Research Article

Brief Intervention for Smokeless Tobacco Users by Dentist

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Abstract:

The dental team has an important role to play in tobacco cessation and counselling. The present study was conducted to evaluate the effectiveness of the brief intervention for smokeless tobacco users as a longitudinal study. Ninty patients who were assessed to be in the Pre contemplation phase based on the Transtheoretical model, were included in the study. The nicotine dependence was graded according to Talwar et al (2004). Their follow up was done for 1 year. During the inception of the study all the participants showed heavy nicotine dependence. By the end of one year 10 males and 19 females became light nicotine dependent. Our study showed a reduction of 32% in the prevalence of tobacco use after the implementation of the programme using the "5 A" model.

Key Words: Dentist, Transtheoretical model, Tobacco cessation.

Introduction:

Although tobacco death rarely makes headlines, tobacco kills one person every six seconds. (Monaghan, 2002). The WHO report of 2009 on the global tobacco epidemic states that tobacco use kills more than 5 million people worldwide each year and this number is expected to grow. If the current trend persists, tobacco will kill more than 8 million people worldwide each year by the year 2030, with 80% of these premature deaths in developing countries. By the end of this century, tobacco may kill a billion people or more unless urgent action is taken (WHO, 2009).

Despite increased research on smoking, heightened awareness of the consequences of smoking, and considerable publicity about litigation against tobacco companies, statistics published indicate that, overall incidence in India in the population aged 10 years and above, 43% of rural and 28% of urban males are regular tobacco users. Among females, the prevalence in rural areas is 11% and in urban areas it is 5%. It is evident that rural prevalence is higher than urban prevalence for both males and females and overall prevalence is higher in males than in females (Reddy & Gupta, 2004).

Satyanaryana et al (2007) compared the cumulative risk of tobacco related cancers (TRC) in various cities of India and found Bhopal city in Madhya Pradesh to have the highest ratio of tobacco related cancers as compared to all other cancers in males (56.9%). The cumulative risk of tobacco related cancers among males was 3.82% and females was 1.15%. So the risk of developing tobacco related cancer is 1 out of 26 in males and 1 out of 87 in females in Bhopal (Satyanaryana et al, 2007).

The term smokeless tobacco is used to describe tobacco which is consumed without heating or burning at the time of use. Varieties of smokeless tobacco products have been produced on a large scale, commercially marketed and are available in small plastic and aluminum foil packets (Reddy & Gupta, 2004).

The National lung health education programme (Doherty et al, 2002) states that the physician and his or her staff can significantly increase rates of smoking cessation with simple and brief office based programmes which would be part of brief interventions. The elements of such a plan should include the following:

- Document smoking history in the chart of all the patients.
- Motivate quitting.
- Ask about smoking with each encounter and advise to quit.
- Offer referral for counselling.
- Offer pharmacotherapy.

Some patients are also motivated to quit by a telephonic call or a personal letter from their physician with "how to quit literature".

The Transtheoretical model or Stages of change model, has become an influential theoretical model within the discipline of health psychology. The model represents a motivational readiness and continuum of changes in unhealthy behaviour (West, 2005).

Once smokers are identified, it is essential to determine their level of readiness to quit. Failure to do so is one of the major reasons because of which interventions are unsuccessful as individuals are more receptive to interventions tailored to their particular needs, while ignoring those that are irrelevant.

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The dental team has an important role to play in tobacco cessation and counselling. With this background the current study was conducted to evaluate the effectiveness of the brief intervention for smokeless tobacco users by the dentist using the '5 A' Model (Shah et al, 2006).

Material and Methods:

Patients who had come to the Department of Preventive & Community Dentistry with various problems like carious tooth, gum problems but had the habit of chewing smokeless tobacco were selected randomly in 2 months period for this study. The study participants who were assessed to be in the Pre-contemplation phase based on the Transtheoretical model were included in the study (Fig. I).

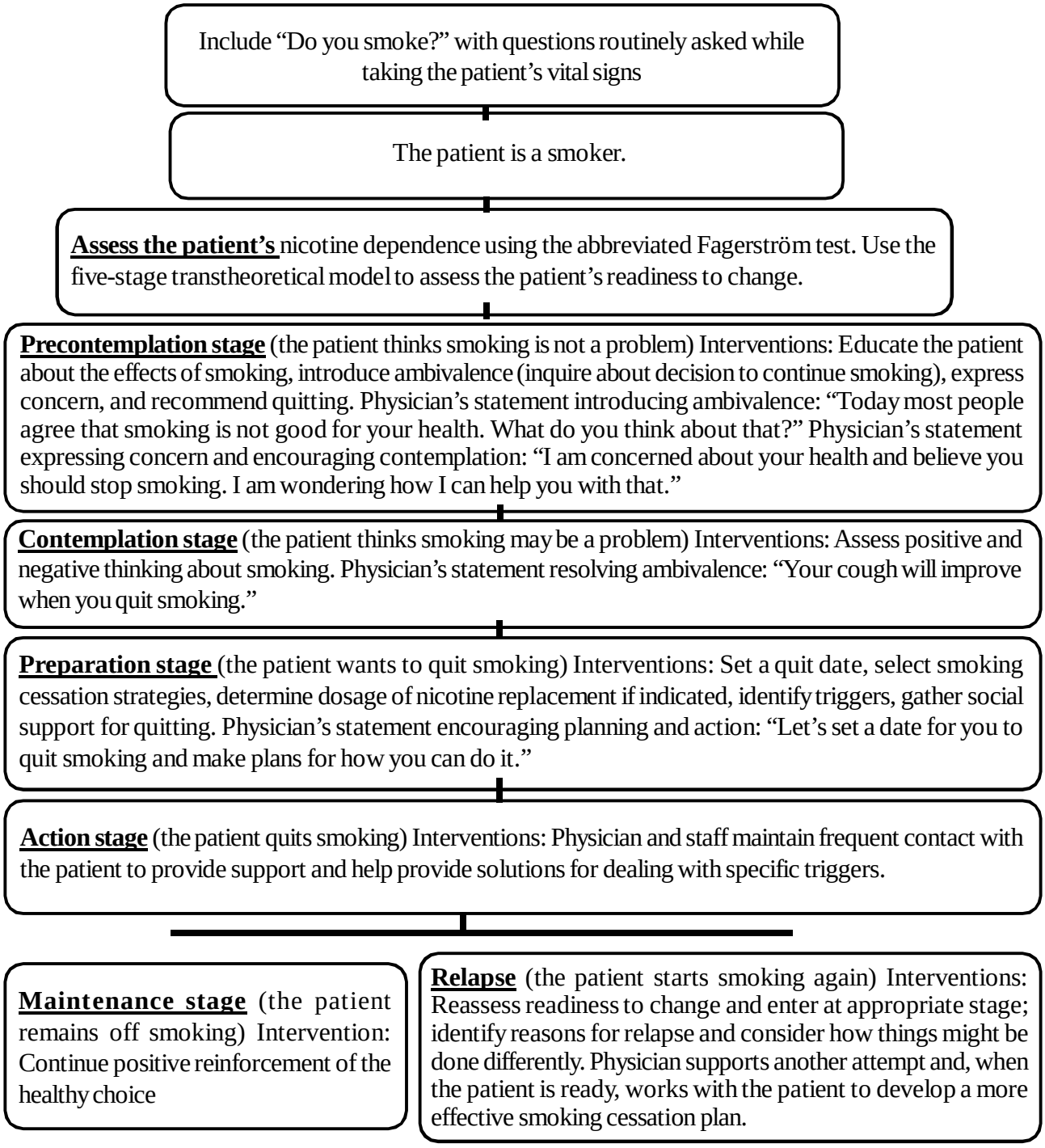


Fig. I: Transtheoretical model for readiness to change for a smoker (Mallin, 2002).

The participants were asked about their age, smoking status and willingness to participate in the project about healthy behaviour and disease prevention. They were asked to read and sign an informed consent form. The study participant's tobacco habit was assessed based on nicotine dependence. The nicotine dependence was graded according to Talwar et al (2004) as given below:

1. **High level of dependence**: Individual who uses tobacco within 30 minutes of waking up or who uses it 25 or more times per day.
2. **Moderate level of dependence**: Individual who uses tobacco more than 30 minutes after waking up or uses it less than 25 times per day.
3. **Low level of dependence**: Those who neither uses tobacco before 30 minutes of waking nor use it more than 25 times a day.

The tobacco dependence was assessed at the beginning and at the end of one year in the study. 5 A's method (Fig. II) was the intervention that was used for all the participants. No pharmacological treatment was provided for the tobacco users.Frequencies and percentages were calculated and Chi-square Test was applied in order to test for association in males & females among the various variables. The statistical analysis was done using SPSS version 11.5.

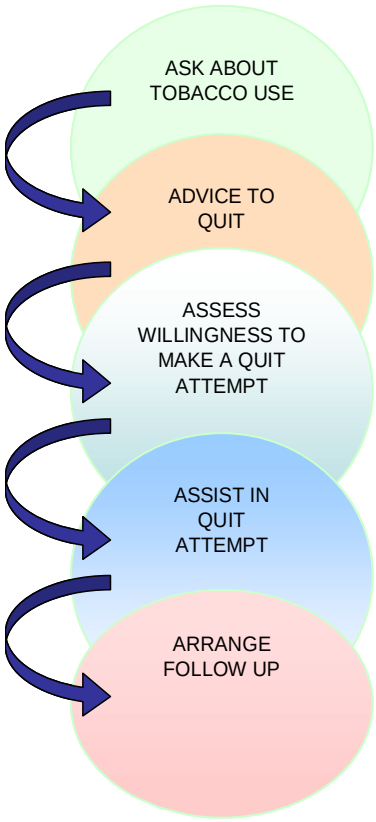


Fig. II: Showing the '5 A' Model.

Results:

There were 90 participants in the study, of which 45 were males and 45 females. Their follow up was done for 1 year. All participants had the habit of tobacco chewing at enrollment. 52.2% and 47.8% participants belonged to 20-30 years and 31-40 years age groups respectively. Majority (56.6%) of them belonged to low socio-economics status (Kuppuswamy scale, 2007).

38.5% of the male participants had the habit of alcohol intake in addition to tobacco. The habit of chewing tobacco was started by participants between 16-20 years of age (24.4% males and 22.2% females). In 30.3% females the duration of tobacco use was between 11-20 years while in 38.9% males it was between 21-30 years. There was a statistically significant relation between alcohol intake, age of starting of the tobacco habit and duration of tobacco use between male and female participants (Table I).

During the inception of the study, all the participants showed heavy nicotine dependence. By the end of one year, there were 10 males & 19 females who became light nicotine dependent (Graph I). All the heavy nicotine dependent participants were in the preparatory stage and the moderate and light nicotine dependant participants were in the action stage of the Transtheorotical model.

Table I: Tobacco behaviours of the participants.

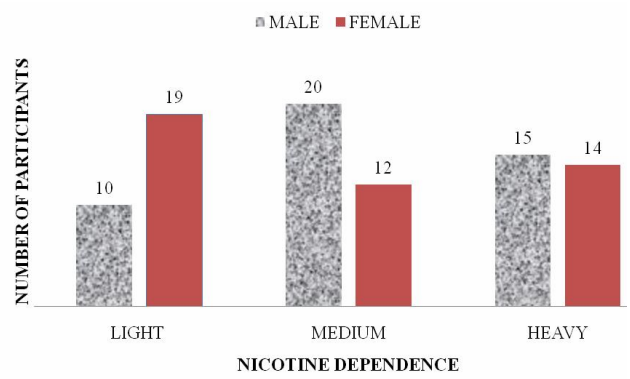
PARTICULAR		NO. OF MALES (%)	NO OF FEMALES (%)	CHI-SQUARE	Df	P value
Alcohol intake	Present	35(38.9)	0(0)	57.273	1	<0.001**
	Absent	10(11.1)	45(50)			
Age of starting tobacco	≤15 Yrs	4(4.4)	0(0)	10.095	3	<0.05*
	16-20 Yrs	22(24.4)	20(22.2)			
	21-25 Yrs	19(21.1)	19(21.1)			
	≥25 Yrs	0(0)	6(6.66)			
Duration of tobacco use	≤10 Yrs	0(0)	13(0)	72.500	3	<0.001**
	11-20 Yrs	0(0)	27(30.3)			
	21-30 Yrs	35(38.9)	5(5.55)			
	>31 Yrs	10(11.1)	0(0)			

(* significant, ** highly significant).

Discussion:

Kipnis & Davidoff (2003) opined that the major deterrent to quitting smoking are the withdrawal symptoms in form of depressed mood, insomnia, irritability, anger, frustration, difficulty in concentrating, restlessness, decreased heart rate and increase in appetite or weight gain. These withdrawal symptoms can occur in an isolated fashion or concurrently.

Graph I: Showing Nicotine dependence by the end of 1 year



Unfortunately, these withdrawal symptoms are not minor in intensity.

Only 7.9 percent were able to cessate themselves of the habit without help (Bates & Bueltel, 1999). Several methods individually or in combination have had good success rate. For instance, the advice of a physician alone can improve the smoking cessation rate to 2 percent (Kipnis & Davidoff, 2003).

In the present study 32% were helped to reduce the nicotine dependence in them using the '5 A' model. This is in contrast to the study by Kim & Seo (2001) where 32.5% were cessated. But there was a difference in the assessment of the habit of cessation. In the study by Kim & Seo (2001) it was done by the expiratory CO level. 'Motivational discussion' could have been the main strategy of the intervention for assisting and arranging follow-up contacts. As both components of the '5A' model are essential to improve quitting rates.

The magnitude of effect of this intervention was not parallel to the study by Puschel et al (2006) where the abstinence was only 15%. The quasi-experimental design of the study could have affected the internal validity of the results. The cohort was significantly different in some important variables such as socioeconomic status and stages of change unlike our study. Chatkin et al (2004) reported 14.5% of abstinence rate which could be due to the doses of the intervention delivered which were insufficient to achieve a higher smoking cessation rate. Our baseline and post-intervention results showed a good level of information and supportive attitudes towards tobacco restrictive policies among women. Our study showed that a systematic approach based on the '5 A' strategy can produce benefits. Even though the effectiveness needs to be evaluated with larger sample size and expiratory CO level. Our initial results tends to show positive influence of the brief interventions for tobacco cessation by the dentist.

The Transtheoretical behavior model which underlies the '5 A' strategy has been criticized by its lack of consistency to predict smoking behavior (West, 2005). Yet if a small population of dentists would be able to get a change in the tobacco behavior of the patients the above criticism could be proved wrong.

Recommendations & Conclusion:

Our study shows a reduction of 32% in the prevalence of tobacco use after the implementation of the programme using the "5 A" method. Tobacco cessation interventions are highly cost-effective, therefore, health professionals should identify smokers, encourage and support them to stop and provide follow-up. To maximize long-term success, use of nicotine replacement therapy (NRT) in conjunction with a behavioral programme should be planned. There is a need to create a smoke-free office environment. It is imperative for employees to serve as nonsmoking role models and provide a cessation-oriented atmosphere. But while there is no dearth on policies being made at both the community level and individual level, the true challenge lies in implementing them. Monitoring of effective planning and execution of programmes by appropriate authorities at regular intervals is vital for successful achievement of the goal of "**Tobacco Free Society**".

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