



## A COMPARATIVE EVALUATION OF EFFECTIVENESS OF ORAL HEALTH TALK AND VIDEO DEMONSTRATION ON TOBACCO CESSATION AMONGST ADULT TOBACCO USERS IN PUNE: AN EXPERIMENTAL STUDY.

### Dental Science

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### ABSTRACT

**Introduction:** Tobacco epidemic is one of the biggest public health threats the world has ever faced, killing around 6 million people a year. Aim and **Objectives:** To assess and compare the impact the commonly used approaches for tobacco cessation i.e. Oral Health talk and Video demonstration (Visual aid) and a combination of both. **Materials and Methods:** An interventional study design was carried out among 90 adult tobacco users visiting Sinhgad Dental College and Hospital, Pune who were randomly allocated into 3 groups comprising of Group I(Oral Health talk) n=30, Group II (Video demonstration group) n=30 and Group III (Combination group) n=30. A structured questionnaire was used for pre-intervention and post-intervention. The dependency level was assessed by using modified Fagerstorm's criteria at the baseline, 24 hours and 7 days. Frequency analysis and Chi-square test was done. **Results:** On assessing the difficulty level of quitting the habit, 12(40%) in Group I, 13(43.3%) in Group II and 10 (33.3%) in Group III found it fairly hard to quit the habit inspite of their willingness to quit the habit. The successful abstinence for a prolonged 7 days was seen in 3(10%) in Group I, 1(3.3%) in Group II and 3(10%) in Group III. **Conclusion:** Oral Health Talk and Combination of Oral Health Talk and Video demonstration showed significant results.

### KEYWORDS:

Oral Health Talk, Tobacco cessation, Video demonstration, Experimental study.

### INTRODUCTION:

Tobacco is the only legal drug that kills many of its users when used exactly as intended by manufacturers. World Health Organization has estimated that tobacco use (smoking and smokeless) is currently responsible for the death of about six million people across the world each year with many of these deaths occurring prematurely. This total includes about 6,00,000 people estimated to die from the effects of second-hand smoke. Although often associated with ill-health, disability and death from non communicable chronic diseases, tobacco smoking is also associated with an increased risk of death from communicable diseases.<sup>1</sup>

Studies have documented the efforts taken by the physicians, doctors or even the dentists who could help patients to curb tobacco use in smoke or smokeless form.<sup>2,3,4,5,6</sup> However the efforts often fail because of multiple reasons which may be lack of knowledge of ill effects of tobacco use, deeply ingrained cultural habits. In spite of the above mentioned barriers, literature states that counseling in any form helps a tobacco addict to quit the habit of tobacco consumption Literature suggests that individual, group or even few minutes of personalized counseling by the dentists are effective ways to make an individual give up tobacco consumption habit.<sup>7-11</sup>

There is a need to create awareness about tobacco and its effects and aid people in tobacco cessation. There are various approaches and programs undertaken for Tobacco-cessation. The present study is undertaken to assess and compare the impact of the commonly used approaches for tobacco cessation i.e. Oral Health talk and Video demonstration (Visual aid) and a combination of both on tobacco cessation amongst adult tobacco users.

### MATERIALS AND METHODS:

This is an interventional study design was carried out among 90 adult tobacco users visiting Sinhgad Dental College and Hospital, Pune during the period 15<sup>th</sup> July-31<sup>st</sup> September 2016 were randomly allocated into 3 groups consisting of Group I(Oral Health talk)(n=30),

Group II (Video demonstration group) n=30 and Group III(Combination group) (n=30). The sample size was determined to be 30 at each group by keeping the power at 80% and assuming error at 20%. The effect of each intervention technique was assessed after a time period of 7 days. The consent of study participants was taken prior to the start of the study. Ethical approval was taken from the ethical committee of Sinhgad Dental College and Hospital, Pune. Participants who were above 18 years of age and current tobacco users were selected. Appropriate permissions and ethical clearance was obtained the Institute. The study was an experimental type.

The construct and content validity of oral health talk and video demonstration was done by the subject experts. Translation and back translation in regional language(Marathi) was done by the study experts well versed in both the languages. The training of the principal investigator was done by a study expert in the Department of Public Health Dentistry prior to the start of the study. A pilot study was done amongst 30 patients for the feasibility of the study.

### Research Instrument:

A structured, pre-tested, pre-validated, close-ended questionnaire was used for pre-intervention and post-intervention. The dependency level was assessed by using modified Fagerstorm's criteria at the baseline, after 24 hours and after 7 days.

The content of Oral health talk and video demonstration included the following Subtopics:

- Tobacco-a brief introduction
- Different forms of tobacco
- Ill-effects of tobacco use
- Case-scenarios
- Quitting - Alternatives for tobacco, Withdrawal symptoms, Effects and Benefits of Quitting.

The study participants were randomly allocated into 3 groups. Group I was given Oral health talk, Group II Video demonstration and Group

III was given a combination of both.

The details of usage of tobacco, knowledge of ill-effects of tobacco, willingness to quit, difficulty level of quitting, previous attempts and roadblocks in quitting were assessed using a interviewer based questionnaire prior to the intervention for tobacco cessation. Accordingly, the participants were provided with the tailor-made counseling by either brief personal counseling (Group I) or video demonstration only (Group II) or a combination of both (Group III). Each group consisted of 30 study participants comprising a total sample size of 90. After a period of 7 days, the effect of tobacco cessation done previously by various methods were assessed using a interviewer based post-intervention questionnaire. The questionnaire was intended to assess if the participants tried to stop the habit and for how long they were able to sustain the abstinence and manage their withdrawal symptoms. The abstinence rate was assessed for 24 hours, more than 24 hours and 7 days.

**Statistical analysis:**

Statistical analysis was done using Statistical Package of Social Science (SPSS, Inc., Chicago, IL, USA, version 21). Frequency analysis was applied for the responses of Pre and Post session questionnaire. Chi-square test was applied for proportion.  $p < 0.05$  was considered as statistically significant.

**RESULTS:**

The mean age of the study participants was 35.05±10.63 years. It was seen that amongst the total study participants 30 in each group, Smokeless form, Tobacco chewing was commonly seen in all the three groups; Group I=10(33.3%), Group II= 27(90%) and Group III= 23(76.6%). Cigarette smoking habit was seen commonly amongst 6(20%) in Group I. A combination of smoking and smokeless form of tobacco use was seen in 11(36.6%) in Group I, 2(6.6%) in Group II and 3 (10%) in Group III.

On assessing the willingness of the study participants to quit the habit, it was seen that out of 30 participants in each group, 27(97%) were willing to quit the habit in Group I and Group II and 26(86.6%) in Group III. The willingness to quit was almost similar in all groups (Table 1).

On assessing the difficulty level of quitting the habit, 12(40%) in Group I, 13(43.3%) in Group II and 10 (33.3%) in Group III found it fairly hard to quit the habit inspite of their willingness to quit the habit (Table 1).

When assessed the effects of the interventions in all the three groups after 7 days, it was seen that 25(83.3%) tried to stop the habit in Group I with the intervention of Brief counseling, 29(96.7%) in Group II with the intervention using Video demonstration and 27(90%) in Group III using a combination of both. The stoppage of habit for less than 24 hours was seen in 17(56.7%) in Group I, 25(83.3%) in Group II and 19 (63.3%) in Group III. The abstinence for more than 24 hours was seen in 8(26.7%) in Group I, 4(13.3%) in Group II and 8(26.7%) in Group III. The successful abstinence for a prolonged 7 days was seen in 3(10%) in Group I, 1(3.3%) in Group II and 3(10%) in Group III. (Table 2).

When assessed for the Dependency level using Fragerstorm's criteria, it was seen that the dependency was high in Group I amongst 37.2 at baseline, 37.1 after 24 hours and declined to 30.1 after a period of 7 days. In Group II, at baseline the dependency level when checked was high amongst 37, after 24 hours declined to 34 and it was found high only amongst 27 after a period of 7 days. In Group III, the dependency level when assessed was high amongst 42.5 at baseline, 35.1 at the end of 24 hours and declined to 28.2 after 7 days of intervention. (Table 3).

**Table 1: Responses of the Questionnaire in Pre-Intervention:**

Sr.no.	Questions	Responses	Group I N(%)	Group II N(%)	Group III N(%)	p-value
1.	Is the tobacco habit affecting your health?	No	10(33.3)	16(53.3)	21(70)	>0.05
		Might get problem	9(30)	7(23.3)	5(16.7)	>0.05
		Not fit	10(33.3)	7(23.3)	3(10)	<0.05*
		Trouble breathing	1(3.3)	0(0)	1(3.3)	>0.05

2.	Will you be able to stop the tobacco habit?	Yes	27(90)	27(90)	26(86.7)	>0.05
		No	3(10)	3(10)	4(13.3)	>0.05
3.	How hard do you find to stop the habit	Do not think I can stop	0(0)	4(13.3)	3(10)	>0.05
		Extremely hard	6(20)	2(6.7)	1(3.3)	<0.05*
		Very hard	9(30)	8(26.7)	7(23.3)	>0.05
		Fairly hard	12(40)	13(43.3)	10(33.3)	>0.05
		Not too hard	3(10)	1(3.3)	5(16.7)	<0.05*
	Easy	0(0)	0(0)	4(13.3)	>0.05	

\* $p < 0.05$  is statistically significant

**Table 2: Responses of the Questionnaire in Post-Intervention:**

Sr. no	Questions	Responses	Group I N(%)	Group II N(%)	Group III N(%)	p-value
1.	Do you currently use Tobacco in any form?	Yes	25(83.3)	29(96.7)	27(90)	>0.05
		No	5(16.7)	1(3.3)	3(10)	>0.05
2.	Did you try to stop the habit after the intervention?	Yes	25(83.3)	29(96.7)	27(90)	>0.05
		No	5(16.7)	1(3.3)	3(10)	<0.05*
3.	What is the longest period you stopped the habit?	Not	5(16.7)	1(3.3)	3(10)	>0.05
		Less than 24 hours	17(56.7)	25(83.3)	19(63.3)	<0.05*
		More than 24 hours	8(26.7)	4(13.3)	8(26.7)	>0.05
4.	What will help you to stop the Tobacco habit?	None	5(16.7)	1(3.3)	3(10)	>0.05
		Home Remedies	6(20)	10(33.3)	3(10)	<0.05*
		Counselling Interventions from a Dentist	4(13.3)	10(33.3)	18(60)	<0.05*
		Combination of Home Remedies and Counselling Interventions by Dentist	15(50)	8(26.6)	6(20)	<0.05*

\* $p < 0.05$  is statistically significant

**Table 3: Dependency rates of the Participants in intervention groups using Modified Fagerstorm's Criteria:**

Dependency rates	Pre-intervention At baseline	Post-Intervention After 24 hours	Post-Intervention After 7 days	p-value	
Group I-Low	36.1	35.3	30.5	<0.05*	
	Medium	29.3	28.1	25.4	>0.05
	High	37.2	37.1	30.6	<0.05*
Group II- Low	42	40	37	>0.05	
	Medium	21.2	20.1	18	>0.05
	High	37	34	27	0.005
Group III-Low	37.2	36.1	32	>0.05	
	Medium	19.1	18	17	>0.05
	High	42.5	35.1	28.2	<0.05*

\* $p < 0.05$  is statistically significant.

**DISCUSSION:**

In India, there is widespread use of smokeless tobacco which is the cause of one of the highest rate of oral cancer in the world (Dikshit et al., 2012; Lal et al., 2012).<sup>12,14</sup> Gupta et al. (2013)<sup>14</sup> stated oral cancer in India assumes epidemic proportions and tobacco consumption (in different forms) is distributed across a range of demographic and socioeconomic levels at individual and household level in India.

The present study was undertaken to know the effectiveness of different approaches of tobacco cessation counseling techniques.

In the study, approximately 50% of participants used smoke and

smokeless tobacco. The prevalence of tobacco consumption which was in consensus with the other studies.<sup>14,16</sup>. Majority of the studies are conducted in India and abroad to see whether counseling sessions are useful for modifying the behaviors. But most of the studies in the west have been directed towards the smokers to quit the habit of cigarette smoking but not smokeless tobacco (Gonseth et al. 2010; Carr and Ebbert, 2012; Venkatesh and Sinha, 2012; Duaso and Duncan, 2012; Vidrine et al. 2013; Rose et al., 2010).<sup>3,5,7,8,9,17</sup> However in this study, counseling was directed towards smokers and smokeless tobacco users of which more than 50% of the total participants were Smokeless tobacco users. At the start of counseling sessions, the participants were willing to go through the counseling sessions in order to give up the habit of tobacco.

The dependency level was assessed using modified Fagerstorm's criteria. About 40% of the participants were in the low and high dependency groups. Only 20 percent of the participants were in the medium dependent group. The criteria suggested by Heatherton et al. (1991)<sup>18</sup> was used for smoking form of tobacco users whereas for smokeless tobacco users modified Fagerstorm's criteria given by Ebbert et al. (2006)<sup>19</sup> was used. Both the criterias were validated and used in the study. There was reduction in the high dependency group to medium and low in by the end of 7 days. But there was slight reduction in the high dependency group to medium in the group counseling group.

In the Present study, 7 day point prevalence abstinence rate was 16.75%. This is in contrast with the studies conducted by Jiang B et al (2016) 23.1%<sup>20</sup>, Savant et al<sup>11</sup> in which 6% individual group and Richter et al<sup>21</sup> for Integrated Telemedicine Intervention was 9.8% and for Phone Intervention was 12%.

In this study, around 83% of the participants made an attempt to quit the tobacco habit which is in consensus with the study done by Savant S et al<sup>11</sup> and Fu et al<sup>22</sup> where it was 64% and 74% respectively.

Alber and Ward (2012)<sup>4</sup> stated that dentist can provide instructions and interventions on tobacco cessation. They relate oral findings to the patients and provide advice patients to quit. In addition, dentists are able to assess patients' self-addiction and level of readiness to quit tobacco use. With this information, dentists can assist in helping patients to stop using tobacco by providing appropriate pharmacotherapeutic aids and thus improve their overall oral health (Carr and Ebert, 2012).<sup>5</sup>

The seven day point prevalence abstinence rate in this study was 16.75%. Abdullah et al. (2010)<sup>23</sup> suggested that self help materials, individual and group counseling methods have increased the success rates in tobacco cessation which was reflected in this study. Rosenthal et al. (2013)<sup>20</sup> also stated that behavioral therapy such as self-help and brief interventions can be provided by health professionals. It included an assessment of tobacco use, dependence, and motivation to quit; advice on the benefits and methods of quitting; and assistance with quitting, including referrals to other treatment. This was done through 5As and 5Rs in brief intervention methods which were also practiced in this study (Thankappan et al., 2013).<sup>24</sup>

The reason for participants trying to quit more in Group-I as compared to Group-II might be because in individual counseling, the message was conveyed to them in a personalized manner and there was one to one interaction during all sessions.

According to the Public Health Service (PHS) clinical guidelines for tobacco cessation practices (US Department of Health and Human Services, 2010)<sup>25</sup>, Thankappan et al. (2013)<sup>24</sup> and Vidrine et al.<sup>9</sup> (2013), dental professionals must design their approach based on the patient's readiness or willingness to quit which can help to improve the quit rates.

In this study, at each stage of intervention, the participants way of thinking and feelings about the tobacco habit changed and counseling sessions helped them move on to the next stage. Studies like Rigotti (2012)<sup>26</sup> was conducted to explore the changes that occurred in patients with different methods of counseling like Nicotine Replacement Therapy (NRT), telephonic counseling, Brief Motivational Interviewing (BMI) etc. It was found that there was significant increase in the participants' subjective involvement in Group-I but not in video demonstration Group-II. Gosenth et al. (2010)<sup>3</sup> found that 6%

had stayed away from smoking; they were in the maintenance phase after 6 months while the rest again fell back into relapse phase. This showed that education and other motivational enhancement interventions help less motivated patients to incrementally increase their commitment to quit. There were multiple reasons for the modest quit rates. While quitting, they wanted any assistance on how to deal with relapse and so on, their motivation was low and their priorities differed. Studies have revealed that telephone counseling and use of modern technologies act as adjuncts to quitting (Abroms et al., 2011<sup>27</sup>; Whittaker et al., 2011<sup>28</sup>). Due to their quasi-anonymous nature, telephone counseling might have appealed to those who were reluctant to seek help provided in a group setting, helping them overcome what can be a significant psychological barrier. Moreover, can be a significant psychological barrier. Moreover, technology savvy participants could avail new softwares for quitting tobacco (Abroms et al., 2011)<sup>27</sup>.

Participant's reluctance to undergo counseling sessions and being uncooperative were the barriers that were identified in other studies (Prakash et al., 2012)<sup>29</sup>. Some other barriers were patients were not given reimbursements, lack of time and their casual attitude towards counseling (Prakash et al., 2012).<sup>29</sup> Rosenthal et al. (2013)<sup>20</sup> stated that the participants should be highly motivated and interested to achieve high quit rates. It is said that, doctors should also be highly trained in counseling methods (Carson et al., 2012)<sup>30</sup>. Studies have stated that lack of skills and interventional training might have been a co factor in reduced number of quit rates (Raupach et al., 2012; Venkatesh and Sinha et al., 2012; Strayer et al., 2013).<sup>31,7,32</sup> They are modified healthcare provider practices and doing counseling cessations more often in the clinics, easy access to the medications and more availability of utilization of telephonic counseling methods.

In our study, there was no contamination in three groups leading to exchange of thoughts between the three groups. All the participants belonged to similar socioeconomic status and same Gender. The Validation of Video and Oral Health Talk (A Brief Intervention) was done in the regional language which helped to overcome the language bias.

In our study there were certain limitations as our abstinence measure was self-reported and short term (7 days). The bio-confirmation could be done for confirmation. Further longitudinal research on a larger sample size is suggested.

### CONCLUSION:

The Tobacco cessation was seen among all the groups. However the Group-I and Group-III have certainly made difference as the participants were made aware of the harmful effects of tobacco, coping strategies to deal with the relapse and overall change in knowledge, attitude and beliefs of the participants. No conclusion could be drawn whether which intervention was better as the quit rates were almost similar. There was no significant difference in the quit rates of the participants in the oral health talk, video demonstration and a combination of both when compared at 7 day point prevalence abstinence rates.

Thus, it can be concluded that All the Tobacco Cessation Intervention Techniques were Effective. Oral Health Talk and Combination of Oral Health Talk and Video demonstration showed significant results.

### Recommendations and Suggestions:

A longer duration study is recommended in which the cessation techniques must include a Combination of Health Talk and Video demonstration. It is also recommended to provide Continuing Education in Tobacco Cessation Techniques to all Health Care Providers. The tobacco cessation cells should be established at all primary and Community health centres as well as at the workplaces.

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