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Smoking cessation as a part of oral health care delivery – Patient's perceptions

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ABSTRACT

Objectives: To assess the knowledge of patients about the consequences of smoking on the general and oral health, to analyze the patient's perceptions about the role of dentists in smoking prevention, counseling and cessation and to analyze the willingness of smokers to quit smoking following dentist's advice.

Materials and methods: A descriptive study was conducted among a convenient sample of four eighty-six dental patients visiting Dental College and Hospital, in the month of August 2011 using a self-administered questionnaire. Descriptive statistics and chi square analysis were performed to analyze data.

Results: The patients had good knowledge about the effects of smoking on general and oral health. However its effect on hair loss, aging and wound healing can be reinforced. Statistically significant difference was observed in the knowledge of smokers and non-smokers about the effects of smoking on aging ($P = 0.008$) and oral cancer ($P = 0.0012$). Patients had positive perception about the role of dentist in smoking cessation activities. Smokers exhibited willingness to quit if suggested by the dentist.

Conclusion: Patients perceive that dentists can play an important part in smoking cessation activities.

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1. Introduction

Smoking is responsible for 100 million deaths worldwide.[1] The British doctors' study has shown that smokers are reducing their life by an average of 7.5 years; irrespective of the type of tobacco smoked and the amount of daily smoking.[2] The negative effects of smoking on the general health of tobacco users are well documented. It has been established as a risk factor for death from several systemic diseases including lung cancer, respiratory diseases and cardiovascular diseases.[3,4] Also it causes large number of oral diseases and conditions such as oral cancer, staining of teeth and restorations, halitosis, impaired wound healing, periodontal diseases, failure of implants and surgical treatments, ANUG and life threatening precancerous and cancerous lesions.[5–8]

South East Asia especially India has one of the highest age adjusted incidence rates of oral cancer and upper aero-digestive tract cancers in the world.[9] According to WHO the prevalence of tobacco habits in India is high with 34% using bidis, 31% cigarettes, 19% chewing tobacco, 9% hookah and 7% other forms.[10] The cancer patients' aid association of India

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revealed prevalence of cigarette use as 20%, bidis 40% and chewable tobacco 40%.[11] It has huge physical, mental, social and economic implications for our country. Preventive strategies are need of the hour to prevent and reduce the menace of smoking and tobacco.

The scope of preventive dentistry is constantly expanding and can be as far reaching as a professional's imagination, sense of responsibility and efforts. Dentists have been recognized as "ideally positioned to counsel against the use of cigarettes and smokeless tobacco products".[3,9] They are one of the health professionals more frequently in contact with the general population and are first to see the effects of tobacco in mouth. They are as effective in providing smoking cessation counseling as any other health care professional. The evidence is clear that smokers who receive assistance from health care workers are more successful at quitting than those without any support.[3,11]

Most of the studies in the past have focused on dentists' or dental student's knowledge, attitude and practices regarding the various aspects of the smoking and smoking cessation activities.[12–14] Very few studies have focused on patient's knowledge, awareness and perceptions regarding the same.[15–18] Those available stress more on oral cancer rather than comprehensively covering all the aspects related to oral health and general health. There is paucity of patient centered studies in the Indian scenario. Hence the aim of the present study was to assess dental patients' knowledge about effects of smoking and their perceptions regarding role of dentists in smoking cessation interventions.

2. Materials and methods

A descriptive study was conducted in August 2011 using self-administered questionnaire.

2.1. Questionnaire development

The questionnaire was adopted from a previous study done by Terrades et al.[15] Before the pilot study the questionnaire was checked for face and content validity. The face validity was checked by ten individuals who were not the part of study. The content validity was checked by a panel of eight experts. The content validity ratio was calculated using formula given by Lawshe.[19] The value obtained for the present study was 0.88 which was above the minimum value of 0.85 for a panel of eight experts. The final questionnaire after modification consisted of three sections namely: knowledge about effects of smoking on general and oral health (eleven questions), perception of patients towards role of dentist in smoking cessation and attitude towards smoking cessation counseling (eight questions) and smokers' willingness to quit and consulting a specialist on dentists' advice. The responses were recorded as yes, no and don't know.

2.2. Study population and sample size

Study population consisted of patients visiting Dental College and Hospital. A pilot study was conducted using the modified questionnaire on fifty patients to assess the operational feasibility of the study. Sample size was calculated using the standard formula seeking results at 95% confidence interval for which the value of $z = 1.96$ was fixed and the allowable error as 0.05 (e). Final sample of four eighty-six was estimated.

Ethical clearance was obtained from Institution Review Board of Dental College and Hospital. Study sample was conveniently selected from the study population. Inclusion criteria consisted of subjects 18 years and above and ability to read questionnaire. Written informed consent was obtained from study subjects.

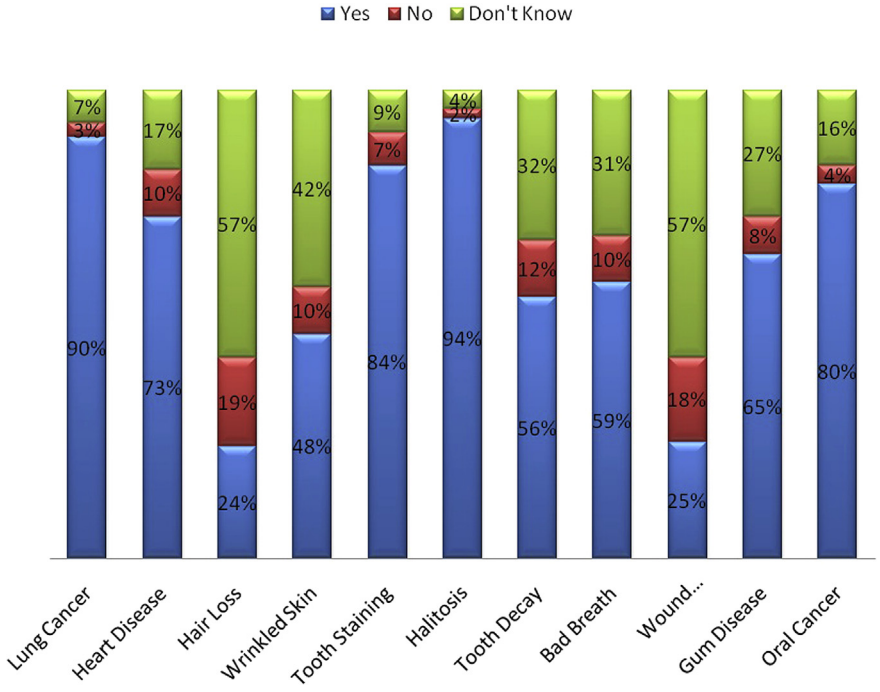


Fig. 1 – Knowledge of the patients about effects of smoking on general and oral health.

Table 1 – Knowledge about effects of smoking on general and oral health depending upon smoking status.

		Non-smokers N (%)		Smokers N (%)	Total N	P value
		Never smokers N (%)	Ex-smokers N (%)			
Smoking causes lung cancer	Yes	331 (91.4)	26 (96.29)	82 (82.8)	439	0.08
	No	8 (2.2)	1 (3.7)	6 (6.06)	15	
	Don't know	21 (5.8)	0	11 (11.11)	32	
Smoking causes heart disease	Yes	265 (73.6)	20 (74.4)	71 (71.71)	356	0.7913
	No	33 (9.1)	1 (3.7)	11 (11.11)	45	
	Don't know	62 (17.22)	6 (22.22)	17 (17.17)	85	
Smoking causes hair loss	Yes	85 (23.6)	8 (29.6)	27 (27.27)	120	0.5902
	No	62 (17.22)	7 (25.9)	21 (21.21)	90	
	Don't know	213 (59.1)	12 (44.44)	51 (51.51)	276	
Smoking causes lines on the skin*	Yes	185 (51.3)	12 (44.44)	35 (35.35)	232	0.008
	No	27 (7.5)	2 (7.4)	18 (18.18)	47	
	Don't know	148 (41.11)	13 (48.14)	46 (46.46)	207	
Smoking causes stained teeth	Yes	303 (84.16)	24 (88.88)	80 (80.8)	407	0.4624
	No	21 (5.8)	0	12 (12.12)	33	
	Don''t know	36 (10)	3 (11.11)	7 (7.07)	46	
Smoking causes bad smell from the mouth	Yes	342 (95)	26 (96.29)	89 (89.89)	439	0.0875
	No	2 (0.5)	0	6 (6.06)	8	
	Don't know	16 (4.4)	1 (3.7)	4 (4.04)	21	
Smoking causes tooth decay	Yes	202 (56.11)	15 (55.55)	57 (57.57)	274	0.8875
	No	37 (10.2)	5 (18.5)	16 (16.16)	58	
	Don't know	121 (33.61)	7 (25.29)	26 (26.26)	154	
Smoking causes bad taste	Yes	209 (58)	19 (70.37)	58 (58.58)	286	1.00
	No	31 (8.6)	3 (11.11)	16 (16.16)	50	
	Don't know	120 (33.33)	5 (18.55)	25 (25.25)	150	
Smoking can affect healing of wound	Yes	95 (26.38)	5 (18.55)	21 (21.21)	121	0.4131
	No	63 (17.5)	5 (18.55)	20 (20.20)	88	
	Don't know	202 (56.11)	17 (62.96)	58 (58.58)	277	
Smoking causes gum disease	Yes	244 (67.77)	16 (59.25)	58 (58.58)	318	0.2435
	No	21 (5.8)	2 (7.4)	13 (13.13)	36	
	Don't know	95 (26.38)	19 (70.37)	28 (28.28)	142	
Smoking causes cancer of mouth*	Yes	297 (82.5)	24 (88.88)	67 (67.67)	388	0.0012
	No	9 (2.5)	0	11 (11.11)	20	
	Don't know	54 (15)	3 (11.11)	21 (21.21)	78	

*Test used – chi square, $P < 0.05$.

2.3. *Data analysis*

Descriptive statistics was used to analyze the data. Chi square analysis was done to find association between knowledge, attitude of study subjects and response to the questions. The value of $P < 0.05$ was accepted as statistically significant. The analysis was performed using SPSS (17.0) software.

3. Results

The present study was a descriptive study conducted to assess perceptions of dental patients visiting Dental College and Hospital about smoking cessation as a part of oral health care delivery. All four eighty-six subjects completed the questionnaire, with response rate of 100%. Of 486 subjects, 311 (64%) were males and 175 (36%) were females. Majority (74%) of the study subjects were non-smokers.

3.1. *Knowledge about effects of smoking on general and oral health*

Fig. 1 demonstrates patients' knowledge about effects of smoking on general and oral health. It was assessed through a set of eleven questions. Overall patients had good knowledge about the relationship of smoking and cancer. However they exhibited poor knowledge about its effect on hair loss and aging. They were further categorized as smokers and non-smokers. The responses were further analyzed based on the smoking status of patients (Table 1). Statistically significant difference ($P < 0.05$) was observed in the knowledge of smokers and non-smokers about the facts that smoking causes wrinkled skin ($P = 0.008$) and oral cancers ($P = 0.0012$). Non-smokers were more aware of the above facts.

3.2. *About the role of dentist in smoking cessation*

Patients' perceptions regarding role of dentist in smoking cessation was recorded using a set of eight questions (Table 2). Majority had positive perceptions about the role of the dentist in smoking cessation activities (Fig. 2).

3.3. *Smokers' attitude towards smoking cessation counseling*

Table 3 shows the positive attitude of smokers towards smoking cessation advice and referral. Majority (89%) smokers

Table 2 – Perceptions about role of dentist in smoking cessation according to smoking status.

		Non-smokers N (%)		Smokers N (%)	Total N
		Never smokers N (%)	Ex-smokers N (%)		
I would expect my dentist to provide treatment & tell about smoking	Yes	306 (85)	22 (81.48)	77 (77.77)	408
	No	22 (6.1)	1 (3.7)	9 (9.09)	32
Q1	Don't know	32 (8.88)	4 (14.8)	13 (13.13)	49
I'd expect my dentist to be interested in smoking status of their patients	Yes	281 (78)	20 (74)	80 (80.80)	381
	No	61 (16.94)	6 (22.22)	15 (15.15)	82
Q2	Don't know	18 (5)	1 (3.7)	4 (4.04)	23
I think dentists should explain effects of smoking on oral health	Yes	353 (98)	25 (92.59)	94 (94.94)	472
Q3	No	2 (0.5)	2 (7.4)	2 (2.02)	6
	Don't know	5 (1.5)	0	3 (3.03)	8
Dentists can help patients stop smoking	Yes	301 (83.6)	24 (88.88)	24 (24.24)	349
Q4	No	25 (6.9)	2 (7.4)	33 (33.33)	60
	Don't know	34 (9.4)	1 (3.7)	42 (42.42)	77
Dentists should give advice regarding how to stop smoking	Yes	295 (81.9)	26 (96.29)	87 (87.87)	408
Q5	No	13 (3.6)	0	2 (2.02)	15
	Don't know	52 (14.44)	1 (3.7)	10 (10.10)	63
Do you like dentist who provides smoking cessation advice to smokers	Yes	304 (84.44)	22 (81.48)	85 (85.85)	411
	No	19 (5.2)	1 (3.7)	5 (5.05)	25
Q6	Don't know	37 (10.2)	4 (14.8)	9 (9.09)	50
Would you change to the other dentist if one dentist asks you about your smoking status	Yes	30 (8.3)	2 (7.4)	4 (4.04)	36
	No	297 (82.5)	23 (85.18)	89 (89.89)	409
Q7	Don't know	33 (9.1)	2 (7.4)	6 (6.06)	41
Dentist should ask about patient's smoking status on each & every visit	Yes	268 (74.4)	20 (74.07)	81 (81.81)	369
	No	66 (18.33)	5 (18.5)	12 (12.12)	83
Q8	Don't know	26 (7.2)	2 (7.4)	6 (6.06)	34

agreed to try to stop smoking if suggested by the dentist. They also (93%) agreed to put more efforts to quit smoking if the dentist showed its effect on the oral cavity. However only 86% agreed to consult a specialist if suggested.

4. Discussion

The present descriptive study assessed patients' knowledge about the effects of smoking, perceptions about the role of the dentist and willingness of smokers to quit following dentists' advice. Current smokers constituted only 20% of the study sample which was less compared to other studies.[15,20]

4.1. *Knowledge about effects of smoking on general health*

90% of the patients in the present study agreed that smoking causes lung cancer which is similar to that reported by Terrades et al [15] and Richard et al studies.[17] The high knowledge may be because many campaigns and advertisements have focused on the smoking as a causative factor for lung cancer. The knowledge about the relationship of smoking and heart diseases was comparatively less compared to smoking and lung cancer with 73% of the patients agreeing that it causes heart disease. This may be because the direct effect of smoking on heart diseases is not very evident and other factors also play an important role. In other studies comparatively higher knowledge was reported.[15,17] Majority (52%) of the patients in the present study were not aware that smoking can cause hair loss, aging and delayed wound healing. None of the previous studies to the best knowledge of authors have recorded this relationship in this context and scenario. 25% reported that smoking caused delayed wound healing which was in accordance with Shammari et al study.[18]

4.2. *Knowledge about the effects of smoking on oral health*

Patients in the present study demonstrated fairly good knowledge (76%) about the oral effects of smoking. It was comparable to that reported by Lung et al[16] (78%), however less as compared to 95% reported by Shammari et al[18] and Terrades et al.[15] The patients exhibited relatively less knowledge compared to other studies[15,16] when asked if smoking can cause tooth discoloration. However knowledge regarding smoking and bad breath was similar to that reported by Terrades et al study.[15] Only 59% believed that smoking caused bad taste from the mouth which was relatively less when compared with other studies.[15] For a non-smoker it may not be easy to appreciate this fact and smokers may become used to change in the taste and hence unable to appreciate it.

Smoking cannot cause tooth decay was reported by 13% of the patients which was in accordance with other studies[15,16] but less when compared by Shammari et al (51%) study.[18] The relationship of smoking and dental caries is a controversial area of research. Recent research shows that smoking can cause dental caries.[21–23] It has been demonstrated that cigarette smoke impairs salivary function and hence leads to dental caries. The patients might have agreed with the above fact as smoking was positively linked with majority of conditions. 65% of the patients in this study believed that smoking

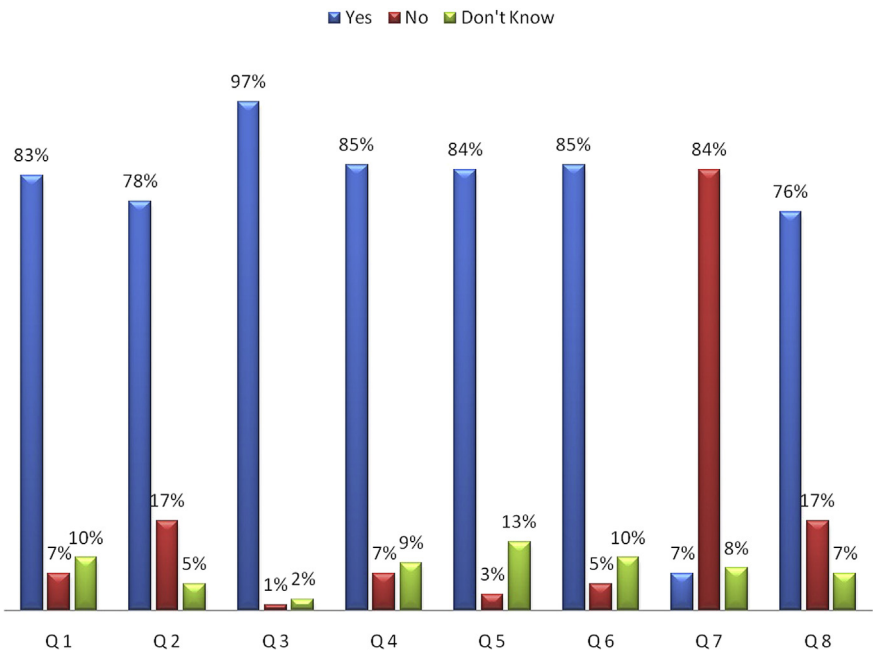


Fig. 2 – Perception of the patients about the role of the dentist in smoking cessation.

can cause gum diseases. Shammari et al and Terrades et al reported relatively higher percentage (76% and 80% respectively).[15,18]

80% of the patients agreed that smoking causes oral cancer, while 16% did not know the above fact. The knowledge about the oral cancer was comparatively good when compared to that reported by Richard et al[17] and Shammari et al[18] (74% and 62% respectively) and comparable to 85.5% reported by Terrades et al.[15] It is a cause of concern that in the present study still 16% of the patients were unaware that smoking can cause oral cancer despite high incidence rates of oral cancer in our country.

4.3. *Role of dentist in smoking cessation*

Both smokers and non-smokers had a positive perception about the role of dentist in smoking cessation activities. 83% of the patients believed that dentist should do health education apart from routine dental treatment. It was comparatively higher than 28% reported by Terrades et al[15] and 58% reported by Campbell et al.[24] In the present study 78% and 97% patients believed that dentist should be interested in the smoking status of their patients and should explain about the effects of smoking on oral health respectively. This finding was comparable to 77% and 95% reported by Terrades et al[15] and higher than 73% reported by Richard et al.[17] 85% of the patients in the present study believed that dentists can help patients stop smoking and should advice how to do it compared to 60% reported by Terrades et al[15] and 58.5% reported by Campbell et al.[24] 85% of the patients would appreciate dentists who provide smoking cessation advice. Similar findings were reported by other studies.[15] 84% of the patients would not shift to the other dentist if asked about their smoking status, whereas 79% reported this in Terrades et al[15] and 60% in Richard et al[17] study. Though many patients feel it is embarrassing to tell about their smoking status, however it is not the reason for the change of dentist. 76% of the patients in the present study feel dentists should ask about the smoking status of their patients' on each visit. A similar finding was reported by Terrades et al.[15] Many patients feel that decision about quitting smoking is one's personal choice. Dentist should advice once or twice and should not ask again and again if a patient quitted smoking or not. Also many feel that asking about smoking status and quitting status may be embarrassing.

89% of the smokers in the present study agreed to try to quit smoking if suggested by a dentist which was higher compared to Terrades et al[15] and Richard et al study.[17] Similarly higher percentage of smokers showed the willingness to quit smoking and agreed to consult with specialist was compared with other studies.[15] The present study reflects the perceptions of patients attending a dental hospital, so the results should be interpreted carefully as it may not reflect the perceptions of general population. Also hospital setups

Table 3 – Response of smokers towards smoking cessation counseling.

Question	Yes N (%)	No N (%)	Don't know N (%)
I would try to stop smoking if a dentist suggested so	88 (89)	5 (5)	5 (5)
I would put more efforts to quit smoking if a dentist showed me its effects on the mouth	91 (92)	3 (3)	4 (4)
I would go to a specialist for consultation if a dentist suggested so	84 (85)	10 (10)	10 (10)

encourage one to respond favorably. The presence of friends and relatives can also have an effect on responses. The favorable responses may have led to social desirability bias.

5. Conclusion

It can be concluded from this study that the dental patients had a good knowledge about the general and oral effects of smoking. However they had poor knowledge about the effects of smoking on hair loss, aging and wound healing. They had positive attitude towards the role of dentists in smoking cessation activities. Smokers exhibited willingness to follow the dentists' advice about quitting smoking. It is recommended to conduct such surveys among general population covering different age groups. Dentists should inform their patients about the effects of smoking and strongly advice and help them in quitting and take up a more active role in such activities.

Conflicts of interest

All authors have none to declare.

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