

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/14905004>

The relationship between tooth brushing frequency and personal hygiene habits in teenagers

Article in *East African medical journal* · August 1993

Source: PubMed

CITATIONS

17

READS

239

3 authors, including:



Joseph Nyaga

KU Leuven

5 PUBLICATIONS 29 CITATIONS

[SEE PROFILE](#)



Evelyn Wagaiyu

University of Nairobi

33 PUBLICATIONS 305 CITATIONS

[SEE PROFILE](#)

Some of the authors of this publication are also working on these related projects:



Periodontology [View project](#)



Risk factors of periodontal diseases [View project](#)

East African Medical Journal Vol 70 No 7 July 1993

THE RELATIONSHIP BETWEEN TOOTH BRUSHING FREQUENCY AND PERSONAL HYGIENE HABITS IN TEENAGERS
B.M. Nzioka, BDS (Nrb), Department of Dental Surgery, Kenyatta National Hospital, P.O. Box 20723, Nairobi, J.K. Nyaga, BDS (Nrb), University of Nairobi, Department of Dental Surgery, P.O. Box 19676, Nairobi and E.G. Wagaiyu, BDS(Nrb), MSc(Lond), Lecturer in Periodontology, University of Nairobi, Department of Dental Surgery, P. O. Box 54197, Nairobi

Requests for reprints to: Dr. E.G. Wagaiyu, P. O. Box 54197, Nairobi

THE RELATIONSHIP BETWEEN TOOTH BRUSHING FREQUENCY AND PERSONAL HYGIENE HABITS IN TEENAGERS

B.M. NZIOKA, J.K. NYAGA and E.G. WAGAIYU

SUMMARY

A survey of 904, 14-17 year old school children from secondary schools around Nairobi was done to find out if there was any relationship between toothbrushing frequency and personal hygiene habits. The students completed a questionnaire anonymously in class. Female students brushed their teeth more often than the male students. 62.2% of the females and 50.1% of the males brushed their teeth more than once a day. Of those students who brushed their teeth more than once a day, 52% bathed daily, 22% used perfumes/deodorants daily and 50.1% always washed their hands after visiting the lavatory. No relationship was found between washing of hair and toothbrushing frequency. 69.7% males and 53.2% females gave toothache and toothdecay as the main reasons for mouth care. Those who brushed their teeth more frequently also visited the medical doctor regularly for routine check-ups. These findings indicated that toothbrushing was closely related to personal hygiene habits.

INTRODUCTION

It is well established that plaque is the primary aetiological factor in gingivitis(1,2) and that regular and effective removal will prevent and control it(3). There is strong evidence that excellent supragingival plaque control reduces and may prevent subgingival colonization(4,5). At present, the recognised approach to effective plaque control is through mechanical removal(6). Toothbrushing is the principal means by which most individuals control plaque. Toothbrushing is regarded as a habit and is related to other body hygiene practices(7).

There is evidence to show that people brush their teeth for reasons of general cleanliness and grooming rather than for the prevention of dental diseases and loss of teeth(8,9). Females have been shown to clean their teeth more frequently than males and mainly for cosmetic reasons rather than the prevention of dental diseases(7,9).

In Kenya, a study done on oral hygiene habits reported males as having poorer oral hygiene than females(10). Other studies have reported more plaque and gingivitis in males compared to their female counterparts(11,12,13). However, the reasons for these findings have not been investigated except for suggestions by Ng'ang'a and Valderhaug(1) that in older children, females brush more efficiently than males because they desire greater general cleanliness and more appealing appearances(10).

In other African countries and Kenya, no study investigating the relationship between toothbrushing and general body hygiene habits has been carried out. Therefore, the aim of this study was to find out whether toothbrushing is related to other body hygiene practices and if females brush their teeth more frequently than males.

MATERIALS AND METHODS

Form 3 and 4 students of ages 14-17 from Nairobi School, Stahere Boys Centre, State House Girls, Loreto Convent Valley Road and Moi Girls, all secondary schools around Nairobi, were given questionnaires to complete anonymously in class under the supervision of the authors. They were not given prior warning and were assured that the information would be treated with strict confidence. Anonymity was preserved by asking them not to write their names on any part of the questionnaire.

The questionnaire comprised several questions including the number of times teeth were cleaned and the main reason for taking care of the teeth, namely:-

- making teeth look clean
- to avoid wearing false teeth,
- making one's breath smell clean and;
- to make one's teeth and mouth feel clean. They were also asked on their frequency of bathing, using of perfumes and deodorants.

The completed questionnaires were collected at the end of the session and analysed by the tallying method.

From an epidemiological point of view, the present study had limitations. The secondary schools were selected more for convenience rather than randomly. Secondly the validity

of any questionnaire survey is dependent upon the honesty of the individual. However, to minimize this complication, the confidential nature of the exercise was emphasised to the participants.

RESULTS

Nine hundred and four students completed the questionnaires but only 900 were analysed as four were spoilt. The spoilt questionnaires were incorrectly completed and could not be utilised. Of the 900 students, 487 (53.9%) were males and 417 (46.1%) females. Their mean age was 16 years.

Figure 1 shows that 47.3% of the students (49.9% males, 37.8% females) brushed their teeth once a day, 36.2% (28.7% males, 45.1% females) twice a day and 29.4% (21.4 % males, 17.1% females) thrice a day. Females brushed more frequently than males as majority of the males trended to brush once a day.

Figure 1

The percentage frequency distribution of toothbrushing

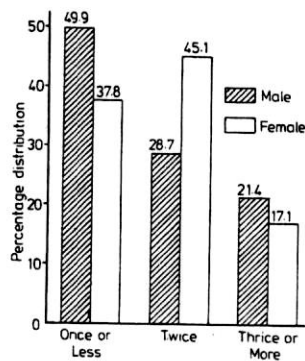


Figure 2 shows the frequency distribution of the males and females giving the reason for looking after their teeth. 69.7% males and 53.2% females did so mainly to avoid toothache and toothdecay. 23.6% females and 13.1% males brushed their teeth for cosmetic reasons. Only 4.2% brushed their teeth to avoid wearing artificial teeth.

Figure 2

The percent frequency distribution of reasons for mouth care

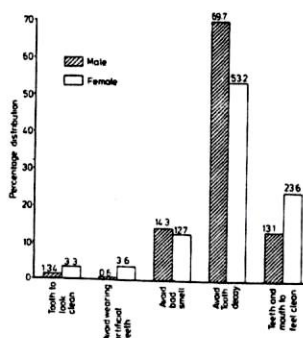


Table 1 shows the frequency distribution of bathing and brushing of teeth. Of those who bathed daily, 52% brushed their teeth twice or more daily while only 32.6% brushed once or less in a day. For those students who bathed once a week, 7.7% brushed once or less times a day. These students were lightly more than those who bathed once a week and brushed their teeth twice a day (4.3%) and thrice a day (1.3%). This indicated that most students (84.6%) bathed once daily and brushed their teeth once or more times a day.

Table 1

Distribution of toothbrushing habits according to frequency of taking bath (in percentages)

Frequency of bathing	Toothbrushing frequency per day		
	Once	Twice	Thrice or more
Everyday	32.6	31.5	20.5
Once a week	7.7	4.3	1.3
Once in two days	0.7	-	-
Some days	1.0	-	-
I do not know	0.6	0.3	0.1

Table 2

Distribution of toothbrushing habits according to frequency of washing hands (in percentages)

Frequency of washing hands	Toothbrushing frequency per day		
	Once	Twice	Thrice or more
Always	27.7	30.1	20.0
Occasionally	12.6	4.6	0.4
Never	1.1	-	0.1
I do not know	1.2	0.6	0.1

Table 3

Distribution of toothbrushing habits according to number of routine medical check-ups (in percentages)

Frequency of medical check-ups	Toothbrushing frequency per day		
	Once	Twice	Thrice or more
Twice per year	2.0	.3	5.9
Once a year	4.3	6.1	6.8
Once in two years	2.2	3.0	1.1
Never	25.6	13.2	5.2
Others	7.3	7.3	3.4

77.8% of the students always washed their hands after visiting the lavatory (Table 2). Of those who washed their hands after every visit to the lavatory, 50.1% brushed their teeth twice or more daily and 27.7% brushed their teeth once or less in a day. Only 0.1% of the students brushed their teeth thrice a day and did not wash their hands after visiting the lavatory.

In response to how often they used perfume/deodorant and brushed their teeth, 22% brushed their teeth twice or more times a day and used perfume/deodorant daily. On the other hand, only 10.3% used perfume/deodorant daily and brushed their teeth once or less a day. 20.1% brushed their teeth once or less times in a day and had never used perfume/deodorant.

Hair washing frequency was not related to the number of times the students brushed their teeth. However, male students washed their hair more often than the female students.

The variation between tooth brushing frequency and frequency of routine medical check-ups is shown in Table 3. 13.8% of those students who brushed their teeth three or more times in a day had routine medical check-ups, whereas only 8.5% of those who brushed once or less a day did so. 44% of the students had never had a medical check-up whereas a much higher percentage of 58.2% had never had a dental check-up. The frequency of routine dental check-ups did not increase with the frequency of toothbrushing.

DISCUSSION

The principal finding in this study, was that toothbrushing frequency was related to other body hygiene habits such as frequency of bathing, washing of hands after visiting the lavatory and use of perfumes/deodorant. Other findings were that females cleaned their teeth more frequently than males, the main reason given for cleaning the teeth was to avoid dental problems and there was no relationship between tooth brushing frequency and routine dental check-ups.

The results in the present study differed from a similar one done on 14 year old English students(7). These differences may be due to the variations in culture and socio-economic status of the pupils in the two studies. Additionally, the differences in age in the two studies may have contributed. This study included older children of up to 17 years whereas Macgregor *et al*(9) looked at 14 year olds only.

The results showing that all students brushed their teeth and the majority did so once a day are similar to those reported on University Students of Nairobi(14). However, it is not possible to compare the results further as the individuals in the latter study were older.

The female pupils brushed their teeth more frequently than the male pupils. This finding may explain the consistent reports of lower plaque levels

and gingivitis among the females studied in Kenya(10,11,12,13). Females have been reported to brush their teeth more often for cosmetic reasons(9,10). However, in this study most of them wanted to avoid tooth decay. This latter finding is similar to an investigation on oral hygiene habits and dental awareness in peri-urban and urban children of 9-15 years (Kaimenyi - personal communication).

This study also showed that toothbrushing frequency increased with general cleanliness behaviour such as bathing, use of perfume/deodorant and hand washing after visiting the toilet. This finding agrees with other reports (7,9). However, hair washing in this study was not related to toothbrushing frequency in the female students. This may be because on the whole, female pupils had longer hair than their male counterparts and thus hair washing requires a lot more time and care making it difficult to do it often.

In this study, toothbrushing was not influenced by visiting the dentist because the majority of the pupils (58.2%) had never been to a dental clinic. This is similar to a finding reported on University students of Nairobi(14), where 60.6% had never been to a dentist.

In conclusion, it was evident in this study that toothbrushing was an integral part of general cleanliness and that females brushed their teeth more often than males. Additionally prevention of dental diseases was the reason given for mouth care.

ACKNOWLEDGEMENTS

To the Headmasters and Headmistresses of Nairobi School, Starehe Boys Centre, State House Girl's, Moi Girl's and Loreto Convent Valley Road for their cooperation and for availing their students for the study, and to the pupils of the said schools for their cooperation

REFERENCES

1. Loe, H., Theilade, E. and Jensen, S.B. Experimental gingivitis in man. *J. Periodont.* 36:177, 1965.
2. Page, R.C. Gingivitis. *J. Clin. Periodont.* 13:345, 1986.
3. Axelsson, P. and Lindhe, J. The effect of a preventive programme on dental plaque, gingivitis and carries in school children. *J. Clin. Periodont.* 1:126, 1974.
4. Waerhaug, J. Healing of the dento-epithelial junction following subgingival plaque control. As observed in human biopsy material. *J. Periodont.* 49:1, 1978.
5. Waerhaug, J. Effect of toothbrushing on subgingival plaque formation. *J. Periodont.* 52:30, 1981.
6. Newman, H.N. Modes of application of anti-plaque chemicals. *J. Clin. Periodont.* 13:965, 1986.
7. Macgregor, I.D.M. and Balding, J.W. Toothbrushing frequency and personal hygiene in 14 year old schoolchildren. *Brit. Dent. J.* 162:141, 1987a.
8. Hodge, H.C. Holloway, P.J. and Bell, C.R. Factors associated with toothbrushing behaviour in adolescents. *Brit. Dent. J.* 152:49, 1982.

9. Macgregor, I.D.M. and Balding, J. W. Self-esteem as a predictor of tooth brushing behaviour in young adolescents. *J. Clin. Periodont.* 18:312, 1991.
10. Ng'ang'a P. M. & Valderhaug, J. Oral hygiene practices and periodontal health in primary school children in Nairobi, Kenya. *Acta Odontol Scand.* 49:303, 1991.
11. Wagaiyu, E.G. Wagaiyu, C.K. Valderhaug, J. and Arneberg, P. A survey of periodontal health in Kenyan National Youth Trainees. *J. Dent. Res.* 68:708, 1989.
12. Manji, F. Gingivitis, dental fluorosis and dental carries in primary school children of Nairobi Kenya. *E. Afr. med. J.* 65:504, 1984.
13. Maina, S. and Lesan, W, R. Dental Plague and gingival conditions of mentally handicapped children in Mathare Special Training Centre, Nairobi, Kenya. *E. Afr. Med. J.* 65:330, 1988.
14. Chindia, M. L. Valderhaug, J. and Ng'ang'a P. M. Oral health habits and periodontal health among a group of University students in Kenya. *E. Afr. med. J.* 69:37, 1992.