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Original Research

To compare effect of dry and wet brushing on dental plaque in children

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ABSTRACT

Background: The present study was conducted to compare effect of dry and wet brushing on dental plaque in children. **Materials & Methods:** The present study was conducted on 60 children age ranged 6- 12 years of both gender. Subjects were divided into 2 groups of 30 each. They were recalled after 2 weeks to assess plaque level in teeth 11, 16, 21 26, 31, 36, 41 and 46. **Results:** Group I subjects were put on dry brush technique and group II on wet brush technique.There was non- significant difference of plaque score in both groups. **Conclusion:** There was non- significant difference in plaque score with both dry and wet brushing technique.

Key words: Brushing, Dry, Wet.

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INTRODUCTION

Early childhood caries is mainly caused by lack of appropriate oral hygiene while having a high sugar intake. There are substantial reports on the causative role of bottle milk for early caries development in children with little to no attempt to brush afterward. It is clearly evident that fluoridated toothpaste could directly effect on the mineralization of enamel and therefore reducing the chance of demineralization.[1]The use of toothbrush without toothpaste is believed to have no effect on the bacterial flora and only displaces them within the oral cavity. Children younger than the age of two are also proved to be unable to expectorate and therefore the formation of high volumes of toothpaste foam would bring the child to an unavoidable status of swallowing the oral content. Repeated effect of such action is believed to be a possible cause of future teeth discoloration in the line of fluorosis. Many pediatric dentists prefer to advise parents not to use any toothpaste for their young children to avoid such complication.[2]

Appropriate and efficient brushing is a key to microbial plaque control, which includes initial removal as well as maintaining teeth and gum's health. Mechanical and chemical methods are still considered as the most reliable methods for dental plaque control. Proper brushing method is instructed by dental professionals, with an important role played in oral health maintenance of different age groups.[3] The old tradition to supposedly wash the toothbrush before use has currently been practiced by many different communities with varying ethnicity which in fact makes the toothbrush wet. This wetting step is effective on the flexibility and strength of the toothbrush bristles and their clinical performance.[4]The present study was conducted to compare effect of dry and wet brushing on dental plaque in children.

MATERIALS & METHODS

The present study was conducted in the department of Pedodontics. It comprised of 60 children age ranged 6- 12 years of both gender. Ethical clearance was obtained prior to the study. Consent was obtained from parents of all children before the procedure.

Information such as name, age, gender etc. was recorded. Subjects were divided into 2 groups of 30 each. Group I

subjects were put on dry brush technique and group II on wet brush technique. Patients were asked to continue this technique for 2 week. They were recalled after 2 weeks to assess plaque level in teeth 11, 16, 21 26, 31, 36, 41 and 46. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I	Group II
Methods	Dry brush technique	Wet brush technique
Number	30	30

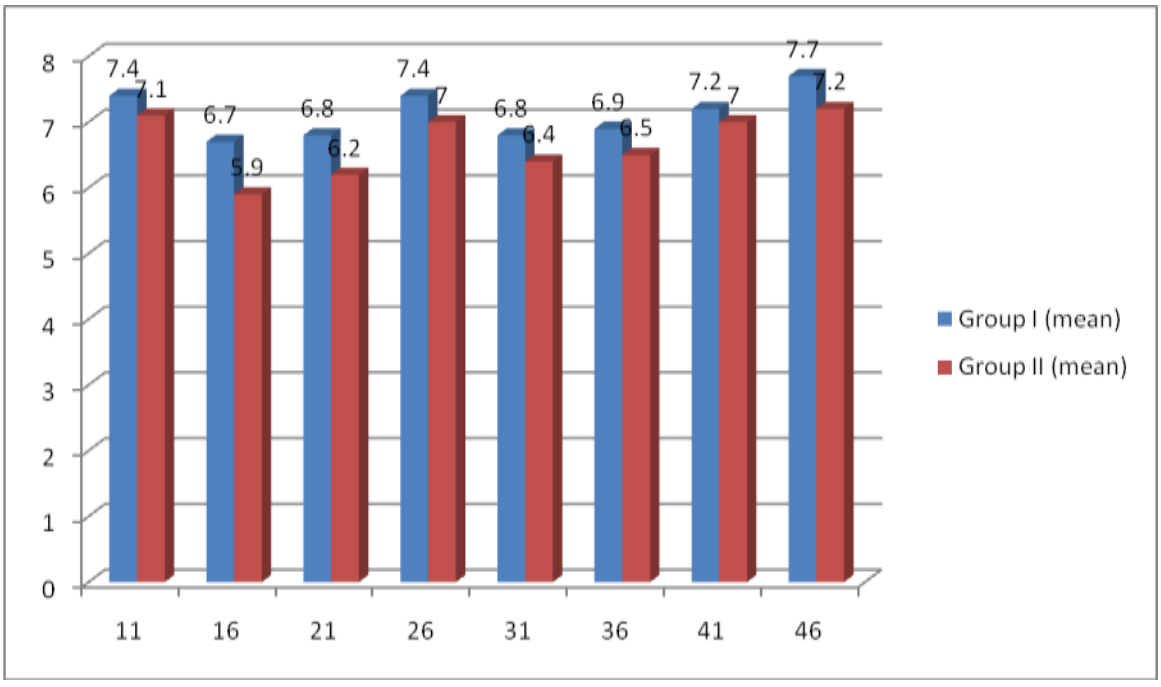
Table I shows that group I subjects were put on dry brush technique and group II on wet brush technique.

Table II Mean plaque score in teeth

Teeth	Group I (mean)	Group II (mean)	P value
11	7.4	7.1	0.5
16	6.7	5.9	0.2
21	6.8	6.2	0.6
26	7.4	7.0	0.7
31	6.8	6.4	0.2
36	6.9	6.5	0.3
41	7.2	7.0	0.8
46	7.7	7.2	0.7

Table II, graph I shows that there was non- significant difference of plaque score in both groups.

Graph I: Mean plaque score in teeth



DISCUSSION

Effective plaque control is critical to the maintenance of oral health because dental plaque is the primary etiological factor in the initiation and development of both caries and periodontal disease. The toothbrush is the principal instrument in general use for accomplishing plaque removal as a necessary part of disease control.[5] However, toothbrush alone does not suffice, and dentifrices have been used in conjunction with toothbrushes since a long time because of its positive chemical effects and delivery of various therapeutic agents which enhance the mechanical plaque control. The ideal dentifrice should provide the greatest possible cleaning action on tooth surfaces with the lowest possible abrasion rates.

Among the components of toothpaste formulations, abrasive agents are important for a given toothpaste to be effective as a dental stain and plaque removing agent.[6] In fact, toothbrushing compliance is reduced under the use of an abrasive-free formula, due to the poor cleaning capacity of the toothbrush alone in removing pellicle, resulting in increased tooth staining and rapid dental biofilm regrowth. However, too much abrasivity can cause dentin abrasion, tooth hypersensitivity, and esthetic problems and eventually damage the masticatory system.[7]The present study was conducted to compare effect of dry and wet brushing on dental plaque in children.

In present study, we included 60 subjects which were divided into 2 groups. Group I subjects were put on dry brush technique and group II on wet brush technique.

Frisbeeet al[8]assessed the efficacy of wet and dry brushing on cleaning outcome of tooth surfaces. Forty-three children aged 10–12 years were randomly selected and instructed for this brushing project. Each case served as self-control. Each patient was requested to brush through one of the wet/dry techniques for 1 week and other technique on the 2nd week. Samples had a washout step using pumice prophylaxis prior to each brushing week. Tooth Cleanliness Index was used to measure the plaque removal level. Two uniform Oral-B toothbrushes were used one for each week through the Modified Stillman technique. The level of brushing efficacy was slightly higher in males with no statistically significant difference between sexes. Remaining plaque measured was higher in wet group with significant difference (7.3 ± 1.7 for dry brushing and 7.6 ± 2.6 for wet brushing) ($P < 0.05$). Dry and wet brushing did not show a significant difference in their capacity to remove plaque indicating that dry brushing could be considered as an acceptable brushing technique.

We found that there was non- significant difference of plaque score in both groups. Brushing associated with dentifrices continues to be the most commonly used and efficient procedure in the practice of oral hygiene in most countries. However, besides having potential benefits of dental plaque biofilm removal and improving oral health, the injudicious use of toothpaste and toothbrush in causing injuries to dental hard and soft tissues has also been documented. Different factors such as brushing technique, force of brushing, duration and frequency of brushing, and type of brush, in particular filament stiffness, influence toothbrush abrasion.[9]

CONCLUSION

There was non- significant difference in plaque score with both dry and wet brushing technique.

REFERENCES

1. Cook SL, Martinez-Mier EA, Dean JA, Weddell JA, Sanders BJ, Eggertsson H, *et al*. Dental caries experience and association to risk indicators of remote rural populations. Int J Paediatr Dent 2008;18:275-83.
2. Figuero E, Nóbrega DF, García-Gargallo M, Tenuta LM, Herrera D, Carvalho JC. Mechanical and chemical plaque control in the simultaneous management of gingivitis and caries: A systematic review. J ClinPeriodontol 2017;44Suppl 18:S116-34
3. Jayakumar A, Padmini H, Haritha A, Reddy KP. Role of dentifrice in plaque removal: A clinical trial. Indian J Dent Res 2010;21:213-7.
4. Daly CG, Marshall RI, Lazarus R. Australian dentists' views on toothbrush wear and renewal. Aust Dent J 2000;45:254-6.
5. Hennequin-Hoenderdos NL, Slot DE, Van der Sluijs E, Adam R, Grender JM, Van der Weijden GA. The effects of different levels of brush end rounding on gingival abrasion: A double-blind randomized clinical trial. Int J Dent Hyg 2017;15:335-44.
6. Zimmer S, Öztürk M, Barthel CR, Bizhang M, Jordan RA. Cleaning efficacy and soft tissue trauma after use of manual toothbrushes with different bristle stiffness. J Periodontol 2011;82:267-71
7. CarvalhoRde S, Rossi V, Weidlich P, Oppermann RV. Comparative analysis between hard- and soft-filament toothbrushes related to plaque removal and gingival abrasion. J Clin Dent 2007;18:61-4.
8. Frisbee SJ, Chambers CB, Frisbee JC, Goodwill AG, Crout RJ. Association between dental hygiene, cardiovascular disease risk factors and systemic inflammation in rural adults. J Dent Hyg 2010;84:177-84.
9. Hogan LM, Daly CG, Curtis BH. Comparison of new and 3-month-old brush heads in the removal of plaque using a powered toothbrush. J ClinPeriodontol 2007;34:130-6.