have treatment needs related to dental caries and periodontal disease. Oral hygiene instructions and procedures are crucial steps of the treatment therapy. This can only be provided by a qualified dental practitioner, which often goes overlooked, especially by the caregivers. If a child has had a long history of poor oral hygiene, it is almost impossible to change that person into someone who meticulously cleans his or her teeth. This same difficulty is present in any behavioral change situation in all aspects of life.

Maintaining oral hygiene is a life long habit. Behavioral change is effected primarily by education, and this must be a major part of any attempt to change oral hygiene. If caregivers understand the reasons for suggested changes in oral hygiene behavior, and the consequences of continuing poor oral hygiene
conditions, the potential for attitude change is greatly improved, therefore changing their children’s behavior towards their oral hygiene.

A child’s behavior is completely dependent on the caregiver’s reactions (praise, love) and therefore the behavior will tend to be in a way that secures positive attitudes. If caregivers praise a child if it accepts for example, tooth brushing, the child will e.g. reward which strengthens the attitude towards and acceptance of the behavior demanded.

Recent data reveals that children in the lowest socio-economic quartile experience almost twice as many caries as those children in the highest socio-economic quartile (AHMAC, 2001). These high-risk children live in more materially deprived neighborhoods, tend to have caregivers with lower educational levels, have diets high in sugary foods and drinks, and brush their teeth less often (Pine, 2000). This is also the case in children from Indigenous backgrounds who are likely to experience twice the caries rates of non-Indigenous children together with particularly high levels of untreated decay (AIHW, 2003).
2.0 LITERATURE REVIEW

Children learn all their essential lessons in life from their caregivers. In most societies, children are taught to always use toothpaste when brushing their teeth, a basic oral hygiene practice. Toothpaste companies like Colgate and Aquafresh even make toothpaste intentionally directed towards children. They make sweet tasting toothpaste with cartoon characters on the tubes so that children would always look forward to brushing their teeth.

In the early education of Japanese, children are not reinforced by caregivers and teachers to brush with toothpaste. Japanese youths are also not encouraged to visit dentists regularly. They resort to the dentist when they have toothaches. It is these colloquial sentiments towards dental hygiene that create a difference in the outcome. It is the lessons and customs that we are given as children that lead us to our dental future. In a study conducted in Jordan on oral health behavior of school children and caregivers, it was shown that there was a discrepancy between dental knowledge and attitudes of caregivers and oral health care practices indicating the need for oral health education (L.D. Rajab)\textsuperscript{6}.

Cleaning teeth at least twice a day is a simple intervention that can have a very positive effect on the oral hygiene of children. Evidence suggests that such strategies have mixed success in changing tooth brushing practice in the long term in older children. A recent study into the effects of tooth brushing behavior and habit strengths in Holland revealed that during the intervention period, brushing teeth at school resulted in a significant increase in the frequency of tooth brushing. However, these effects were not maintained in a one-year follow up (Wind, 2005)\textsuperscript{7}. Therefore, simple tooth brushing instruction is not enough for older children. Caregivers should maintain accurate and thorough assessment of their children's oral hygiene status.

A study done in Hiroshima, Japan to investigate the simultaneous interrelationships between caregivers oral health behavior and oral hygiene status of their school-going children, where 296 pairs of
care givers were used (M.Okada et al)\textsuperscript{8}. Dental examination of the children was done using WHO criteria for DMFT. The ORI for children was used for the child’s gingival health exam. The study showed that there was a significant correlation between DMFT and ORI and also showed that care givers oral health behavior had a significant direct effect on their children’s DMFT. Mothers' own oral self-care behavior has a clear positive influence on their children's tooth-brushing behavior and on their dental health [Okada et al., 2002; Saied-Moallemi et al., 2007]\textsuperscript{9}. The presence of desirable oral hygiene practice among those with positive attitudes suggests that good oral hygiene habits interact with attitudes towards oral hygiene [Freeman and Linden, 1995]\textsuperscript{10}.

A recommended intervention comes from Australia. Smiles 4 Miles is a state wide oral health promotion initiative targeted at preschool aged children. The program is based on the Health Promoting Schools framework formulated by the WHO (Dental Health Services Victoria, 2008)\textsuperscript{11}. Smiles 4 Miles encourages close collaboration between local preschools and care givers groups to develop healthy policy and practices, such as promoting water rather than sweet drinks (Drink Well) increasing the consumption of fruit and vegetables rather than pre-packaged snacks (Eat Well) and encouraging good oral hygiene (Clean Well). These initiatives are designed to promote a healthy environment for the children at preschool as well as encourage change at home.

An initiative combining a school and home based approach was trialed on children in China. In the intervention group, teachers educated care givers about the importance of maintaining oral hygiene using a multi-media presentation at semi-annual care givers-teacher evenings. Care givers were also asked to ensure that their children brushed their teeth before bedtime. This was supplemented in school with supervised tooth brushing twice a day for the intervention group. After two years, the children in the intervention group had significantly less caries development than those in the control group. (Rong, 2003)\textsuperscript{12}.
3.0 PROBLEM STATEMENT

Oral hygiene status of children is deteriorating with each passing day, especially in the third world countries. It has been reported in other countries that the care giver’s attitude impacts negatively on the oral hygiene status and their treatment needs. There are no studies which have been done to investigate any influence, if any, of the care givers attitude towards the oral hygiene status and the treatment needs of adolescents. This knowledge may be used to improve the care giver’s attitude towards the oral hygiene and treatment needs of the adolescents.

4.0 JUSTIFICATION

• There is a need to prevent the high level of oral diseases which should start with the care givers attitudes.

• Care givers should be educated on the importance of treatment needs concerning their children’s oral health.

• Care givers have little knowledge on their effect on their children’s oral hygiene.

• No study has been carried out to determine care givers attitudes on their children’s oral hygiene.
5.0 OBJECTIVES

5.5.1 Main objective

Determine the care giver's attitude towards the oral hygiene status and treatment needs of their 6-10 year old children attending the UONDH and KNHDC.

5.5.2 Specific objectives

- To determine the oral hygiene status and treatment needs of the 6-10 year olds attending the UONDH and KNHDC.
- To determine the care giver's attitude towards the dental treatment needs of the 6-10 year olds.
- To compare the oral hygiene status of the children and the care giver's attitude.

6.0 RESEARCH HYPOTHESIS

Null Hypothesis

H₀: There is no association between the oral hygiene status of the children aged 6-10 years and their care giver's attitude.

H₁: There is no association between the treatment needs of the children aged 6-10 years and their caregivers attitude.

Alternative Hypothesis

Hₐ: There is an association between the oral hygiene status of the children aged 6-10 years and their care giver's attitude.
H$_2$: There is an association between the treatment needs of the children aged 6-10 years and their caregivers' attitude.

7.0 VARIABLES

7.7.1 Independent variables

- Ethnicity
- Residence
- Number of children
- Sex of the child
- Accessibility to dental care
- Exposure to dental education

7.7.2 Dependent variables

- Age of the child
- Attitude of the caregiver
- Attitude of the child
- Oral hygiene status of the child
- Illiterate caregivers
8.0 MATERIALS AND METHODS

8.8.1 Study area

This study will be carried out at the UONDH and KNHDC, both located within the city of Nairobi, a geographically, centrally placed city in Kenya with an estimated population of 3 million. It is the country's administrative, business and industrial capital.

8.8.2 Study population

All care givers and their children aged between 6-10 years old attending the UONDH and KNHDC.

8.8.3 Study design.

Two different self administered questionnaires will be filled by consenting caregivers and their children and this will be part of the data collection forms. Clinical examination forms will be used to assess and record the dental oral hygiene status and treatment needs of the children.

8.8.4 Sample size.

\[ N = \frac{Z^2 \cdot P(1-P)}{C^2} \]

where:

- \( Z \) = Value of confidence level
- \( P \) = Prevalence
- \( C \) = 1-Confidence level
- \( N \) = Sample size
The prevalence is assumed to be 75% for the oral hygiene status of the children, therefore, using the above formulae:

\[ N = (1.96)^2 \times 0.75 \times (1-0.75) \times \frac{(1-0.95)^2}{(0.05)^2} \]

\[ N = 3.84 \times 0.75 \times 0.25 \times \frac{0.0025}{0.0025} \]

\[ N = 3.84 \times 0.18 \]

\[ 0.0025 \]

\[ N = 0.72 \]

\[ 0.0025 \]

\[ N = 288 \]

For a population less than 10,000, the following formula will be used to compute the sample size.

\[ Nf = \frac{N}{n} \] where:

\[ \frac{(1+N)}{n} \]
N = Sample size

n = Desired number of patients that are expected to visit the UONDH and KNHDC during the study period (20 patients per week x 4 weeks x 3 months).

nf = desired sample size

\[
\text{nf} = \frac{288}{(1+288)} = \frac{288}{240} = 2.20
\]

\[
\text{nf} = 288 \quad 2.20
\]

\[
\text{nf} = 130 \text{ (SAMPLE SIZE)}
\]

8.8.5 Sampling method.

A questionnaire will be filled by both the caregiver and their children aged between 6-10 years old and returned on the same day. A clinical examination of the children who fit the inclusion criteria will be done. The subjects will be chosen using simple random sampling.

8.8.6 Data collection instruments and technique.

Instruments used for data collection will be pretested to minimize error. A sterile tray will be used containing dental mirror, periodontal and probe will be used. Face masks and clean gloves will also be used. Plaque score, DMFT values and gingival index of the pediatric patients will be recorded after a