

Acquaintance and Approach in the Direction of Tobacco Cessation Among Dental Practitioners—A Systematic Review

Abstract

Background: Nowadays, tobacco consumption has become one of the major public health problems and is the leading cause of escapable illness and death. A significant role is played by dental professionals in the identification of smokers; they are, thus, in a better position to offer preventive care. The aim of the present study was to systemically review the knowledge and attitude of dental practitioners toward tobacco cessation. **Methods:** A literature search was performed in PubMed Central and Cochrane Library, Medline—PubMed, Embase, Google Scholar up to 2018 to identify appropriate studies. Full-text original research articles of the cross-sectional design were only included in the study. Our target was to systemically review the knowledge and attitude of dental practitioners toward tobacco cessation. **Results:** The present review included a total of nine articles (studies) that fulfilled the eligibility criteria. Two articles which were hand searched and one article which was obtained through contact with experts were included. The results of the review revealed that the dental practitioners in most of the included studies lack satisfactory knowledge and were unaware of existing referral pathways to specialist smoking cessation services. At the same time, most of the dentists have a positive attitude toward tobacco cessation. **Conclusions:** Dental professionals are aware of their obligations toward smoking cessation counseling for patients but certain barriers including lack of time, confidence, and training prevent them from practicing the same in their daily routine. The dental professionals should obtain appropriate training and attain knowledge along with quantifiable skills for the prevention and cessation of tobacco use.

Key words (MeSH Terms): Attitude, dentist, dentists, knowledge, public health, tobacco use cessation

Introduction

Tobacco use is a global epidemic, especially among young and middle-aged people. Its prevalence has not only increased in developed countries but also in low- and middle-income countries that are least able to afford the resulting health and economic consequences.^[1,2] In addition to being associated with a number of cancers and coronary conditions, tobacco plays an important role in the etiology of a number of oral conditions. It is a primary risk factor for oral cancer, as well as leukoplakia, periodontitis, and delayed wound healing.^[3]

Tobacco is the only legal drug that kills many of its users when used exactly as intended by its manufacturers. According to WHO, each year about 6 million deaths occur worldwide due to tobacco use (smoking and smokeless).

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Among these, about 600,000 deaths are ensued by the effects of second-hand smoking.^[4] Conferring to the Indian perspective, 900,000 people die every year due to this adverse habit.^[5] Therefore, now tobacco consumption is considered as the foremost cause of escapable death and illness.^[6]

Preventive strategies can play an essential role in reducing tobacco usage and thereby its ill effects.^[7] Moreover, improving the level of health literacy can also lead to change people's behavior in relation to tobacco consumption.^[8] One of the strategies to reduce the smoking-related diseases/deaths is to promote the participation of health professionals in tobacco prevention and cessation health education programs. Tobacco cessation may be defined as validated sustained abstinence from cigarettes and/or other tobacco products for at least 6 months, but preferably for a year.^[9]

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It's been said that more than 50% of smokers are seen by the dentists every year, henceforth, they are in a unique position to promote smoking cessation among their patients through oral screening and patient education. A noteworthy role is played by dental professionals in the identification of smokers, as they may notice intraoral signs such as odor, tooth stains, and oral hygiene problems earlier than other health care professionals; they are, thus, in a better position to offer preventive care.^[10] As the dentists have direct interaction with patients on a regular basis, the dental clinic may be perfectly pertinent to help patients in quitting the habit of smoking.^[10]

Even though, dentists play an imperative role in educating and counseling patients about health risks/consequences of tobacco-use as patients are in regular contact with dentists during the dental visits, smoking cessation counseling is not practically being made a part of the routine day-to-day practice.^[11] Barriers that preclude dentist from incorporating tobacco cessation into practice include doubting about knowledge and skills in assisting patients to quit smoking, lack of confidence in their own ability to help their patients to quit, doubting about their effectiveness to give quitting advice, anticipated negative reaction from patients, uncertainty about their role in smoking cessation, lack of educational materials, lack of time, and lack of remuneration.^[12]

Therefore, dentists' knowledge and attitude about tobacco use and various methods available for its cessation are crucial in order to curtail the smoking habit worldwide. Hence, this study focuses to systemically review the knowledge and attitude of dental practitioners toward tobacco cessation.

Aim

The aim of the present study was to systemically review the knowledge and attitude of dental practitioners toward tobacco cessation.

Focused question

What knowledge and attitude do the dental practitioners have toward tobacco cessation?

Methods

Eligibility criteria for the studies

The present systematic review included the studies conducted on the knowledge and attitude of dental practitioners toward tobacco cessation. Study selection was based on following inclusion criteria: (1) Studies on tobacco cessation by dental practitioners; (2) published in English language; (3) studies evaluating the knowledge and attitude as outcome measures; (4) observational cross-sectional studies; and (5) studies conducted from the year 1980 to 2017. The studies that were excluded from the present review were (1) reviews; (2) intervention

and experimental studies, (3) unpublished material and abstracts; and (4) studies focusing only on medical professionals.

Search strategy for identification of studies

For the identification of the studies included in this review, we devised the search strategy for each database. The search strategy utilized in the present systematic review is depicted in Figure 1. The search strategy used an amalgamation of controlled vocabulary and free-text terms. A relevant literature search was carried out through a search of scientific databases; the main databases were PubMed, PubMed Central, Cochrane Review, Embase, and Google Scholar. A manual search was also conducted from the institutional library and experts were also contacted for the papers. Various keywords—Dental Practitioner, Attitude, Knowledge, Tobacco Cessation, etc.—were used for the search and various combinations of keywords were also made using “and,” “or” as Boolean operators. We identified 94 papers with these methods out of which only nine articles were selected for inclusion in the review.

Control of bias assessment

A thorough literature search was conducted to find a suitable tool that assessed the quality of observational studies. Issues that were addressed regarding the risk of bias and quality assessment were as follows: (1) completeness of reporting information regarding tobacco cessation, (2) incomplete outcome reporting, (3) reporting a single outcome measure (assessing only knowledge or awareness), (4) design of the study, and (5) any conflict of interest present in the study. After addressing all the criteria in the abovementioned issues, the overall plausible risk of bias in the studies was estimated as moderate to low.

Selection of studies

Studies retrieved from the databases were selected after reading the abstracts and titles, following a calibration exercise with 10% of the studies read by two independent reviewers to determine inter-examiner agreement (Kappa: 0.66–0.95). Disagreements were resolved by consensus. For the rest of the studies, full-text articles were retrieved and were further screened using the STROBE checklist for observational cross-sectional studies.

Assessment of quality

The main aim of the cross-sectional studies is to assess the knowledge and awareness levels. The rationale behind quality assessment was to find out the probability for any type of selection bias (eligibility criteria, sampling strategy, sample size, generalizability, etc.). A total of seven domains were assessed—(1) research design of the study, (2) recruitment strategy of the study, (3) response rate, (4) active sample representation, (5) objective and reliable measures, (6) justification of numbers, and (7) statistical analysis. The quality assessment of the

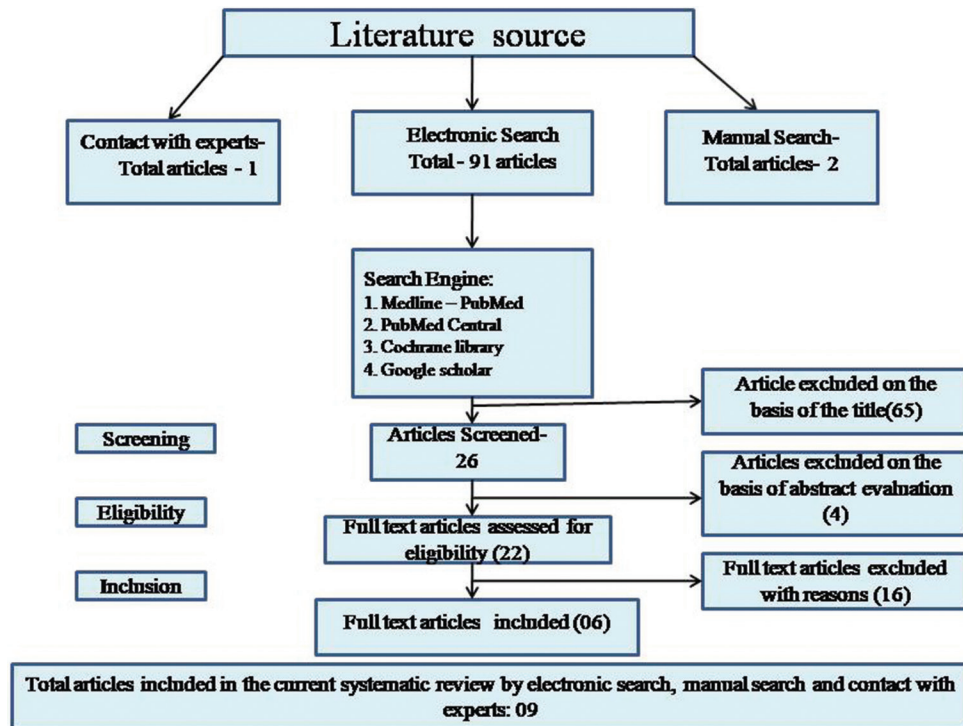


Figure 1: Flowchart depicting search strategy for inclusion of studies

selected studies was done on the basis of guidelines set forth by the PRISMA and STROBE checklist. With the help of e-mails or contact numbers, various corresponding authors of the selected studies were contacted for obtaining the full text of incorporated studies.

Results

A total of nine questionnaire-based cross-sectional studies were included in the present review to assess the attitude and knowledge of dental practitioners toward tobacco cessation. The summary of the results has been provided in Table 1. [5,12-19] The results of the present review revealed that dentists lack sufficient knowledge regarding tobacco cessation but at the same time they have a positive attitude toward the same. Table 1 represents the summary of the results of the included studies and Table 2 represents the total positive knowledge and attitude percentage of dental practitioners regarding tobacco cessation. The present review checked the quality assessment of each study with the help of the BSA Medical Sociology Group and found out that all of the studies have a moderate quality, which assures the credibility of the review [Tables 3a and b]. Overall, dentists feel that they lack satisfactory knowledge, training, time, and assets to offer smoking cessation services and many of them were not aware of existing referral pathways to specialist smoking cessation services, which implicates that there is a deficiency of enough knowledge about tobacco cessation procedures among dentists. At the same time, the dentists show a positive attitude toward giving tobacco cessation advice to their patients.

Discussion

Tobacco usage is a momentous problem worldwide, with a detrimental impact on both oral as well as general health, and tobacco consumption is the foremost cause of morbidity and mortality. Health professionals being a role model for their patients are in a position to reduce the prevalence of tobacco use and dentists also have a unique role in tobacco control because of their position in society. Dentists have the opportunity for regular interaction with their patients and have broad exposure to the general population. They are an important source in educating dental patients about the ill effects of tobacco usage. The present study attempted to systematically review the knowledge and attitudes of dental surgeons toward tobacco cessation.

Strength and weakness of the review

This systematic review involved the search of multiple electronic databases. The reference lists of literature reviews were searched for other studies that could also be included. However, it was not possible to search technical reports, papers from research groups or committees, and preprints and it is possible that some relevant data may have been left behind which could have accounted for some publication bias. It was not possible to perform meta-analysis by combining the data due to marked variability in the selected studies. The quality of the studies ranged between 4 and 5 points out of 7, which depicts the variability in methodology. In contrast to case-control and cohort studies, there is a lesser grade of scientific evidence because of the cross-sectional studies. However, the uses

Table 1: Summary of results

Study and year	Aim	Sample size	Population	Questionnaire details	Results	Outcome
Clover (1999) ^[13]	To provide data on dentists' current practice regarding discussing smoking with patients	136	Dentists who were members of the hunter branch of the ADA, Australia	Questionnaire was in three sections: Current practice regarding smoking; barriers to helping patients quit smoking and practice profile	31% of dentists reported that they are very interested, 52% were somewhat interested, and 18% reported that they were not at all interested in discussing about smoking with patients.	Smoking is a major health problem that needs to be addressed through multidisciplinary action. Dentists in Australia have shown interest in assisting patients to quit smoking.
Albert <i>et al.</i> (2002) ^[14]	To assess the tobacco cessation knowledge, attitudes, and behaviors of dentists participating in a largely managed care dental plan	75 dental offices	Dental offices enrolled in the Aetna Dental Insurance plan from four states of the USA were recruited into the study.	29 close-ended questions. Included sections on (1) office-based barriers to smoking cessation counseling, (2) processes involved in the adoption of cessation, counseling, (3) perceptions of staff and patient acceptance of related changes, (4) allocation of resources	82% of the participants in the tobacco cessation program were told about associations between tobacco use and general health status. 95.2% of the dentists indicated that they were willing to receive training.	Tobacco cessation is not a routine part of dental practice. Knowledge, time spent counseling patients, and specific strategies for quitting were associated with dentists' perceptions of success.
Johnson <i>et al.</i> (2006) ^[15]	To investigate attitudes and opinions of the members of the British Dental Association toward implementing tobacco cessation strategies in dental practices.	870	Participants were BDA members, excluding retired members, overseas members, and students.	14 questions in a section of the BDA omnibus survey 2002.	More than 95% of respondents knew that there was an association between tobacco use and oral diseases and 66% of the respondents had never used tobacco.	The survey showed that during recent years there has been a steady improvement in knowledge, attitudes, and behavior of the UK dental practitioners toward encouraging patients to give up tobacco.
Bhat <i>et al.</i> (2013) ^[12]	To assess the attitudes, practices, and barriers in tobacco cessation among dentists of Udaipur city, Rajasthan, India.	151	Dentists of dental hospitals with dental wing and private dental clinics in Udaipur city, Rajasthan, India	Close-ended questionnaire comprising demographic details and questions pertaining to attitude, beliefs, and barriers.	Majority of the dentists (94%) agreed that it was their responsibility to provide smoking cessation counseling and were at least somewhat confident in providing such counseling.	The dentists had a favorable attitude in tobacco cessation counseling for the patients. However, the lack of time and knowledge were the main identified barriers.
Awan <i>et al.</i> (2015) ^[16]	To evaluate current knowledge and attitudes toward smoking and its cessation among dental professionals.	342	Dental undergraduate students and general dental practitioners in Riyadh, Kingdom of Saudi Arabia.	A self-administered, two-page structured questionnaire derived was used which comprised sociodemographic characteristics, knowledge, and attitudes toward tobacco use and cessation.	62% of GDPs and 67% of dental students rated both smoking cessation and prevention together as a very important preventive measure. 43% of GDPs and 52% of dental students were willing to providing smoking cessation assistance.	More meaningful participation of dental professionals in tobacco cessation is needed, with implications for related curriculum changes.

Contd...

Table 1: Contd...

Study and year	Aim	Sample size	Population	Questionnaire details	Results	Outcome
Razavi <i>et al.</i> (2015) ^[17]	To assess Iranian dental student and dentist practice, knowledge, and attitudes toward smoking cessation programs.	210	150 working dentists and 60 dental students of Isfahan city, Iran	The questionnaire consisted of four main sections: Demographic characteristics, dentists' practice in oral cancer examinations, following the 5A tobacco cessation protocol, dentists and students' opinions about their competencies and skills.	97% of dentists correctly identified the use of tobacco products as the main risk factors for oral cancer. 72% of students and 76% of dentists were willing to follow the protocol of tobacco cessation for their future patients.	Iranian dentist's performance regarding tobacco cessation is weak. Dentists and students indicated their lack of knowledge as the major reason for nonadherence to the protocol.
Keogan <i>et al.</i> (2015) ^[18]	To examine smoking prevalence, training in smoking cessation treatment, and awareness of smoking cessation services available to smokers in Ireland among dentists practicing in Ireland.	289	289 dentists from Ireland	A 40 item questionnaire including age, sex, smoking status, age of smoking initiation, degree of addiction, quitting history, exposure to second-hand smoke, training in smoking cessation, attitudes to tobacco control policies, awareness of smoking cessation services, etc., was introduced.	67% of dentists felt that they should receive training in the treatment of tobacco dependence (TTD), while, only 9% of dentists reported having received such training. A total of 94.7% dentists felt they should advise patients to quit smoking.	There is a large discrepancy between the number of dentists who feel they should provide advice and those who actually do. Overall, dentists feel they lack adequate training, time, and resources to provide smoking cessation services.
Duparea <i>et al.</i> (2015) ^[5]	To assess the knowledge, attitude, and practice among the dentists in giving tobacco cessation advice to the patients	400	Dentists from three regions of Mumbai: South, central, and suburban regions.	A 45 close-ended structured self-report questionnaire was used to obtain information on tobacco use and its health effects, as well as on the knowledge and practices of smoking cessation.	79.5% of the respondents advocated tobacco cessation practices to their patients. Only 52.8% of the clinicians had any knowledge of behavioral methods for tobacco cessation.	There is still a lack of practice in all the components of smoking cessation advice because of the less knowledge of dentists regarding patient counseling.
Bangera <i>et al.</i> (2018) ^[19]	To assess the attitude and practice of dentists in the northern United Arab Emirates toward tobacco cessation advice.	250	Dentists practicing in hospitals, dental clinics, polyclinics, dental clinics, medical centers, and dental centers in primary health care centers in the Northern Emirates.	An interviewer-administered 44 close-ended questionnaire which included the attitude and practice of dentists toward giving smoking cessation advice was used in the study.	Participants with ≤ 10 years of clinical practice were 3.61 times more likely to have a good attitude toward tobacco cessation advice as compared to those with > 10 years' clinical practice.	Dentists had a good attitude toward the provision of tobacco cessation advice but comparatively, suboptimal practice was observed.

of scales for quality assessment also have limitations which may be due to difficulty in justification of the scores assigned to different items/domains.

Details of chief findings

Many of the studies revealed that though dental practitioners agree that smoking is dangerous to health but many of them are not having enough knowledge which is essential for patient counseling. Even Duparea *et al.*^[5] said through her study about the existence of a void in the practice of smoking cessation. According to her study,

dental professionals agreed to the fact that smoking is harmful but still many of them lacked comprehensive knowledge essential for patient counseling. Therefore, an effort should be made to motivate and empower the dental professionals to actively engage in smoking cessation support and also the incorporation of a 4A model of cessation advice (ask, advise, assist, and arrange for follow-up) should be done in the curriculum of dentists.^[20]

Though the dentists have a favorable attitude in tobacco cessation counseling for the patients, the lack of time

and knowledge regarding the management of tobacco cessation was the main identified barrier as concluded in a study by Bhat *et al.*^[12] Most of the surveyed dentists had a favorable attitude toward the stipulation of tobacco cessation counseling, but still, a suboptimal practice toward tobacco cessation was observed. Even training dentists on the methods and techniques of tobacco cessation was also recommended in a study done by Bangera *et al.*^[19] This

indicates that efforts to improve the attitude of dentists toward tobacco cessation interventions would increase the actual involvement of the dentists in the stipulation of such interventions to their patients.

Conclusions

Though family and general practitioners play a most important role in providing support and assistance to individuals in smoking cessation, still, dental professionals are untapped sources of support to tobacco dependable patients.^[20,21] The dental practitioners are frequently in contact and spend enough time with the adult and adolescent smokers to provide dental services, and are thus positioned distinctively to offer precise and reliable information to patients about the perilous effects of tobacco use. Thus, we sturdily propose that dental professionals should obtain appropriate training and attain knowledge along with quantifiable skills for the prevention and cessation of tobacco use and that education on this issue is included in the undergraduate dental curriculum so that the next generation of dentists

Table 2: Percentage of knowledge and attitude among dental practitioners in the included studies

Author and year	Knowledge %	Attitude %
Clover (1999) ^[13]	-	31%
Albert <i>et al.</i> (2002) ^[14]	82%	95.2%
Johnson <i>et al.</i> (2006) ^[15]	95%	92%
Bhat <i>et al.</i> (2013) ^[12]	-	98.7%
Awan <i>et al.</i> (2015) ^[16]	64.5%	47.5%
Razavi <i>et al.</i> (2015) ^[17]	97%	74%
Keogan <i>et al.</i> (2015) ^[18]	-	94.7%
Duparea <i>et al.</i> (2015) ^[5]	52.8%	83%
Bangera <i>et al.</i> (2018) ^[19]	-	88%

Table 3a: Quality assessment of included studies

Author	Year and journal of publication	Study design	Quality assessment tool	Quality rating of study	Comments
Clover <i>et al.</i> ^[13]	1999- Australian Dental Journal	Cross-sectional study	BSA Medical Sociology Group	5	Moderate
Albert <i>et al.</i> ^[14]	2002- American Journal of Public Health	Cross-sectional study	BSA Medical Sociology Group	4	Moderate
Johnson <i>et al.</i> ^[15]	2006- British Dental Journal	Cross-sectional study	BSA Medical Sociology Group	5	Moderate
Bhat <i>et al.</i> ^[12]	2013- Addict Health	Cross-sectional study	BSA Medical Sociology Group	5	Moderate
Awan <i>et al.</i> ^[16]	2015- The Saudi Dental Journal	Cross-sectional study	BSA Medical Sociology Group	5	Moderate
Razavi <i>et al.</i> ^[17]	2015- Asian Pacific Journal of Cancer Prevention	Cross-sectional study	BSA Medical Sociology Group	5	Moderate
Keogan <i>et al.</i> ^[18]	2015- Tobacco Prevention and Cessation	Cross-sectional study	BSA Medical Sociology Group	4	Moderate
Duparea <i>et al.</i> ^[5]	2015- International Journal Of Tobacco And Oral Health	Cross-sectional study	BSA Medical Sociology Group	5	Moderate
Bangera <i>et al.</i> ^[19]	2018- Eastern Mediterranean Health Journal	Cross-sectional study	BSA Medical Sociology Group	5	Moderate

Table 3b: Method of quality assessment of included studies (BSA Medical Sociology)

Author and year	Appropriate research design? (Y/N)	Appropriate recruitment strategy? (Y/N)	Response rate? (Y/N)%	Is sample representative? (All similar populations) (Y/N)	Objective and reliable measures? (Y/N)	Power calculation/ justification of numbers? (Y/N)	Appropriate statistical analysis? (Y/N)	Quality indicators Met (out of 7)
Clover (1999) ^[13]	YES	YES	YES	NO	YES	NO	YES	5
Albert <i>et al.</i> (2002) ^[14]	YES	YES	NO	NO	YES	NO	YES	4
Johnson <i>et al.</i> (2006) ^[15]	YES	YES	YES	NO	YES	NO	YES	5
Bhat <i>et al.</i> (2013) ^[12]	YES	YES	YES	NO	YES	NO	YES	5
Awan <i>et al.</i> (2015) ^[16]	YES	YES	YES	NO	YES	NO	YES	5
Razavi <i>et al.</i> (2015) ^[17]	YES	YES	YES	NO	YES	NO	YES	5
Keogan <i>et al.</i> (2015) ^[18]	YES	YES	NO	NO	YES	NO	YES	4
Duparea <i>et al.</i> (2015) ^[5]	YES	YES	YES	NO	YES	NO	YES	5
Bangera <i>et al.</i> (2018) ^[19]	YES	YES	YES	NO	YES	NO	YES	5

would graduate with competency in assessing and treating tobacco use.

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Conflicts of interest

There are no conflicts of interest.

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