



Impact of Oral Hygiene Instructions in the Maintenance of Periodontal Health of Patients

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Abstract

Aim: To determine whether the effect of oral hygiene instruction is an additive or adjunct in the maintenance of periodontal health of patients.

Objective: The objective of the study was to compare the difference among oral hygiene instructions given through videos or orally versus no instructions given among group of subjects after scaling and root planning.

Background: Periodontal disease are one of the major dental diseases affecting the oral health. It was the major reason for tooth loss in adults. Success of periodontal treatment are based on effective oral care. Improper maintenance can cause recurrence of the disease. Group I were given instructions through videos, Group II were given oral instructions and group III were not given any instructions.

Reason: This study helps us to determine the effect of oral hygiene instructions in the maintenance of periodontal health of patients.

INTRODUCTION

Periodontal disease are a major dental disease affecting human populations worldwide at high prevalence rate (1,2). The World Health Organisation (WHO) reported that 10-15% of the world population suffers from severe periodontitis (3). Periodontal disease includes both gingivitis and periodontitis (4). This is the most important aspect of oral health as severe periodontal disease can lead to loss of teeth (5). Periodontal disease is caused by colonisation of gram negative, anaerobic bacteria destructing the sub gingival sites. The host response to the bacteria cause inflammation and destruction of periodontal tissues leading to clinical manifestations of the disease. This leads to increased pocket depth, loss of attachment of the tooth, mobility of teeth (4,5). Periodontal disease occurs due to accumulation of bacterial plaque. The degree of damage caused by the host response depends on the amount of plaque on patient's teeth which in turn depends on oral hygiene, age and systemic factors which can exacerbate susceptibility to the problem (6). Maintenance of periodontal health depends on behaviour of patient in maintaining good oral hygiene (7). In addition the patients should seek assistance of dental professionals in removing the plaque and calculus that may prevent effective dental care (8,9). Success in periodontal treatment depends on the ability and willingness of patients to maintain to oral hygiene (10). Studies also show that conditions such as chronic periodontitis can be improved by effective oral hygiene (11). Adequate adherence to oral hygiene instructions can improve the periodontal health of the patients. Therefore effective oral hygiene instructions play an effective role in maintaining the periodontal health of

patients. This study focussed on the impaction of oral hygiene instructions in maintenance of periodontal health.

MATERIALS AND METHODS

The study included 30 patients from Saveetha dental college, Chennai over 19 years of age. The participants were divided into three groups with ten patients in each group. Group I included patients for whom oral hygiene instructions were given through videos. Group II included patients for whom oral hygiene instructions were given orally. Group III included patients for whom oral hygiene instructions were not given. All 3 groups were recalled after fifteen days to check the oral hygiene status using PHP index.

DATA COLLECTION

The Simplified Oral Hygiene Index (OHI-S) (12,13) developed by Greene and Vermillion and Patient Hygiene Performance index (PHP) (14) developed by Podshadley and Haley were used in this study. Simplified Oral hygiene index has two components- debri and calculus each with a score ranging from zero to three. This was conducted with the aid of mouth mirrors and explorers. Patient hygiene performance index was done after the patient has been given a disclosing solution which stains the oral debri a dark pink colour. The disclosing solution is left for 30 seconds and the patient was not permitted to rinse the mouth until after examination.

Both the indices are performed on the following teeth: maxillary right first molar, maxillary right central incisor, maxillary left first molar, mandibular left first molar, mandibular left first incisor and mandibular right first molar.

RESULTS

Group-I (Oral hygiene instructions given through videos)

MEAN OF OHI		MEAN OF PHP	
Before Instructions	After Instructions	Before Instructions	After Instructions
3.08	1.9	0.3	0.1

Group-II (oral hygiene instructions given orally)

MEAN OF OHI		MEAN OF PHP	
Before Instructions	After Instructions	Before Instructions	After Instructions
2.31	2.09	0.3	0.2

Group-III (No oral hygiene instructions were given)

MEAN OF OHI		MEAN OF PHP	
Before Instructions	After Instructions	Before Instructions	After Instructions
3.7	3.3	0.3	0.2

Comparison of OHI for three groups:

	Before instructions	After instructions	P value
Instructions through videos	3.080±0.4467	1.910±0.1449	0.000*
Oral instructions	2.310±0.6919	1.890±0.5915	0.169
No instructions	3.373±0.8174	3.036±0.6185	0.084

Paired 'T' test, 't'=8.181, df=9, P=0.000

Comparison of PHP for three groups:

	Before instructions	After instructions	P value
Instructions through videos	0.280±0.1033	0.170±0.0483	0.001*
Oral instructions	0.340±0.0699	0.210±0.0738	0.001
No instructions	0.355±0.0934	0.309±0.0701	0.016

Paired 'T' test, 't'=4.714, df=9, P=0.001

DISCUSSION

Periodontal disease significantly contributes to the global burden of disease (15). There is a clear relationship between poor oral hygiene and periodontal health (16). Accumulation of dental plaque causes inflammatory response in the host gum tissue which causes the periodontal disease. The degree of damage that occurs depends on the level of plaques which in turn is related to oral hygiene status, systemic factors of the patient (6). Treatment of periodontal disease involves removal of plaque and calcified bacteria material done by the dental hygienists and general dental practitioners. However failure to maintain oral hygiene can cause failure of the treatment. It's well known that self performed oral hygiene is the key component of prevention of periodontal disease (17,18,19). Adequate adherence to the oral hygiene instructions can greatly enhance the periodontal treatment (6).

The present study was conducted to determine the effect of oral hygiene instructions on the periodontal health of patients. The participants were divided into three groups. Group I included oral hygiene instructions through videos, Group II showed oral hygiene instructions given orally and for group III oral hygiene instructions were not given. The

patients were recalled after fifteen days. This study was first of its kind to be done comparing the different methods of giving oral hygiene instructions and its impact on periodontal health of patients.

The results showed that oral hygiene instructions given through videos had better compliance among the two groups. There was difference in mean in OHI and PHP index. The reduction was from 3.08 to 1.9 (OHI) and 0.3 to 0.1 (PHP) and is highly statistically significant (p value < 0.05). Instructions given orally had no significant difference in mean of OHI (2.31 to 2.09) and PHP (0.3 to 0.2). And in group III the mean reduction was from 3.7 to 3.3 (OHI) and 0.3 to 0.2 (PHP). It was statistically significant in PHP index.

This shows that mass media plays an important role in health promotion. Studies show that mass media campaigns produce positive change in health knowledge, attitude, beliefs across populations (20,21). Combined approach of mass media and health professional input has been shown to produce sustained behaviour change (22). Previous studies (23,24,25) have been done to assess psychological interventions in periodontal disease. They have showed improved oral hygiene when compared to non intervention Groups.

CONCLUSION

It is concluded that oral hygiene instructions have positive effect on periodontal health of patients. The method of giving instructions should be modified using mass media and other sources than giving orally. Studies of this kind with large samples should be done and recalled after longer period of time.

REFERENCE

- Petersen PE. The World Oral Health Report 2003: Continuous improvement of oral health in the 21st century - The approach of the WHO Global Oral Health Programme. *Community Dent Oral Epidemiol* 2003; 31(Suppl. 1):3-24.
- Papapanou PN. Epidemiology of periodontal diseases: An update. *J Int Acad Periodontol* 1999;1:110-116
- Petersen PE, Ogawa H. Strengthening the prevention of periodontal disease: the WHO approach. *J Periodontol.* 2005;76:2187-93.
- Kinane DF. Causation and pathogenesis of periodontal disease. *Periodontol* 2000;25: 8–20.
- Kornman KS, Page RC, Tonetti MS. The host response to the microbial challenge in periodontitis: assembling the players. *Periodontol* 2000 1997;14: 33–53
- Renz A, Ide M, Newton T, Robinson P, Smith D. Psychological interventions to improve adherence to oral hygiene instructions in adults with periodontal diseases (Review). *TheCochrane Library* 2007, Issue 2
- Newton, J. T. (2013) Effective communication with patients to improve motivation. In. Palmer, R. M., Ide, M. & Floyd, P. D. (eds). *A clinical guide to periodontology*, 3rd edition. pp. 33–40. London: British Dental Association.
- Cercek JF, Kiger RD, Garrett S, Egelberg J. Relative effects of plaque control and instrumentation on the clinical parameters of human periodontal disease. *Journal of Clinical Periodontology* 1983;10(1):46–56.
- Magnusson I, Lindhe J, Yoneyama T, Liljenberg B. Re-colonization of a subgingival microbiota following scaling in deep pockets. *Journal of Clinical Periodontology* 1984;11 (3):193–207.
- Meyers LB, Midence K. *Adherence to treatment in medical conditions*. Amsterdam: Harwood Academic, 1998.
- Turner Y, Ashley FP, Wilson RF. Effectiveness of oral hygiene with and without root planing in treating subjects with chronic periodontitis. *British Dental Journal* 1994;177 (10):367–7
- Greene, J. C., and Vermillion, J. R. : The oral hygiene index: a method for classifying oral hygiene status. *J Amer Dent Assoc* 61 : 172-179, August 1960.
- Greene, J. C., and Vermillion, J. R. : The simplified oral hygiene index. *J Amer Dent Assoc* 68: 7-13, January 1964.
- Podshadley, A. G. and Haley, J. V. A method for evaluating patient hygiene performance by observation of selected tooth surfaces. *Publ Health Rep* 83:259, 1968.
- Kolawole KA, Otuyemi OD, Oluwadaisi AM. Assessment of oral health-related quality of life in Nigerian children using the Child Perceptions Questionnaire (CPQ 11-14) *Eur J Paediatr Dent.* 2011;12:55–9
- Epidemiology of Periodontal Diseases, *J Periodontol* 2005;76:1406-1419
- Axelsson P, Lindhe J. Effect of controlled oral hygiene procedures on caries and periodontal disease in adults. Results after 6 years. *Journal of Clinical Periodontology* 1981; 8(3):239–48.
- Listgarten MA, Sullivan P, George C, Nitkin L, Rosenberg ES, Chilton NW, et al. Comparative longitudinal study of 2 methods of scheduling maintenance visits: 4-year data. *Journal of Clinical Periodontology* 1989;16(2):105–15
- Sbordone L, Ramaglia L, Gulletta E, Iacono V. Recolonization of the subgingival microflora after scaling and root planing in human periodontitis. *Journal of Periodontology* 1990;61(9):579–84.
- Noar SM: A 10-year retrospective of research in health mass media campaigns: where do we go from here?. *J Health Commun.* 2006, 11: 21–42. 10.1080/10810730500461059.
- Wakefield MA, Loken B, Hornik RC: Use of mass media campaigns to change health behaviour. *Lancet.* 2010, 376: 1261-71. 10.1016/S0140-6736(10)60809-4.
- Flay, B. R. (1987) Evaluation of the development, dissemination and effectiveness of mass media health programming. *Health Education Research*, 2, 123-130.
- Little SJ, Hollis JF, Stevens VJ, Mount K, Mullooly JP, Johnson BD. Effective group behavioural intervention for older periodontal patients. *Journal of Periodontal Research* 1997;32(3):315–25.
- Stewart JE, Jacobs-Schoen M, Padilla MR, Maeder LA, Wolfe GR, Hartz GW. The effect of a cognitive behavioural intervention on oral hygiene. *Journal of Clinical Periodontology* 1991;18(4):219–22.
- Weinstein R, Tosolin F, Ghilardi L, Zanardelli E. Psychological intervention in patients with poor compliance. *Journal of Clinical Periodontology* 1996;23(3 Pt 2):283–