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An individually tailored treatment programme for improved oral hygiene: introduction of a new course of action in health education for patients with periodontitis

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Jönsson B, Öhrn K, Oscarson N, Lindberg P. An individually tailored treatment programme for improved oral hygiene: introduction of a new course of action in health education for patients with periodontitis.

Abstract: *Objectives:* To describe and evaluate an individually tailored treatment programme based on a behavioural medicine approach to oral hygiene self-care for patients with chronic periodontitis. *Methods:* Two experimental single-case studies with multiple-baseline design across different self-administered oral hygiene behaviours were conducted. Cognitive Behavioural techniques were used to organize the strategies for the intervention and the approach to counselling was inspired by and structured in accordance with Motivational Interviewing. The central features in the programme were the individual analysis of knowledge and oral hygiene habits, individually set goals for oral hygiene behaviour, practice of manual dexterity for oral hygiene aids, continuous self-monitoring of the behaviour and prevention of relapse. *Results:* Both participants reached the predecided criteria for clinical significance in reducing plaque and bleeding on probing. Reductions of periodontal probing depth were achieved as well. The positive results remained stable throughout the 2-year study period. *Conclusion:* The successful application of this educational model suggests that it could be used as a method for tailoring interventions targeted to oral hygiene for patients with periodontal conditions. The programme will now be tested in a larger randomized controlled trial.

Key words: behavioural medicine; experimental single-case design; oral hygiene behaviour; periodontitis; social cognitive strategies

Introduction

To improve and maintain patients' long-term periodontal condition, good oral hygiene is of great importance (1). Success in periodontal treatment is therefore highly dependent on the ability and the willingness of the patients to establish and maintain high-quality oral hygiene performance over time (2, 3). Adherence to the oral hygiene advice given by the oral health professional is consequently of importance.

As recently stated in two systematic reviews by the Swedish Council on Technology Assessment in Health Care (4, 5), there is hardly any scientific evidence relating to patient behaviour, patient communication, patient education and methods to support patients in developing effective oral self-care habits. This aligns with the views of Renz *et al.* (6) who stated that there is need for greater methodological rigour in the design of trials in this area. Hardly any of the factors that promote the performance of health behaviour have been used in the development of oral health care, and specifically not in the treatment of patients with periodontal disease. Consequently, there is a demand for a greater use of established theory for health promotion in the development of new interventions to improve oral health (6).

Social Cognitive Theory is an example of a theoretical framework that is commonly used for the description and understanding of different factors influencing health behaviour (7). By a causal reciprocal relation, internal factors like cognitive, affective and biological events, behaviour and environmental events operate as interacting determinants on each other (8, 9). Bandura (9) described a core set of determinants, the mechanisms through which they work, and the optimal ways of applying this knowledge into effective health practices. Examples of those core determinants are knowledge, perceived self-efficacy, outcome expectations and health goals.

In recent years, there has been attempts to integrate cognitive behavioural (CB) techniques with interventions targeting interdental cleaning behaviour by forming action plans for when, where and how to perform daily self-care (10–12), and by using self-reports as an important component for monitoring of behaviour (13). These studies indicated that CB interventions are more effective than standard interventions alone. The common features of the standard interventions were extensive explanation and demonstration about the prophylactic means, oral hygiene instructions after use of disclosing solution and in some studies the patients additionally received an illustrated booklet with all prophylactic information. However, these studies had short follow-up periods (1–3 months) so evidence of any long-term effect is sparse.

To prevent periodontal disease there is a need for life-long adherence to effective oral hygiene habits. Consequently, it is crucial to develop and test integrated cognitive/behavioural approaches in prospective longitudinal studies adapted to regular periodontal treatment. In addition, individual treatment plans should be related to individual goals and problems, i.e. tailoring of treatment. This implies that strategies are based on individual factors (psychological, contextual and physiological), that are related to health outcomes of interest and derived from an individual assessments (14). In oral health education, and especially in standard periodontal treatment, a targeting approach is the most common. Such an approach requires development of programmes that take into account the common characteristics shared by the subgroup's of interest, for example persons with peridontitis.

Experimental single-case studies are well suited in the development of new treatment programmes and to test their efficacy (15). They are specifically useful for understanding when, how and under what conditions an intervention is effective and it also provides opportunities to make refinements in the intervention before it is applied in a larger group study (16). In experimental single-case studies inferences about the effect of the intervention are made by comparing different conditions presented to the same case. That means that the person under study thus serves as her or his own control. The rigorous control over the studied cases (baseline assessment, continuous assessment during the study and use of different phases) makes it possibly to rule out or make implausible threats to the internal validity and permit causal inference about each individual case to be drawn (15, 16). These relations need to be further studied in group settings.

The aim of the present study was to describe and evaluate an individually tailored treatment programme based on a behavioural medicine approach for oral hygiene self-care in patients with chronic periodontitis. More specifically, this study aims to describe the programmes' short- and long-term effect on oral hygiene behaviour, dental plaque control, gingival and periodontal health and individually long-term goals in two experimental single-case studies.

Materials and methods

Design

Two experimental single-case studies with multiple-baselines over two different self-administered oral hygiene behaviours were conducted. These two oral hygiene behaviours were (i) toothbrushing and (ii) interdental cleaning. In the multiple-

baseline design baselines measurements are collected for all target behaviour simultaneously, but the interventions are introduced at different (points of) times. Ideally, only the targeted behaviour would be influenced by the specific intervention while the un-targeted baselines should stay unaffected. Provided that the dependent variables is stable during the baseline phase (pre intervention) and they change when, and only when, the intervention is implemented in each baseline representing the target behaviour, the change is likely attributed to the intervention rather than to extraneous events (15).

Outcomes measures

For each case two outcomes were selected to reflect oral hygiene and gingival health; plaque (PI) and gingival (GI) indices. PI and GI calculated for vestibular and lingual surfaces reflected the toothbrushing behaviour, and inter-proximal tooth surfaces the inter-proximal cleaning behaviour. PI and GI were recorded on vestibular, lingual, mesial and distal tooth surfaces of all teeth. The mesial and distal surfaces were recorded from the lingual perspective. A modified three-grade (0–2) PI according to Silness and Löe (17) and a modified version of Löe and Silness three-grade (0–2) gingival index (18) were used. A mean score for all teeth were calculated. The maximum mean value for both PI and GI was two.

Periodontal measures

The initial clinical examination consisted of a health history covering areas like general health status, medications, smoking habits and the patient's social situation. The probing pocket depth (PPD) was measured at six surfaces of each tooth, and bleeding on probing (BoP) in connection with the measurement of periodontal pockets. The assessments for both plaque and gingivitis and the periodontal data were performed with a mirror and a Hu-Fridy Williams Probe.

Oral hygiene behaviour

The assessment of oral hygiene habit consisted of questionnaires and clinical data previously recorded. A questionnaire was completed by the participants immediately after the first clinical examination and before the clinical examination at the 3-, 12- and 24-month follow-ups. The questionnaire covered oral self-care habits such as frequency of toothbrushing and interdental cleaning, type of toothbrush and interdental cleaning aid, and when and where the oral cleaning was performed.

Long-term goals

The extent to which the long-term goals were reached was assessed on a five-point scale from not at all – to completely fulfilled. These long-term goals were discussed and checked after the examination at the 3-, 12- and 24-month follow-up sessions by the dental hygienist and the patient.

Intervention

An integration of CB principles with regular periodontal treatment was made when the treatment programme was organized (7, 8, 19). In order to facilitate this strategy Motivational Interviewing (MI) techniques were used (20). The intervention included the following elements:

Initiation and analysis of knowledge, expectations and motivation

Initially an interview was conducted to ascertain the patient's knowledge of periodontal disease, self-care habits and attitude toward oral hygiene, as well as outcome expectations and experiences from earlier treatment using open-ended questions. The extent to which information about dental diseases was provided depended on each patient's prior knowledge. The patient formulated (in writing) three to five personal overall long-term goals related to oral health that was the most important to them.

Analysis of oral hygiene behaviour

Based on the above data, the dental hygienist made recommendation related to self-care interventions that were discussed with the patient. Disclosing solution was used to illustrate the current oral biofilm and to initiate a discussion related to oral hygiene aids that might support the patient's oral health goal. The patient's motivation to use various oral hygiene aids was explored. A guiding principle was to introduce only one oral hygiene aid at each session, which allowed the patient to use the chosen aid properly and at the desired frequencies before any new aids were introduced.

Practice of manual dexterity for oral hygiene aids

Practice of manual dexterity was introduced when the patient's oral hygiene aid was chosen. Instruction sessions on 'what to do' and 'how to do it' were performed by the wash basin in

front of a mirror to make the circumstances as near to a home routine as possible.

Individual goals for oral hygiene behaviour

At the end of each session the patient's self-efficacy and readiness to change an oral hygiene habit was explored through a direct question. Subsequently the oral hygiene procedures; how, when and where to use the desired oral hygiene aid or aids, and which area that should be given particular attention to until the next session, were discussed and decided in agreement. The action plan for oral self-care to the next session was subsequently formulated in writing. Patients were encouraged to start using the oral hygiene aid they deemed to have the best chance of being successful in reaching the intermediate goal.

Continuous self-monitoring

A short structured diary was introduced to the patients for keeping records on their self-care between the sessions. Recordings included the aids used, their frequency and when they were used as well as associated factors that facilitated their use or created barriers for their use. The diary was discussed and analysed at the next appointment. Positive experiences were encouraged, problems identified, and possible solutions to the latter discussed.

Generalization of behaviour

When all self-care aids had been introduced and practised they had to be co-ordinated to function together. The individuals' preference, knowledge and capacity to adapt necessary oral hygiene aids differed between aids. The dental hygienist allowed the self-care process to develop in a way that supported individuals to go at their own pace.

Maintenance of oral hygiene behaviour and prevention of relapse

The patient was informed that relapses are common during behavioural change (21). Strategies to maintain already achieved goals for oral hygiene were discussed. Specific risk situations for interdental cleaning relapse were identified (e.g. summer holiday, periods of work-overloaded), and problem-solving strategies were discussed. The discussions focused on situations in which oral hygiene was facilitated and how to find solutions to problems that the patient encountered. If difficult/demanding situations were identified a plan was made up aimed to prepare the patient how to handle these situations. If there were signs of a relapse to previous insufficient oral hygiene habits, disadvantages and advantages were discussed.

Study phases

Each case consisted of three different study phases: baseline; intervention and follow-up/maintenance phase. The intervention phase was separated into two sections; analysis and applied skills and generalization. The different phases are identified in Table 1.

Setting

This study was conducted at the Department of Periodontology in a Swedish county council. The patients were referred to the clinic for periodontal treatment. The intervention was conducted by an experienced dental hygienist (the first author) who also performed the scaling treatment. The intervention was supervised by a psychologist. The clinical assessments were performed by the same examiner, a specialist in Periodontology, for both subjects throughout the course of the study.

Participants

Some of the self-reported characteristics for the two cases at inclusion are shown in Table 2.

Data analysis

The Microsoft Office Excel 2003 for Windows was used for the descriptive statistics. To conclude whether the intervention programme had a clinically significant effect, criteria for improvement were formulated in advance. The mean PI (for all calculated tooth surfaces) should be reduced to a mean level close to 0.20 (22). For clinically significant periodontal improvement the mean BoP index should be below 20% of the total number of tooth surfaces (22, 23). Visual inspection of the changes in mean, level, trend and latency of change across the different phases was applied for judgement of the intervention effect (15).

Ethical considerations

The two participants received both written and verbal information about the study and gave their written consent. The study was approved by the Ethics Committee of Uppsala University, Sweden.

Table 1. **Study phases and the measurements in each phase**

Phases	Measures/contents	Comments
1. Baseline	Case history	Case history, PPD, BoP were measured once
	PPD and BoP	PI and GI were measured at all sessions
	PI and GI	Three sessions in a 3-week period
	Treatment plan	
2a. Analysis and applied skills	Intervention component I–V	Three sessions in a 3-week period in 45–75 min sessions once a week
	PI and GI	PI and GI were measured at all sessions
2b. Generalization	Intervention component VI–VII	Two to three sessions (45–75 min/session). The last session of the intervention was carried out 1 month after the previous session
	PI and GI	PI and GI were measured at all sessions
	Periodontal debridement	The patient was scheduled for one or two appointments during the week the periodontal debridement was performed
3. Follow-up/ maintenance	PPD and BoP	3-, 12- and 24-month follow-up examinations and two maintenance care session in-between
	PI and GI	PI and GI were measured at all sessions

PPD, probing pocket depth; BoP, bleeding on probing; PI, plaque index; GI, gingival index.

Table 2. **Characteristics for the two cases**

	Participant 1 Mrs A	Participant 2 Mr B
Age (years)	50	60
Smoking habits	Non-smoker	20 cig/day
Self-reported general health	Good	Fairly good
Medication	None	None
Self-reported general life situation	Satisfied	Satisfied
Self-reported oral health and satisfaction with teeth	Neither good nor bad	Neither good nor bad
Dental care visits prior to referral	Irregular Dentist a few times in the last 7 years Dental hygienist once before referral	Regular Dentist once a year Dental hygienist (irregular)
Dentition (remaining teeth)	Maxilla: 12 Mandible: 11	Maxilla: 11 Mandible: 12
Main oral problem	Sensitive teeth	No problem. Wanted to be informed about present dental status
Other		Referring dentist remarked that the compliance with self-care advice was very poor

Results

Participant 1 (Mrs A)

Oral hygiene behaviour

At baseline Mrs A reported toothbrushing twice a day using a manual toothbrush and disclosed an insufficient toothbrushing technique. She used dental floss six times per week and toothpicks after meals to remove food impaction. In the intervention phase she decided to change from a manual toothbrush to a power toothbrush once a day but continued to brush with the manual toothbrush once a day. She changed technique and interdental aids during the intervention and at the first evaluation in the follow-up phase (week 21) she reported cleaning with triangular toothpicks and interdental brushes (0.8 and 1.2 mm) once a day as per her action plan. At the 1-year follow-up, toothpicks were used as the main daily interdental cleaning aids, and interdental brushes were used 2–3 times per week. At the 2-year follow-up she cleaned her teeth with a power toothbrush once a day and interdental cleaning was performed by toothpicks and interdental brushes on a daily basis.

The mean rate of PI and GI, measured on the vestibular and lingual surfaces for toothbrushing and inter-proximal surfaces for interdental cleaning, changed from phase to phase in the expected direction. During baseline a visual inspection of the index for vestibular/lingual surfaces and inter-proximal surfaces showed no trend in either direction for PI and GI respectively. When the intervention was introduced at week four (a new toothbrushing technique was introduced and brushing skills was practise), a rapid decrease for both PI and GI occurred for the vestibular and lingual surfaces (Fig. 1a). During week five and six when interdental cleaning aids were introduced a rapid decrease of PI occurred from 1.1 to 0.3 (Fig. 1b). As could be expected, there was a delay in the decrease in the GI but it followed the PI closely. The baseline levels for inter-proximal surfaces were not affected by toothbrushing alone and did not change until the interdental cleaning aids were introduced. The decrease for both vestibular/lingual surfaces and inter-proximal surfaces was maintained throughout the study.

The total PI showed an average value of 0.58 (Baseline phase), 0.50 (Analysis and applied skill phase), 0.16 (Generalization phase) and 0.18 (Follow-up/maintenance phase) respectively. The corresponding figures of the gingival index were 0.64 (Baseline phase), 0.55 (Analysis & applied skill phase), 0.15 (Generalization phase) and 0.20 (Follow-up/maintenance phase) respectively.

Periodontal measures

There were 14 (11%) tooth surfaces with PPD ≥ 5 mm and the overall BoP score at the baseline examination was 68%. Both the number of PPD ≥ 5 mm and the BoP decreased after treatment and did not change in depth or number during the study (Table 3).

Long-term goals

The patient formulated and ranked three long-term goals for treatment. The most important was 'Being able to speak with people without being worried about bad breath', followed by 'Increase my chances to keep my present teeth for the future' and finally 'Keeping my gum healthy without bleeding'. At the 3-month follow-up the first and second goals were completely fulfilled and the third goal was partly fulfilled. At the 2-year follow-up, the patient stated that all three goals were completely fulfilled.

Participant 2 (Mr B)

Oral health behaviour

At baseline Mr B reported that he brushed his teeth with a manual toothbrush twice a day. Despite the regular tooth-

Table 3. **Periodontal outcome measures**

	Baseline	Follow-up 3 months	Follow-up 1 year	Follow-up 2 years
% Pocket depth ≥ 5 mm				
Mrs A	11	2	2	1
Mr B	26	2	2	4
% Bleeding on probing				
Mrs A	68	10	16	6
Mr B	83	16	15	10

Percents of probing pocket depth ≥ 5 mm and per cents of bleeding on probing before and after treatment and at 1- and 2 years follow-up for participant 1 and participant 2 respectively.

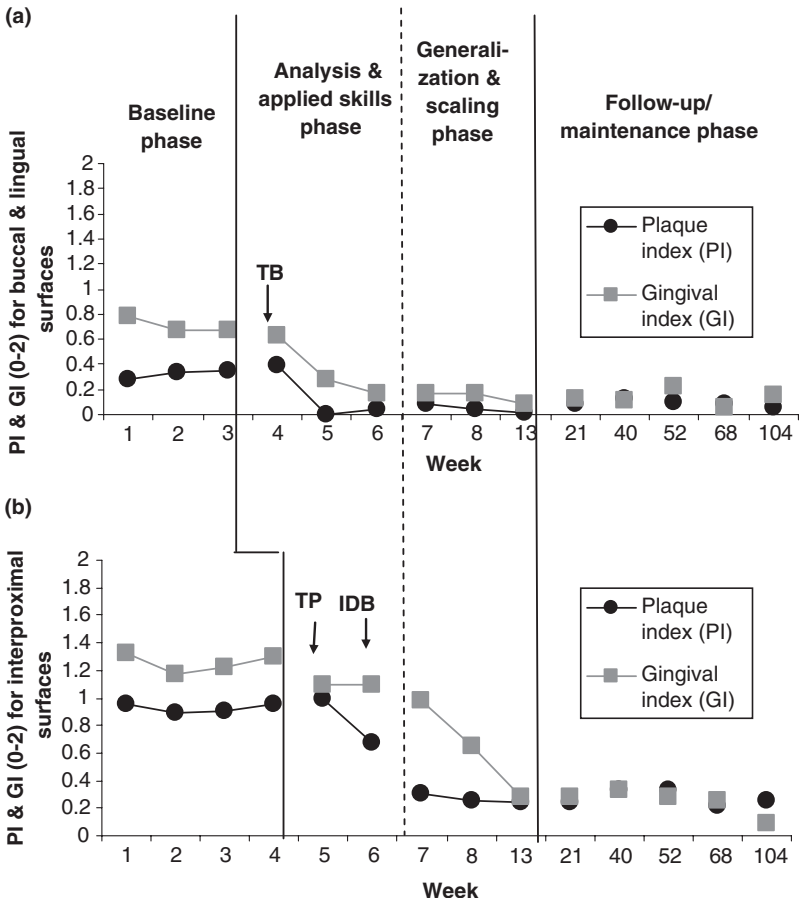

Fig. 1. (a and b) Results showing Mrs A's plaque and gingival indices in relation to toothbrushing (TB) and interdental cleaning (toothpicks, TP or interdental brushes, IDB). Indices related to toothbrushing are records from the buccal/lingual surfaces (a) while inter-dental cleaning are records from the inter-proximal surfaces (b). Low scores indicate low amounts of plaque and healthy gum.

brushing habits, almost all lingual tooth surfaces had plaque left. Earlier he had been recommended to use dental floss and toothpicks for daily, but did this very sparsely, mainly when food impaction occurred. During the intervention he improved his toothbrushing technique and he chose to clean between his teeth on a daily basis. At the 3-month follow-up examination, he still brushed with a manual toothbrush twice a day and used triangular toothpick and interdental brushes (1.1 mm) once a day as per his action plan. Both toothpicks and the interdental brushes were used when he watched television in the evening. These self-care habits remained the same during all phases until the 2-year follow-up examination. However, at the last follow-up appointment he reported some alteration concerning the interdental brushes; he was now using them before toothbrushing in the evening.

The mean rate of PI and GI, measured on the vestibular and lingual surfaces for toothbrushing and inter-proximal surfaces for interdental cleaning, changed from phase to phase in the expected direction. During baseline a visual inspection of indices for vestibular/lingual surfaces and inter-proximal surfaces showed no trend in either direction for PI and GI respectively. When the intervention was introduced during week four (a new toothbrushing technique was introduced and brushing skills was practise), a rapid decrease for both PI and GI occurred for the vestibular and lingual surfaces (Fig. 2a). At week five when toothpicks were introduced a rapid change in PI occurred from a mean of 1.5 to 0.6 (Fig. 2b). As expected, there was a delay in the decrease in the GI, but it followed the PI closely. The baseline for inter-proximal surfaces PI was only slightly affected by toothbrushing alone, and the decrease was more pronounced after interdental cleaning aids were introduced. Regarding inter-proximal surfaces data a small peak was seen during week 35 (PI 0.40; GI 0.65). However, both PI and GI were later stabilized at a mean of around 0.20.

The total PI showed an average value of 1.18 (Baseline phase), 0.92 (Analysis and applied skill phase), 0.27 (Generalization phase) and 0.13 (Follow-up/maintenance phase) respectively. The corresponding figures of the gingival index were 1.17 (Baseline phase), 1.21 (Analysis and applied skill phase), 0.55 (Generalization phase) and 0.21 (Follow-up/maintenance phase) respectively.

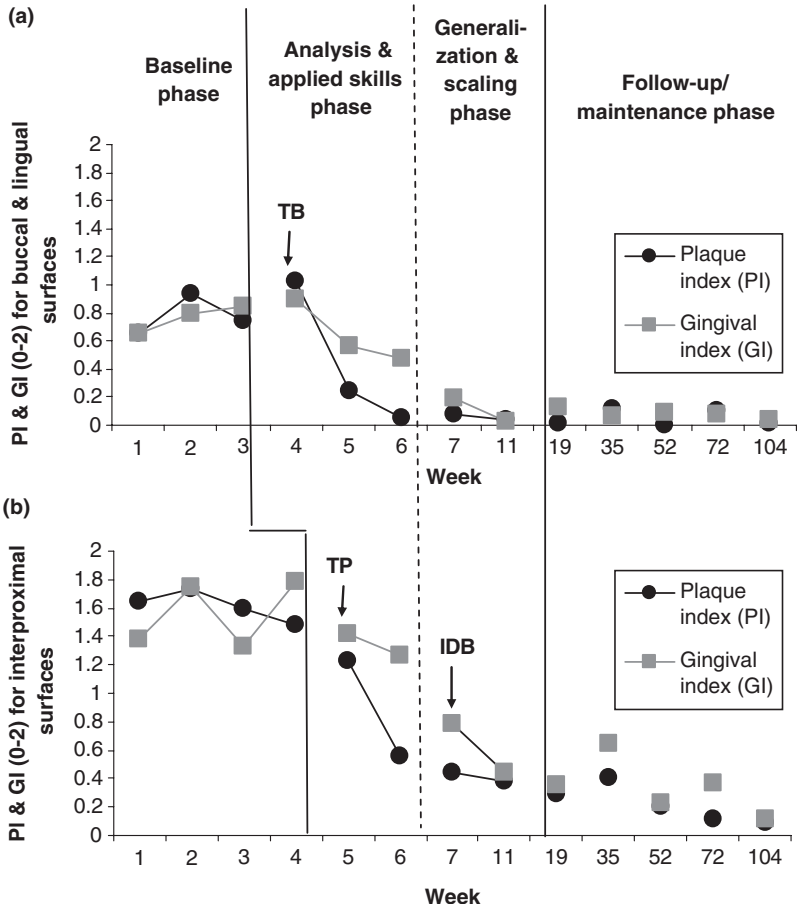

Fig. 2. (a and b) Results showing Mr B's plaque and gingival indices in relation to toothbrushing (TB) and interdental cleaning (toothpicks, TP or interdental brushes, IDB). Indices related to toothbrushing are records from the buccal/lingual surfaces (a) while inter-dental cleaning are records from the inter-proximal surfaces (b). Low scores indicate low amounts of plaque and healthy gum.

Periodontal measures

There were 36 (26%) tooth surfaces with PPD ≥ 5 mm and the overall BoP score was 83% at the baseline examination. Both the number of PPD ≥ 5 mm and the BoP decreased after the treatment and remained stable in both depth and number during the study (Table 3).

Long-term goals

The patient formulated and ranked four long-term goals for the treatment. The most important was 'Having a healthy gum', followed by 'Keeping my present teeth for the future', thirdly 'To brush my teeth more carefully and use toothpick to prevent gum disease', and finally 'Getting whiter teeth'. Those goals were checked at the follow-up examinations. At the 3-month follow-up the first and the third goals were fulfilled, and goal two was partly fulfilled. The fourth goal was not fulfilled. At the 12- and 24-month follow-up, Mr B stated that fulfilment of the goals was the same as the evaluation at the 3-month follow-up.

Discussion

The main result from the present study was that the individually tailored treatments based on an integrated behavioural and oral health approach could be successfully applied in the two study participants. Both reached the clinical significant improvement for plaque (22, 24, 25), suggesting that the intervention was effective to improve oral hygiene practise. Further, the predecided criteria for BoP were achieved. The positive results remained stable throughout the 2-year study period for both participants.

In the present study, the participants chose long-term goals that were not only related to periodontal status, but also reflected other objectives. For instance, goals like achieving a good cleaning technique (Mr B) and to avoid anxiety related to bad breath (Mrs A) reflect behaviourally and psychologically relevant areas rather than bio-medical goals. The participants' individual long-term goals reflected the ambitions for their future oral health and treatment. Goals contribute to the enhancement of the individuals' motivation for performance provided that they find them important and attainable. Patients should also be confident and knowledgeable about how to reach them (26).

Plaque index and GI were used as outcome measures to visualize short- and long-term oral hygiene practise. As the individual development of gingivitis is closely correlated with plaque accumulation (27) the PI and GI published by Silness and Löe (17) and Löe and Silness (18) are particularly useful. The GI showed a small increase at week 35 for Mr B but the PI remained on the same level as earlier examinations. Mr B confirmed the findings by reporting that he had used toothpicks less frequently during the summer-break, which occurred shortly before week 35.

The essential part of the programme was to help individuals to find cognitive and behavioural strategies appropriate to initiating and maintaining desired oral hygiene behaviour. The individual case history and analysis (including dental status, earlier experiences, knowledge, perceived self-efficacy and motivation) was the base for tailoring the treatment to each individual's problem, capacity, goal and specific oral hygiene tools. Formulating action plans at every session in writing by the patient was an important process of linking the goal directed behaviour to when, where and how to act. The goals were individually set and both cognitive and environmental circumstances that could affect the person's behaviour were discussed thoroughly.

Monitoring behaviour according to self-care assignments and identified risk situations were also central features of the programme. By filling in the diary between every session it was possible for the patient to assess how she or he had managed to follow the action plan and which positive and negative experiences the patient had had during the week. The structural and consequent follow-up of the diary and oral hygiene procedures on an almost weekly basis gave possibilities to reformulate the intermediate goal. This procedure together with the discussion of strategies and the plans for how to manage difficult situation was probably the strengths of the intervention, in that the patients took an active part in the process for their own oral self-care.

Individualized goal setting is probably practiced by some dental hygienists, and cognitive-behavioural strategies has also been evaluated in studies within oral health (10–13, 28). However, a combination of several cognitive-behavioural strategies integrated into a programme in periodontal treatment has not been evaluated, and there is also a scarcity of knowledge about long-term adherence. MI (20) was used as a tool to facilitate the counselling process between the dental hygienist and the patient. MI has earlier in one study been used as a component in an intervention for periodontal patients (29). While our primary intention was to design an integrated programme, we were also interested to determine if it was possible for dental hygienists to apply the method in their practices; this was in fact confirmed in the present study.

The intervention presented here may be more time-consuming compared with traditional patient education (30, 31). It is

well documented that periodontal health could be maintained with frequent scheduled recalls every other week to every third month (1, 31). However, in the second year of the present study the maintenance intervals became less frequent (twice a year) with concurrent positive oral health behaviour. This supports the assumption that the method described could be cost-effective in the long run.

A multiple-baseline design to test the intervention was used since it is not possible to fully withdraw the intervention (i.e. knowledge, cognitive strategies) once it was introduced. The plaque and gingivitis scores were practically unchanged during both baseline (vestibular/lingual and inter-proximal surfaces) measures and the outcome did not alter until the intervention was introduced. The rapid change of the slope and level also support a functional relationship between intervention and outcome. This change is most likely attributed to the intervention rather than to factors such as maturation and history (15).

Experimental single-case studies do not replace experimental group studies and it is not possible to generalize the result to a larger group. The advantage with the design is the possibility to test if a method is effective before any large group study is implemented. This is important both from an ethical and an economical perspective. Experimental single-case studies are used to some extent in health care especially when developing new treatment strategies (32–35), but to our knowledge not described in the area of oral health research.

Conclusion

The individually tailored treatment programme seems efficacious and useful to improve long-term adherence to oral hygiene in periodontal treatment. Such programmes need to focus on the patient perspective since all actions originate from the patient thoughts, intermediate and long-term goals. Finally, periodontal health was substantially improved based on the selected clinical criteria. The programme is now being tested in a randomized controlled trial and by doing so it is also being adapted to a larger clinical practice sample.

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