FK Kahabuka
M Ndalahwa

Parental oral health care of mentally retarded children in Ilala municipality, Dar es Salaam, Tanzania

Authors' affiliations:
F. K. Kahabuka, Department of Preventive and Community Dentistry, School of Dentistry, Muhimbili University College of Health Sciences, University of Dar es Salaam, Dar es Salaam, Tanzania
M. Ndalahwa, Department of Dentistry, Muhimbili National Hospital, Dar es Salaam, Tanzania

Correspondence to:
F. K. Kahabuka
School of Dentistry
PO Box 65014
Dar es Salaam
Tanzania
Tel.: +255-22-2150564
Fax: +255-22-2150465
E-mail: fkahabuka@muchs.ac.tz

Dates:
Accepted 9 May 2006

To cite this article:
Int J Dent Hygiene **4**, 2006; 145–149
Kahabuka FK, Ndalahwa M.
Parental oral health care of mentally retarded children in Ilala municipality, Dar es Salaam, Tanzania

Abstract: *Objective:* The aim of this study was to investigate oral hygiene practices and oral health care given by parents to mentally retarded children in Dar es Salaam, Tanzania. *Methods:* A total of 140 questionnaires were distributed; only 100 questionnaires were completed and thus were included in the analysis, a 71.4% response rate. Questionnaires inquired on oral hygiene practices, supervision or assistance during tooth brushing, examination of the oral cavity, and measures taken in an event of oral health problems. *Results:* Sixty-five per cent of the children are able to brush their teeth, whereas 35% are brushed by a family member. About 74% of the children who brush themselves brush occasionally or once per day while 26% brush more than once per day. More than 58% of the children who brush themselves brush under supervision. A statistically significant difference was observed in respect of bleeding on brushing which was among 61% of the children who brush occasionally or once per day and among 29% of the children who brush more than once per day (Pearson $\chi^2 = 5.13$, $P = 0.024$). Sixty-four per cent of parents occasionally examine their children's oral cavity. Few parents take their children to a dentist in an event of toothache/cavity on a tooth (26%) or bleeding on brushing (37%). *Conclusion:* Most children are able to brush their teeth themselves. Majority of those who cannot brush are assisted. Bleeding on brushing and tooth cavities are common problems but few children are taken to a dentist for care.

Key words: health care; mentally retarded; oral health

Introduction

Mental retardation can be defined as a deficiency in theoretical intelligence, which is congenital or acquired in early life (1). Perception of mental retardation varies from one society to another depending on demands and conditions in a given society. Hence, more persons may be considered lacking in intellectual ability in a complex industrialized society than in regions where life is simpler (1). Mentally retarded children may have cerebral palsy, epilepsy, sensory defects and congenital deformities like heart disease. Also they may have severe speech difficulties and behavioural aberrations (1, 2). Many mentally retarded children have hypomineralized teeth, hypodontia and can have extensive occlusal attrition (1).

Mentally retarded children have a high frequency of sugar consumption because their meals are usually in liquid form, are sweetened and are consumed in small quantities over a long period of time. These children are on long-term medication (sweetened), and they have reduced self-cleansing ability causing prolongation of lowered pH on the teeth surfaces (1, 3). Furthermore, mentally retarded children have decreased dexterity thus they are unable to perform proper tooth brushing. All these factors predispose mentally retarded children to dental caries and gum diseases. Bhavsar and Damle (4) in their study, on dental caries and oral hygiene status among 12- to 14-year olds, reported that the prevalence and severity of dental caries was highest in handicapped (including mentally retarded) and lowest in blind children. A study done by Waldman and Perlman (2) showed that individuals with mental retardation have more untreated dental needs than individuals in general population and that by Ohito *et al.* (5) reported caries in 44% with mean DMFT of 0.8. Given that dental caries in mentally retarded population is a challenging problem to dental professionals and parents, it is advised to give sugar-containing food judiciously to reduce the occurrence of dental caries (6).

Gingivitis affect mentally retarded children relatively more than normal children because these children have reduced ability to control plaque through tooth brushing and have reduced resistance to infection, which leads to rapid development of periodontal diseases with tooth loss at young age (1). Studies show that mentally retarded children have higher frequency of gingivitis than the general population (7). In a study done among children with mental retardation in Kenya, gingivitis was found in 37% while dental plaque was found in all sites (8). Gizani *et al.* (9) reported poor oral hygiene in 31.8% of handicapped children. They further reported that a considerable percentage (22.1%) of mentally retarded children did not brush daily, while 91% did not receive assistance in tooth brushing from their parents or caretakers. Problems reported frequently by parents of mentally retarded children include tooth grinding, drooling and tooth brushing difficulties (1, 8). Moreover, defective muscular function and coordination often reduces the possibilities of maintaining adequate oral hygiene (1, 7).

There are numerous difficulties associated with the delivery of dental care to mentally retarded children who need special attention (3, 10). The difficulties are related to three aspects, namely low demand because of low priority given to dental health, practical difficulties in carrying out dental treatment and lack of provision made to deliver necessary care (3).

In Tanzania, identification of mentally retarded children is done at Paediatric Health care clinics, usually at the discretion of the examining doctor as no specific IQ test criteria is followed. Customary in this country children with mental retardation are not given due attention in terms of basic needs such as education and health services. Regarding oral health, no policy for mentally retarded children has been stipulated in the National Oral health plan (11). Consequently, in this country oral health care of mentally retarded children rely on what parents can offer or seek. Therefore, the aim of this study was to find out the types of oral health care given by parents to their mentally retarded children aged 4–20 years in Ilala, Dar es Salaam.

Study population and methods

Study population

A descriptive cross-sectional study was conducted in Ilala Municipality, Dar es Salaam. In this municipality, there are 235 mentally retarded children registered in different primary and special schools. A sample size was predetermined using the formula: $Z = Z^2PQ$ divided by E^2, resulting to a minimum number of 126. Convenience sampling was done to obtain seven schools to participate in the study. Parents of all mentally retarded children aged 4–20 years at the selected schools were eligible to take part in the study. A total of 140 structured questionnaires prepared in English and translated to Kiswahili were distributed to parents. The questionnaires were filled and returned by 126 parents. However, 26 questionnaires were not properly filled, thus they were excluded, leaving 100 questionnaires for analysis, a response rate of 71.4%. Boys constituted 55% and girls 45% of the mentally retarded children (Table 1). Fifty-two per cent of the parents were females (Table 2).

Table 1. **Distribution of the study population (mentally retarded children) by age group and gender**

Age (years)	Male, *n* (%)	Female, *n* (%)	Total, *n* (%)
4–7	6 (60.0)	4 (40.0)	10 (100.0)
8–12	36 (54.5)	30 (45.5)	66 (100.0)
13–20	13 (54.2)	11 (45.8)	24 (100.0)
Total	55 (55.0)	45 (45.0)	100 (100.0)

Table 2. **Gender distribution of parents by children's age**

	Parent's sex		
Child's age (years)	Male, *n* (%)	Female, *n* (%)	Total, *n* (%)
4–7	4 (40)	6 (60)	10 (100)
8–12	29 (43.9)	37 (56.1)	66 (100)
13–20	15 (62.5)	9 (37.5)	24 (100)
Total	48 (48)	52 (52)	100 (100)

Methods

With the assistance from the teachers, questionnaires were distributed to parents who were escorting mentally retarded children to school during data collection period (August to September 2003). One author (NM) explained to the parents or sent instructions to parents who were not met at school on how to fill in the questionnaires. Signed consent was obtained from parents or a letter of informed consent was sent to parents who were not escorting their children.

The questionnaire was used to ascertain as to whether parents supervise their children during tooth brushing or do brush their teeth, whether parents examine the oral cavity of their children and if yes, how often they examine their children. Those who do not examine their children's oral cavity were requested to tell as to why they do not examine their children's oral cavity. Other information gathered was on what measures did parents take in an event of oral health problems, parent's practice of sending their children to a dentist and the frequency of doing that. Parents were requested to bring the questionnaires back to schools after filling them within 7 days. Questionnaires were collected from schools and the collected data were entered into a computer and analysed using SPSS 10.0 (SPSS Inc., Chicago, IL, USA). Chi-squared test was used to test for significant differences between groups. Statistical significance was set at $P < 0.05$.

Results

Sixty-five per cent of the children brush their teeth themselves, 35% are brushed by one of the family members. About 74% of the 65 children who brush themselves brush occasionally or once per day while 26% brush more than once per day. More than 58% of the children who brush themselves brush under supervision (Table 3).

Table 3. **Parents' supervision during tooth brushing among children who can brush their teeth themselves**

Frequency of tooth brushing	Yes, *n* (%)	No, *n* (%)	Total, *n* (%)
Occasionally or once per day	27 (41.6)	21 (32.3)	48 (73.9)
More than once per day	11 (16.9)	6 (9.2)	17 (26.1)
Total	38 (58.5)	27 (41.5)	65 (100)

Table 4. **Gingival bleeding in relation to oral hygiene practices**

Tooth brushing practices	Yes, *n* (%)	No, *n* (%)	Total, *n* (%)
Children who cannot brush their teeth	19 (54.3)	16 (45.7)	35 (100)
Children who brush themselves occasionally or once per day	30 (61.2)	19 (38.8)	49 (100)
Children who brush themselves more than once per day	5 (29.4)	12 (70.6)	17 (100)

Pearson $\chi^2 = 5.13$, $P = 0.024$.

Table 5. **Parents' practice to examine their children's oral cavity ($n = 85$)**

	n (%)
Examine occasionally (less than once per year)	54 (63.5)
Examine once per year	1 (1.2)
Examine more than once per year	30 (35.3)
Total	85 (100)

Gingival bleeding whilst brushing teeth was experienced by about 61% of the children who brush themselves occasionally or once per day, 54.3% of those who cannot brush themselves and 29% of children who brush themselves more than once per day (Pearson $\chi^2 = 5.13$, $P = 0.024$) (Table 4).

Eighty-five per cent of the parents reported to have a practice of examining the oral cavity of their children. About 64% of them do the examination of their children's oral cavity occasionally (less than once per year), 35.3% do it more than once per year while one parent (1.2%) examines her child once per year (Table 5). Those who did not examine their children's oral cavity reported various hindrances to such examination including lack of time, difficulties in handling the child, refusal of the children to open the mouth, parents waiting for children to complain of toothache and believing that intraoral examination is a dentist's responsibility.

The common measures taken by the parents following a complaint of toothache and/or observing a cavity(ies) on chil-

Table 6. **Measures taken by parents in an event of oral health problem of handicapped children**

	Toothache or cavities on teeth, *n* (%)	Gingival bleeding on tooth brushing, *n* (%)
Nothing	22 (38.8)	25 (46.3)
Pain killer	19 (29.2)	0 (0)
Send a child to a dentist	24 (36.9)	14 (25.9)
Brushed teeth properly	0 (0)	15 (27.8)
Total	65 (100)	54 (100)

Table 7. **Parents' action taken following a complaint of toothache or upon seeing cavities in a child's teeth by gender**

	Male, *n* (%)	Female, *n* (%)	Total, *n* (%)
Nothing	5 (17.9)	17 (45.9)	22 (33.8)
Giving pain killers or sending a child to a dentist	23 (82.1)	20 (54.1)	43 (66.2)
Total	28 (100.0)	37 (100.0)	65 (100.0)

Pearson $\chi^2 = 5.62$, $P = 0.01$.

dren's teeth were provision of pain killers (29%) and sending children to a dentist (37%). Following gingival bleeding on tooth brushing, 28% brushed the children's teeth properly and 26% sent their children to a dentist (Table 6). For those parents who had a practice of sending their children to a dentist for either check-up or following oral diseases, 85% did it occasionally or once per year, while 15% do it more than once per year.

Bleeding gums on tooth brushing or cavities on children's teeth were not associated with children's ability to brush their teeth themselves. Furthermore, no association was seen between the actions taken by parents after noticing bleeding gums on brushing with gender of the reporting parent. Likewise, gender of the reporting parent or that of a child were not related with parents' practice to take their children to a dentist.

A significant difference was seen between gender of the reporting parent and action taken on seeing cavities in the child's teeth. This was particularly observed where 82% of male parents reported to provide pain killers or send a child to a dentist in an event of a cavity or complaint of tooth ache compared with 54% of female parents (Pearson $\chi^2 = 5.62$, $P = 0.01$) (Table 7).

Discussion

Some children were not escorted to school by their parents which necessitated sending the questionnaires to the parents through their children. In such instances, it is not clear whether these questionnaires and the accompanied instructions reached the intended persons. This might have contributed to a certain proportion of non-respondent subjects. Moreover, the findings of this study present an overview of oral health care that mentally retarded children in Dar es Salaam receive from their parents, as the response rate was satisfactory.

The percentage of children who are incapable of brushing themselves in this study (35%) is lower than 60% reported previously by Randell *et al.* study (12). The observed difference could probably be because parents' over reporting in this study because they knew that dental personnel distributed the questionnaires.

As expected, a higher percentage of bleeding on brushing was reported among children who brush their teeth occasionally or once per day compared with those who brush more than once per day. As it is difficult to achieve proper brushing in mentally retarded children, brushing more than once per day with the assistance from parents or caretakers may serve a purpose towards attaining good oral hygiene of these children.

In this study, 35% of the parents reported to brush their children's teeth unlike in a previous study where Gizani *et al.* (9) reported that 91% of mentally retarded children in Belgium do not receive any help during tooth brushing. Probably the use of powered toothbrushes by mentally retarded children in industrialized countries minimizes the need for assistance during tooth brushing. Other reasons for this difference may be because of attitude of the society and parents in Belgium towards mentally retarded children and thus motivation of these children towards oral hygiene practices unlike the situation in Tanzania where families still shy away from handicapped children in the family.

Although many parents (85%) reported to examine the oral cavity of their children, most of them do it occasionally (63.5%) or once per year (1.2%). As regular examination of oral cavity may aid early detection of oral diseases, parents of mentally retarded children should be made aware of the importance of early detection and the advantages of seeking dental care in early stages of oral diseases.

The main reasons given by the parents for not examining their children's oral cavity, show how uninformed parents can be in their role of looking after their children's oral health as reported earlier by Mitchell and Mitchell (3).

In this study many parents did not take any measure following gingival bleeding on tooth brushing and few of them sent their children to a dentist. Probably parents do not consider gingival bleeding on tooth brushing as a problem or they do

not know the appropriate measure to take. This indicates a necessity for provision of oral health education to parents and guardians.

Providing pain killer and sending a child to a dentist were common measures taken by parents following a child's complaint of toothache and/or after parents observed cavities on children's teeth. This finding is similar to what was reported earlier by Ohito *et al.* (5) and Gizani *et al.* (9).

Many parents in this study reported that they have never sent their children to a dentist for dental check-up or following oral diseases, a similar finding to that of Randell *et al.* (12) who reported that many people with Down's syndrome in Australia visited a dentist for the first time when they were older. On the other hand, children may not report or complaint to their parents because of their mental health status (1, 2). Parents who have a practice of sending their children to a dentist do it occasionally or once per year. Thus parents should be enlightened on the importance of regular visits to a dentist as part of preventive dental care and for early detection of oral diseases.

From the results of this study, it is concluded that most children are able to brush their teeth themselves. Majority of those who cannot brush are assisted. Bleeding gums on brushing and tooth cavities are common problems but only a few children are taken to a dentist for care.

Acknowledgements

The authors express gratitude to parents who filled in the questionnaires, the Ilala Municipality District Education Officer for granting permission to carry out the study and the teachers at the schools where the study was conducted.

References

1 Koch G, Poulsen S. *Pediatric Dentistry: a Clinical Approach*. Copenhagen, Munksgaard, 2001, 4459–4462.
2 Waldman HB, Perlman SP. Dental care for individuals with developmental disabilities is expensive, but needed. *J Calif Dent Assoc* 2002; **30:** 427–432.
3 Mitchell L, Mitchell DA. *Oxford Handbook of Clinical Dentistry*. London, Oxford University Press, 1991, 30–48.
4 Bhavsar JP, Damle SG. Dental caries and oral hygiene amongst 12–14 years old handicapped children of Bombay, India. *J Indian Soc Pedod Prev Dent* 1995; **13:** 1–3.
5 Ohito FA, Opinya GN, Wang'ombe J. Dental caries, gingivitis and dental plaque in handicapped children in Nairobi, Kenya. *East Afr Med J* 1993; **70:** 71–74.
6 Attin T, Mbiydzemo FN, Villard I, Kielbassa AM, Hellwig E. Dental status of schoolchildren from a rural community in Cameroon. *SADJ* 1999; **54:** 145–148.
7 Pope JE, Curzon ME. The dental status of cerebral palsied children. *Peadiatr Dent* 1991; **13:** 156–162.
8 Waldman HB, Swerdloff M, Perlman SP. Children with mental retardation grow older. *ASDC J Dent Child* 1999; **66:** 266–272.
9 Gizani S, Declerck D, Vinckier F, Martens L, Marks L, Goffin G. Oral health condition of 12-year-old handicapped children in Flanders (Belgium). *Community Dent Oral Epidemiol* 1997; **25:** 352–357.
10 Waldman HB, Perlman SP. Community-based dental services for patients with special needs. *N Y State Dent J* 2001; **67:** 39–42.
11 Ministry of Health Republic of Tanzania. *The National Plan for Oral Health 1988–2002*. Tanzania, Ministry of Health Republic of Tanzania.
12 Randell DM, Harth S, Seow WK. Preventive dental health practices of non-institutionlized Down syndrome children: a control study. *J Clin Pediatr Dent* 1992; **16:** 225–229.