Props and Pitfalls in Oral Health Promotion in the Practice

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Abstract: *Practitioners often become demoralized and demotivated with regard to promoting the oral health of their patients as, so often, their efforts appear to be fruitless. This paper examines the published evidence and draws on behavioural theory in order to help practitioners understand what help and support they can offer their patients in order to improve oral health.*

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Clinical Relevance: *The development of a good relationship between a patient and the dental team will help maximize the patients' responsibility for his/her oral health.*

If you were working on a tooth with a high-speed turbine which wouldn't cut because the engine was faulty, or you had difficulty when excavating a carious deciduous molar because the instrument was bent or corroded, would you continue trying to complete the task? Would you battle on regardless and end up with a 'botch-job'—or would you get fed up and change your instrument to one that worked properly?

No-one likes to work with unsatisfactory tools that don't function as they should. And yet, when we try to 'motivate' patients and they do not respond to our exhortations, we tend not to address the real problem—our faulty tools or technique—but instead we blame the patient.

A practitioner at a conference once said, in despondent tones: 'my preventive chisel is blunt'. He had recognized that, although he was trying his very best to run a health-promoting practice his progress was slow, unpredictable and he was not getting worthwhile results. His frustration with his ineffective tools was evident. And, just as he would give up with a faulty turbine, his demoralization was affecting his commitment to oral health.

If you are considering 'retooling' to become a more health-promoting practice, which will benefit the patients attending it, you will need to have an appropriate and effective set of techniques to work with. If you are to encourage people to adopt behaviours that will enhance their health (and here it is worth saying that a patient's day-to-day behaviour will affect their health infinitely more than *anything* done within the practice walls) you will need to know something about the mechanisms that affect what people do, why they do those things and how they feel about their actions.[1] Perhaps the easiest way to seek such understanding is to examine our own efforts at behaviour change.

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UNDERSTANDING OUR OWN BEHAVIOUR AND THAT OF OUR PATIENTS

Do you absolutely always do what you need to in order to achieve your personal goals? (Figure 1). Do you smoke? Do you take sufficient exercise? Have you ever 'dieted' without losing a single pound? Do you ever drink more than the prescribed number of units of alcohol in a week?

Although doubtless there are some paragons reading this article, who are able to say that their behaviour is never counterproductive to their aims in life, most people will admit to the odd aberration! Consider the student studying for exams. Although he is well aware of what needs to be done, often

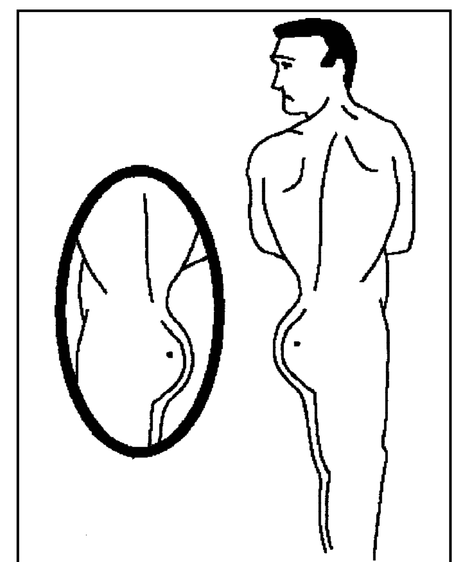

Figure 1. *Self-analysis can be highly revealing.*

Goal	Action
'I will attend all the lectures I can'	Misses two in a row because of new boy/girl friend
'I will read the literature on a regular basis'	Finds brilliant novel which can't put down. Never reads dental journals
'I will be nice to all the other staff and all the patients'	Has a bad day and bites receptionist' s head off when a set of notes is unavailable
'I will not drink too much'	Goes to a party and drinks seven cans of strong lager
'I will lose some weight'	Passes cake shop with friend who is heavier and both buy two cream cakes

Table 1. *The complex nature of human behaviour*

he will indulge in all sorts of distracting activities which he has persuaded himself are necessary and essential. These other seemingly terrifically important occupations are at best inconsequential (tidying up the flat) and at worst counterproductive (going out and getting drunk). If you think hard about your own behaviours, you will recognize that you do not always follow a rational path towards the achievement of your goals.

And yet, dental personnel repeatedly fall into the trap of thinking that if we inform our patients about what is helpful, or harmful (a healthy diet, brushing regularly, attending for all their appointments, taking all the tablets in the bottle) they will be good, sensible people and go and do these things. This is clearly an inappropriate expectation and flies in the face of the mountain of evidence suggesting that human behaviour is not entirely based on rationality. Some (perhaps familiar) scenarios listed in Table 1 are examples of the complex nature of human behaviour.

So, what can we do in practice to enhance our patients' oral health? The answers must be sought through science. We live in the era of 'clinical effectiveness' and 'evidence-based healthcare' and thus, if we are to employ hard-earned resources on promoting oral health, we need to use scientific evidence as the foundation for our actions.

DEFINITIONS

A scientific approach demands that we first define what it is we are trying to do. Easy! Oral health promotion is about promoting oral health. But what *is* oral health? Come to that, what is health? Is health a simple lack of pathology? Or is it a feeling of well-being and control? Is oral health about having no active disease in our mouths? Or is it simply feeling that we do not need any treatment? Or perhaps someone can be defined as being orally healthy when they look good, speak articulately and can chew their food?

The point is that, unless we are clear about what we are trying to achieve, we cannot expect to be successful. So, the first step to oral health promotion in your practice is to decide on a definition of oral health that is relevant to you, your team and, most importantly, your patients.

Having decided upon exactly what your team wishes to promote in your practice, the second step is to find a reliable and 'resource effective' method of achieving your goal. Of course, many practitioners will have developed their own methods of attempting to motivate patients. However, according to the 'evidence-based' healthcare philosophy, all our actions should be based on scrutiny of the scientific evidence. This may not be as easy as it sounds. A recent systematic review of the oral health promotion literature[2] (194 papers) has demonstrated that, despite hundreds of studies involving thousands of patients, we really have very little hard evidence on which to base our health-promotion efforts in practice.

THE AVAILABLE EVIDENCE

Amongst all the studies reviewed, very few evaluated efforts to reduce sugar consumption. The research evidence is sparse for this subject but, unfortunately, it must be said that at the present time there is no strong evidence to support the effectiveness of giving dietary advice and/or offering dietary counselling. However, many practitioners rightly believe that, because the epidemiological evidence regarding sugar and caries is so very strong, they must at least inform their patients of this potential threat to their oral health. This is an admirable stance and many may have observed success resulting from their efforts. The review simply showed that no-one has yet *shown* diets to be altered as a result of a dietary intervention.

Furthermore, not one single paper could be found to support the hypothesis that dietary intervention affected caries levels (which is unsurprising since there was no evidence that dietary practices could be changed). Indeed, the *only* methods that have been proven to reduce caries involve the use of fluoride in some form. Advice, exhortation, diet diaries, etc. have not been shown to affect caries levels, for either individual patients or subgroups of the population. This does not necessarily mean that giving dietary advice is a waste of time, just that it has not been demonstrated to reduce decay levels. In contrast, the evidence that the use of fluoride (as paste, tablets, drops, gels or rinses) reduced caries is strong. Of course, because of social norms and powerful marketing, daily brushing with a fluoride toothpaste is easier to achieve than regular use of any other fluoride supplement.

Furthermore, there is strong scientific evidence that people *will* brush as a result of simply being told by a healthcare professional that it is advisable. This heartening news must, however, be followed by a caveat. The research evidence clearly shows that the changes patients make as a result of advice from dentists are short-term and unlikely to be sustained. This implies that oral hygiene advice must be given at every visit to remotivate the patient.

Another important finding in the literature is that teaching people about their oral health is invariably effective for improving people's knowledge levels. Unfortunately, there is not yet any firm proof to show that shifts in knowledge result in clinical, behavioural or health changes. Indeed, the evidence suggests that changes in knowledge are often *not* related to changes in behaviour. This is not meant to imply that it is not valuable for us to educate our patients. As dentists,

we do not have a right to withhold potentially useful information from our patients. It seems ethical to tell our patients what we know, regardless of what they do with that knowledge. We must be sure to impart clear, scientifically sound information to patients—but must not be disheartened when receipt of that information makes absolutely no difference to their behaviour.

So the evidence showed that sustained use of fluoride definitely reduces caries and that good oral hygiene is an achievable goal, promotes gum health and is related to patient self-esteem. Thus, 'brush every day with a fluoride toothpaste' is the only clinically effective means of reliably promoting oral health, supported by research evidence! Rather dull, but true! If your practice wishes to undertake actions that are known to make a real difference to the patients' clinically measured health, the team must concentrate on this message and aim to change the behaviour of any patient who does not brush daily with a fluoride paste.

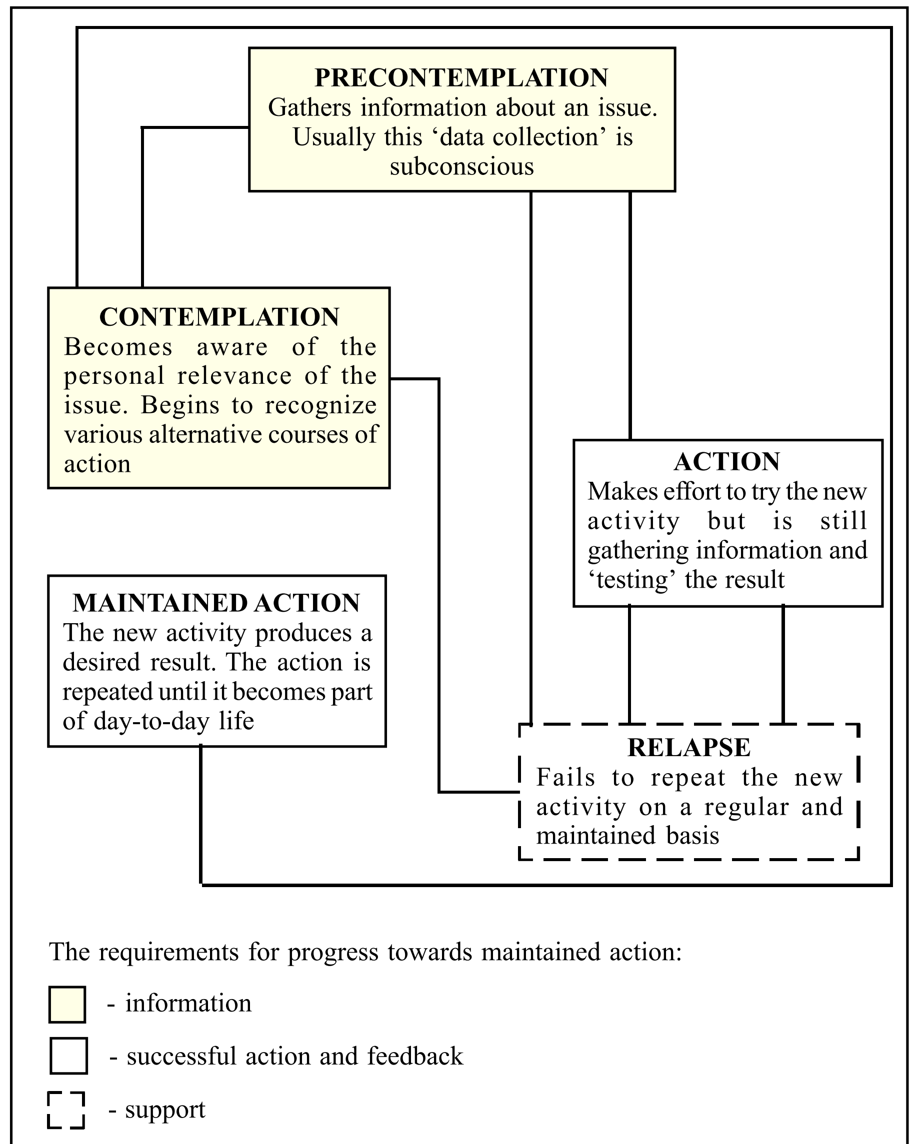

Figure 2. *The web of behaviour change.*

THE PROCESS OF CHANGE

Imagine a person who has decided to make changes in their life—giving up smoking is a good example to illustrate the steps towards change. First, a person is unlikely even to consider giving up something which they enjoy if they are not aware that it is harmful. Most people know about the dangers of smoking—but this knowledge has come about via sustained information campaigns, powerful lobbying groups, dissemination of the results of trials, etc., etc. So, long before a person takes action, they gather information (sometimes almost subconsciously). This is the *precontemplation* stage of change (Figure 2).

Once the thought that they ought perhaps to do something about their current way of life has arisen in their mind, they are sensitized to further information, and will listen carefully, weigh up the alternatives, and perhaps even ask for advice from people who have been through similar experiences. This is the *contemplation* stage of change.

During the precontemplation and contemplation stages of change, the giving of information is important to the continuation of the process—but receiving the information does *not* mean that the person will necessarily immediately change their behaviour. Precontemplation and contemplation are lengthy stages, and a host of other factors, which will be explained later, come to bear on the person, and will determine whether or not they take action as a result of the information gleaned.

It is vital that dentists understand that these stages are an important part of behavioural change. This understanding helps you to continue to give information even though you do not witness immediate results. Information *is* necessary and *is* a prerequisite to patients choosing a healthy behaviour pattern. The understanding that it is only a part of the process is necessary if the 'preventive chisel' is not going to be thought of as useless and blunt! Thus, with patients who have not yet taken up the habit of daily brushing, the first step is to provide them with information, verbal or written, which will help them to make decisions about the best way to care for their oral health—but without necessarily expecting their oral hygiene practices to alter.

The next two stages of behaviour change are *action* and *maintenance of action*. Again, it is vital to recognize that these are not ends in themselves but are part of a process.

A further part of the process of changing behaviour is *relapse*. Relapse occurs when

a person returns to their old habits. This is almost invariable, and it is important to expect it, and support rather than reprimand people in this stage. If a patient is made to feel like a naughty child when they fail to maintain a new behaviour, they will be alienated and are likely to return to the precontemplation stage. Support and reassurance that their slip up is not the end of the world is vital if they are to return to action. Let us go back to the smoking example. The new 'non-smoker' has not touched a cigarette for 2 months. All the friends and family have stopped saying 'Oh clever you, stopping smoking—you're doing really well' and have assumed that the reformed smoker is now a non-smoker. At a party, with inhibitions and strength of mind at a low ebb, the reformed smoker thinks: 'I'll just have one. A few puffs won't hurt, I'll be off them again tomorrow', and proceeds to take a proffered cigarette. The next day, if the person's family and friends take the attitude that the smoking person is a failure, and make it clear that they consider the person to again be a smoker—and that is exactly what will happen—the individual will return to being a smoker. If however, supportive peers remind the person that they are a *reformed* smoker, that parties don't happen every day, that the cigarette was an understandable slip and that they can now resume their non-smoking persona, the smoking habit is much less likely to begin again. Therefore, continued support for a new habit is required for a long time, particularly when the individual concerned is finding things difficult.

Remember, making people who have tried something new feel like a failure when they do not immediately succeed is highly counterproductive.

KEEPING THE NEW BEHAVIOUR GOING

Very few of us will do anything unless there is something which we truly want, which can be achieved as a result of our actions. This section deals with how we learn about the consequences of our own actions.

Operant Conditioning

A very important principle to be aware of in relation to attempting to change behaviour is operant conditioning. The theory of operant conditioning says that the consequences of any action determine the likelihood of that action occurring on a subsequent occasion. Put simply, if something nice happens after you have taken a particular action, you are more likely to take the action again. If something unpleasant happens as a result of your action, you are less likely to do it again.

Applying this theory to toothbrushing—the action of brushing may elicit a reward or positive reinforcer, because it makes the person's mouth taste and feel good. However, if gingivitis is present and the mouth bleeds and feels uncomfortable after brushing, the consequences of the action are unpleasant. In the first instance, brushing is more likely to happen on a subsequent occasion and in the second example it is less likely. The importance of the consequences of an action can be enhanced by other people. Praise and encouragement for an action act as powerful reinforcers. However, it is essential to remember that things which the dental team might consider to be 'rewards' (such as reduction in caries rates, healthy mouths, enhanced chances of retaining teeth) are not necessarily powerful rewards to someone else. Thus, if the principles of operant conditioning are to be used to encourage behaviour change, it is important that the dental team discover from the patient what factors are personally relevant to him. For example, stressing to a teenager how much more kissable they might be with a clean mouth is much more likely to encourage oral hygiene than the prospect of having a healthy dentition and gums in ten years' time.

The power of the consequences of an action to act as a reward are directly related to how closely in time they occur after the action. For example, imagine a patient who is trying to reduce their consumption of sweet foods and drinks in order to prevent dental disease. They are then offered a toffee bar. The rewards from eating the toffee are sweet taste and satisfied hunger—both very immediate consequences. The reward from not eating the toffee is health in the future. Even if the health consequences are much more important than the taste and enjoyment of the snack, psychologically the immediate rewards will be more enticing. Although the health rewards of a behaviour are more important, the time needed to achieve that reward means that the incentive is less 'weighty' than the immediately available (although less valuable) consequences of the behaviour.

Knowing about operant conditioning gives the dental team important clues about specifying rewards which will determine behaviours. Always stress the immediate rewards which a patient will experience from a desired behaviour, rather than the long-term ones, e.g. kissability in a teenager, feelings of self-control when the oral hygiene regime becomes regular, short-term improvements in appearance.

CONSEQUENCES OF AND ANTECEDENTS TO BEHAVIOUR

Every piece of behaviour we undertake has a consequence. How likely a piece of behaviour is to recur will depend on whether this consequence acts as a reward. However, as should be evident from the above examples, the circumstances that precede a behaviour pattern are also important. These circumstances are called the *antecedents* to behaviours. For example, you will take biscuits from a plate offered to you, even though you neither want nor like them. Therefore, it is important to remember that although patients may wish to change their behaviours for the sake of their health, the environment in which each decision takes place will have an important bearing on what actions occur.

This can be useful. If a person showers and shaves every single morning but their oral hygiene practices are intermittent, encouraging them to make the likely behaviours (showering, shaving) dependent upon the unlikely behaviour (toothbrushing) can be helpful. By training themselves to do this, the person is rearranging the antecedents and consequences of their behaviour, and thus the brushing is more likely to become a habit. With each person it is important to try to find some habitual behaviour with which the new, desired behaviour can be paired. Your grandmother probably used this principle when you were small, by saying 'If you eat your dinner, you can have some pudding.'

SETTING GOALS

Throughout the process of behaviour change, it is very important that the involved parties are very clear about what

they are trying to achieve. Not setting clear goals is certain to lead to failure. Statements such as 'You need to improve your oral hygiene' do not make it clear to the person what it is they need to do, nor why. However, the statement 'You'll find your breath is much fresher if you can clean around the back of your last tooth—I'll show you the plaque there today and we'll try to half the amount by your next visit. The way to reach it is...':

1. gives the patient a personally relevant reason for taking action;
2. makes it clear what is to be achieved; and
3. offers them a technique whereby the goal can be achieved.

Making precise statements about why the patient (rather than the dental team) might want the behaviour to change, offering an exact and achievable goal and remembering to demonstrate the appropriate techniques, is vital.

LAST THOUGHTS

Patients are individuals. It is not possible to describe a means by which all patients can successfully become orally healthy. It is only possible to demonstrate which changes are known to bring about oral health. This paper was written to encourage the dental team to offer support and help to patients if they want to change and so that the dental team can ensure that they support the **changes** which are most likely to improve oral health.

It should be clear from what has been said that if there is one key to promoting oral health in your practice, it is communication. Without good communication skills, the dental team cannot identify the stage of change the patient has reached. They will also be unable to glean the necessary information about the patient's current beliefs and behaviours. Without a high degree of interpersonal skill, dentists and their teams cannot possibly identify the rewards and incentives that are appropriate for each individual patient; nor will they have sufficient insight into that patient's lifestyle to allow an understanding of the barriers to, and antecedents and consequences of, healthy behaviours. A good relationship with their patients will help the team to utilize and enhance patients' beliefs in themselves and support the patient's sense of control and responsibility for their own health. Most importantly, it will allow them to communicate the necessary incentives, goals and skills in an effective way.

The external influences on our own and our patients' behaviour are myriad. Suffice to say that oral health is only a tiny part of most people's lives. However, being socially acceptable and fitting well into one's peer group is desperately important to almost everyone. These more innate needs do have a connection with oral health. It is up to the dental team to recognize how their own goal (oral health) fits with these more profound influences.

Important influences on behaviour:

- Friends, peers, family social group.
- Improvements to life, positive consequences.
- Negative consequences, especially of difficult behaviours.
- Good outcomes in relation to the effort.
- Environment (social and political), lifestyle.
- Realistic goals which can definitely be achieved.

References

1. Kay EJ, Tinsley S. *Frightening Patients—Frightening Dentists. Communication for the Dental Team*. Brackley: Partners in Practice Publications, 1995.
2. Kay EJ, Locker D. *Effectiveness of Oral Health Promotion: A Review.* Health Education Authority, 1997.

The information in this paper is covered in more detail in Dr Kay's book, which is available from Partners in Practice, 5 Oxford Court, Brackley, Northants., NN13 7XY (Tel: 01280 702600) at the reduced price of £8 inc. p&p for *Dental Update* readers.

Book Review

A Guide to Dental Radiography. By R. Mason and S. Bourne. Oxford Medical Publications, Oxford, 1998 (272pp., £65.00 h/b, £32.50 p/b)

This is the fourth edition of a book that was first published in 1977. At that time, the book was innovative and unique in the field. For this editon, the authorship has been expanded and acknowledgment is given to many colleagues from varying fields of specialization.

The book covers radiation protection, radiographic techniques and procedures as well as specialized imaging techniques. It follows to some degree, the format of earlier editions but with expansion and textual revision of most chapters. The book has gained from a clearer layout and style and there has been inclusion of new material such as the chapter on digital radiography. Within the book, however, there still remains a high proportion of text and many illustrations imported from previous editions. Surprisingly, the authors have retained references which are somewhat dated and descriptions of radiographic techniques, such as xeroradiography and sialography using oil-based contrast medium, which are seldom encountered.

Unfortunately, within this text there are many inconsistencies, inaccuracies, lacunae and typographical errors. Chapter 1, dealing with radiation protection, requires a great deal of revision as not only does it contain errors, but its method of presentation of the relevant regulations/guidelines leaves the reader muddled and confused. This is especially so regarding dose units, the use of the lead apron and dose limits.

The explanation of techniques in some parts of the text is laboured, as with intraoral radiography, while in others it is too superficial. An example of the latter is the section on parallax where the schematics and radiographs are difficult to understand and this is compounded by an incorrect legend accompanying figure 5.25.

In dental radiography/radiology, as with other dental specialties in the last 20 years, there has been a burgeoning of available textbooks. Many of these have now become well established in the field. With this in mind, one cannot be confident that this book, in its present form, will find widespread acceptance amongst its targeted readership.

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