



Practices, Attitude & Perceived Barriers of Dental Students in Substance Use Screening & Interventions in Dental Practice: A Cross-Sectional Study

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Authors' contributions

This work was carried out in collaboration among all authors. Author SG designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors RG and IM managed the analyses of the study. Authors DD and LR managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Context: Tobacco, the leading preventable cause of death including alcohol and illicit drug abuse, cause morbidity and mortality. Dentists deal with such patients & can/ should intervene, preventing any deleterious habits with apt knowledge and training.

Aims: The study assesses the knowledge, attitude and practices amongst dental students to manage patients with tobacco, alcohol and substance abuse in a clinical set up.

Methodology: A cross-sectional questionnaire (self-administered 22 items) survey was conducted among 300 dental students (Undergraduates, Interns, Postgraduates) in a dental college, North India to assess their knowledge, attitude and practices regarding substance abuse- tobacco, alcohol and other illicit drugs. Data were analyzed using SPSS version 16.0 and subjected to Chi-

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square test to determine the significant difference between the dental study groups ($p \leq 0.05$)

Results: There were 37.1% males and 62.9% of females. Final years (33.8%), interns (29.8%) and Post graduates (36.5%) completed the questionnaire. 85.5% Postgraduates, 74.3% final years and 71.9% interns knew where to refer the patients of substance abuse which was statistically significant ($p \leq 0.05$). A majority (91.1%) of interns prescribe or provide tobacco cessation, followed by 87.1% final years and 78.2% post graduates that were significant values.

Conclusions: Although there's huge awareness on the management of patients with substance abuse habits, only a few practice it on patients correctly. Lack of training and its application due to many barriers have been discussed in detail pointing out the disparity in the number of patients with habit history being screened and to those being managed.

Keywords: Tobacco; alcohol; dental practices; substance abuse; intervention.

1. INTRODUCTION

Tobacco- smoke or smokeless forms, has been the deadliest yet a preventable cause of death since times immemorial. Alcohol and drug abuse are increasingly becoming the causes of many diseases worldwide as well as deaths. Hence, the detection and prevention of the same becomes indispensable. According to the latest GATS (Global Adult Tobacco Survey) fact sheet of 2016-17, Tobacco abuse can be avoided which makes it an "avoidable" cause of death around the globe and in India, where 42.4% males, 14.2% women (47.9% are males and 20.3% are females as per GATS 2009-10 globally) of which 92% are aware that tobacco causes serious illnesses [1]. Considering increasing abuse of alcohol which has grown from 2.40,0000 to 5.70,0000 as total alcohol per capita consumption in India, from 2005 to 2016 according to WHO report of 2018, there should be an implementation of stringent policies on prevention of effects from alcohol consumption [2]. Dentists are often the first ones to deal with patients and could be the first to prevent or intervene and counsel patients for tobacco cessation. Patients visit healthcare providers in every sector and this can be seen as a good opportunity to get them screened and provide intervention for harmful and deleterious habits [3].

Tobacco has been responsible for causing about 6 million deaths per one year worldwide and 1 million in India [4]. Dentists form a majority of the healthcare sector whom the patients refer to and substance abuse like tobacco, alcohol, is of clinical relevance to dentists [3]. Dealing with tobacco-related cases needs intervention and counseling of patients by dentists which can reduce morbidity. Dentists are the first and well versed to offer tobacco cessation and counseling and can provide necessary treatment to control

the adverse effects of such substance abuse which would further improve overall health too [5]. Lack of awareness, training and application of the techniques is a huge drawback which will be elaborated in detail in this study [5].

Alcohol consumption is a known etiology to cause various oral as well as systemic manifestations. A DART (Dental Alcohol Reduction Trial) study had been carried out and shows the significance of intervention of dentists in patients with alcohol abuse [6]. Dentists deal with patients who consume alcohol and the necessary advice or guidelines to such patients to leave the habit should be achieved effectively [7]. While we mention this, it is important to take into account the barriers the dentists deal with which includes something as basic as awareness or knowledge about the same [1,6]. While there has been a lot of debate about the same, we have taken up such views in our study.

The illicit drug overuse/ abuse has been seen as prevalent but not restricted to adolescents. Although the highest numbers are not reported in India but looking at the trends of westernization, it becomes increasingly important to keep a check on any patient with a history of abuse of any substance [8]. Abuse of other illicit drugs (OID) not only is harmful to the individual at the physical pathological level and dependence but also for those around them [9]. This issue becomes relevant in a dental set up because of the prescription of drugs for post-procedure pain and other medications which are being rampantly prescribed [10]. Therefore, it needs to be dealt with and addressed well.

The widespread use of substances like tobacco, alcohol, illicit drugs has been very well documented to cause grievous health issues and being in the healthcare sector, it becomes the responsibility of dentists to combat this issue at

the first level itself. Therefore, the present study was conducted to assess the knowledge, attitude and practices related to tobacco, alcohol and substance abuse amongst dental students. By this, we aim to throw light upon the current scenario as well as improvements needed to combat the very prominent issue of the above-discussed substances and their abuse at the level of dental clinics.

2. MATERIALS AND METHODS

A cross-sectional survey was undertaken in a dental institution in Northern India; Delhi NCR. This institute encounters a major amount of patients having a habit history of tobacco, alcohol, drug abuse. A prevalidated self-administered 22 items questionnaire was distributed among 335 undergraduate dental students (final year, interns) and postgraduate students of the institute.

Inclusion Criteria: It has a sample of those who were willing to participate and exposed to clinical settings, included in the study. This sample included the 335 final year dental students, interns and post graduates of the dental institute out of which 320 have completed the questionnaire.

Exclusion criteria: Any incomplete questionnaires were excluded.

Data collection and procedure: A pilot study was conducted among 40 students before the main study to check the feasibility of the questionnaire and accordingly the questionnaire was revised to include the demographic data (year of study, age, sex). A knowledge, aptitude, practices analysis (KAP) based questions on a Likert scale were included for tobacco, alcohol, other illicit drugs (OID) or recreational drugs. Other than this, the questionnaire was divided into 4 sections with questions on screening (6 questions), perceived barriers, attitude and behavior (5 questions) and evidence-based practice (10 questions) respectively. Yes or no questions were also introduced in some of the above-mentioned sections.

Data were analyzed using the SPSS 16.0 software package. Descriptive statistics were addressed and the association was evaluated using Chi-square. Any p-value of less than 0.05 was considered significant.

3. RESULTS

Out of 320 students, 300 students returned the completed questionnaire to the interviewer. In total there were 101 final years, 89 interns and 110 postgraduates in the study. There were 111 (37%) males and 189 (63%) females. Final years (33.8%), interns (29.8%) and Postgraduates (36.5%) completed the questionnaire which had yes and no questions as well as a 5-point Likert scale set as –strongly disagree to strongly agree. These assessed attitude and behavior as well as highlighted the possible barriers due to them. The knowledge-based questions were generally yes and no type. Evidence-based practice questions were a mix of yes and no and other general options. There was a separation of responses from final year, intern and post graduates to get a better picture and result.

The frequency distribution of the response rates of the participants is given in Table 1, where, we can see 97.8% of interns agree that screening is important for tobacco, alcohol and other illicit drug abuse in patients. Complete case history form was the preferable mode of screening for the majority of students that amounted to 73.3% interns. Whereas 69.1% post graduates routinely ask patients for the habit of tobacco. We see 88.2% (majority) of postgraduates refer/ counsel patients with such deleterious habits whereas, in another question, 78.2% of post-graduates feel they know to counsel. Statistically, 85.5% Postgraduates, 74.3% final years and 71.9% interns know where to refer the patients of substance abuse and this came out to be significant. For assessment of the attitude and behavior of final years, of interns and post graduates to find out the barriers in the screening of substance abuse patients, we saw that 40% interns agree lack of time is one of the barriers in counseling patients on substance abuse. 36.4% of Postgraduates agree on the inadequacy of the dental curriculum enabling students to help patients quit the habit. Whereas, 49.5% of final years agree to lack of knowledge/ training in providing interventions is another major barrier. 42.7% of Postgraduates disagree that the dental office isn't an appropriate setting for such cases to be managed. The majority of the students responded by (comprising of 52.8% interns) being neutral about the idea of lack of referral centers for substance abuse patients being a problem.

Table 1. Frequency distribution of the response rates of the participants

Questions	Responses			P VALUE
	Final Year N(%)	Intern N (%)	Post Grad N (%)	
Q1) Is it important to screen patients for alcohol, tobacco, other illicit drugs?				
1. YES	97(96.0)	87(97.8)	107(97.3)	0.770
2. NO	4(4.0)	2(2.2)	3(2.7)	
Q2) What form of screening is most preferable?				
1. COUNSEL/ REFER				0.278
2. COMPLETE CASE HISTORY FORM	22(21.8)	7(7.9)	18(16.4)	
3. VERBAL(IN PERSON)	64(63.4)	67(73.3)	75(68.2)	
4. FORM & VERBAL	15(14.9)	14(31.8)	15(13.6)	
5. ALL OF THESE	0(0.0)	1(1.1)	1(0.9)	
6. Do you routinely ask patients verbally about the following?				
1. TOBACCO	67(66.3)	54(61.4)	76(69.1)	0.08
2. ALCOHOL	13(12.9)	2(2.3)	4(3.6)	
3. OID	2(2.0)	6(6.8)	3(2.7)	
4. TOBACCO & ALCOHOL	14(13.9)	14(15.9)	11(10.0)	
5. ALL OF THE ABOVE	5(5.0)	12(13.6)	16(14.5)	
7. Do you routinely counsel/ refer these patients?				
1. YES	83(82.2)	74(83.1)	97(88.2)	0.329
2. NO	18(17.8)	15(16.9)	13(11.8)	
8. Do you think you know how to counsel?				
1. YES	69(68.3)	69(77.5)	86(78.2)	0.196
2. NO	32(31.7)	20(22.5)	24(21.8)	
9. Do you think you know where to refer?				
1. YES	75(74.3)	64(71.9)	94(85.5)	0.03*
2. NO	25(25.7)	25(28.1)	16(14.5)	
10. Lack of time is one of the barriers in counseling patients on substance abuse				0.742
1. STRONGLY DISAGREE	12(11.9)	8(9.0)	9(8.2)	
2. DISAGREE	15(14.9)	14(15.7)	11(10.0)	
3. NEUTRAL	24(23.8)	20(22.5)	35(31.8)	
4. AGREE	35(34.7)	36(40.4)	42(38.2)	
5. STRONGLY AGREE	15(14.9)	11(12.4)	13(11.8)	
11. Dental curriculum is inadequate in helping patients quit the habit				
1. STRONGLY DISAGREE	9(8.9)	5(5.6)	16(14.5)	0.356
2. DISAGREE	22(21.8)	20(22.5)	27(24.5)	
3. NEUTRAL	29(28.7)	24(27.0)	21(19.1)	
4. AGREE	36(33.6)	31(34.8)	40(36.4)	
5. STRONGLY AGREE	5(5.0)	9(10.1)	6(5.5)	
12. Lack of knowledge/ training in providing interventions is another barrier				
1. STRONGLY DISAGREE	4(4.0)	3(3.4)	12(10.9)	0.111
2. DISAGREE	14(13.9)	9(10.1)	16(14.5)	
3. NEUTRAL	19(18.8)	30(33.7)	26(23.6)	
4. AGREE	50(49.5)	39(43.8)	44(40.0)	
5. STRONGLY AGREE	14(13.9)	8(9.0)	12(10.9)	

Questions	Responses			P VALUE
	Final Year N(%)	Intern N (%)	Post Grad N (%)	
13. Dental office isn't an appropriate setting for such cases -a belief *				
1. STRONGLY DISAGREE	19(18.8)	14(15.7)	17(15.5)	0.555
2. DISAGREE	31(30.7)	32(36.0)	47(42.7)	
3. NEUTRAL	20(19.8)	13(14.6)	21(19.1)	
4. AGREE	25(24.8)	27(30.3)	21(19.1)	
5. STRONGLY AGREE	6(5.9)	3(3.4)	4(3.6)	
14.Lack of referral-centres for substance abuse patients is a problem				
1. STRONGLY DISAGREE	12(11.9)	9(10.1)	8(7.3)	0.768
2. DISAGREE	9(8.9)	10(11.2)	8(7.3)	
3. NEUTRAL	17(16.8)	16(18.0)	24(21.8)	
4. AGREE	52(51.5)	47(52.8)	54(49.1)	
5. STRONGLY AGREE	11(10.9)	7(7.9)	16(14.5)	
15.Trained persons should provide interventions				
1. YES	87(86.1)	79(88.8)	104(94.5)	0.64
2. NO	14(13.9)	10(11.2)	6(5.5)	
16.Do you prescribe/ provide tobacco cessation?				
1. YES	88(87.1)	81(91.1)	86(78.2)	0.027*
2. NO	13(12.9)	8(8.9)	24(21.8)	
17.Do you assess patients for abuse of recreational drugs?				
1. YES	56(55.4)	39(43.8)	70(63.6)	0.20
2. NO	45(44.6)	50(56.2)	40(36.4)	
18. Do you refer them to de-addiction centers?				
1. YES	58(57.4)	37(41.6)	62(56.4)	0.52
2. NO	43(42.6)	52(58.4)	48(43.6)	
19. Dentists are authorized to help the patient cessate the habit of				
1. TOBACCO	16(15.8)	8(9.0)	8(7.3)	0.90
2. ALCOHOL	69(68.3)	62(69.7)	80(72.7)	
3. OID	4(4.0)	0(0.0)	1(0.9)	
4. TOBACCO & ALCOHOL	5(5.0)	9(10.1)	6(5.5)	
5. ALL OF THE ABOVE	7(6.9)	10(11.2)	15(13.6)	
20.Use prompts in patient charts to remind staff to ask/ advise patients about tobacco, alcohol, other drugs				
1. YES	86(85.1)	69(77.5)	97(88.2)	0.116
2.NO	15(14.9)	20(22.5)	13(11.8)	
21.Do you refer to community programs or state quit lines?				
1. YES	71(70.3)	64(71.9)	73(66.4)	0.678
2. NO	30(29.7)	25(28.1)	37(33.6)	
22.Do you offer patients pamphlets or self - help materials?				
1. YES	69(68.3)	59(67.0)	62(56.4)	0.142
2. NO	32(31.7)	29(33.0)	48(43.6)	

*Significance <0.05

A majority of postgraduates (94.5%) believe trained persons should provide interventions. Although 91.1 % of interns prescribe or provide tobacco cessation and this was a statistically significant value. For assessment of patients with a habit/ abuse of recreational drugs, 63.6% post grads agree they do it while 58.4% of interns know that they don't refer them to de-addiction centers. Shockingly, 72.7% post graduates believe dentists have authorized to cessate the habit of alcohol. When it comes to managing such patients, 88.2% of post grads make up the majority to agree that they use prompts in patient charts to remind staff to ask/ advise patients about tobacco, alcohol, other drugs. Whereas, 71.9% of interns refer the patients to community programs or state quit lines and 68.3% final years say they offer patients pamphlets or self - help materials.

4. DISCUSSION

The present study results show the awareness, attitude and practices amongst dental students exposed to patients and clinics in the dental college in Muradnagar, a city in North India. The results can be usefully applied to incorporate training or any necessary changes in the clinics for better counseling and/or management of patients with tobacco, alcohol or substance abuse. This study had contrast as well as similar results as seen in other studies done earlier which not only demonstrated the trends but also differentiates situations at different places.

The students were asked whether screening patients for tobacco, alcohol and other illicit drugs was important, then 97% of all the students agreed as we see in a study conducted by Bhat et al. in Udaipur and many other studies elsewhere [11,12]. Also when asked about whether they know how to counsel then 74.6% agree (68.3%final years and 77.5% interns and 78.2% Postgraduates) and 77.9% know where to refer but the differences in the responses of final years, interns, Postgraduates came out to be significant- 74.3% final years,71.9% interns and 85.5% post graduates, which indicates the difference in knowledge and application as well as the exposure. This brings us to the majority saying (90.3%) that only trained persons should be providing intervention which could be the possible reason as to why the dental students don't seem to be actively participating in patient counseling or referring them. But to our surprise, 70.6% believe that dentists are authorized to help patient cessate alcohol habit and 10.4%

believe that it should rather be tobacco whereas but 1% believe dentists are authorized to help a patient cessate the habit of abuse of other illicit drugs when we know that dental fraternity is evidently associated with tobacco cessation and is rather advised to cessate patients with tobacco habit [13,14]. Accordingly, certain protocols are also set by The Canadian Dental Hygienists Association regarding tobacco cessation [14]. Also, the increasing importance of dentists to screen patients for illicit drugs is being highlighted although its practice is less as in our study, similar to that done by Parish et al. [15].

The results from the attitude-assessment questions highlight some possible barriers that dentists believe in which should be combated to be able to provide effective counseling and management of patients with abusive habits towards tobacco, alcohol or other illicit drugs. Lack of time is a barrier for counseling was "agreed" by 37.8% of all the students and 26.4% were "neutral" to it. This pattern has been observed in some other studies as well which very well points out to the lack of efficiency and implementation even if one possessed knowledge and skills which becomes a sad scenario here [11]. Similarly, lack of knowledge/ training in providing intervention emerges out to be a barrier somehow because 44.5%agree and 25.1% were neutral to it which was similarly highlighted in a study by McNeeley and mentions it as a significant barrier as well as a study conducted in Udaipur, India by Bhat et al. [10, 11]. Another possible barrier, studied by McNeeley et al. again, also suggests is a lack of referral centers, which was "agreed" by 51% all in all as per our study. Inadequacy of our current dental curriculum for management of such patients was agreed by 35.8%, disagreed by 23.1% and 24.7% of all the students were neutral which doesn't give a very authentic number to look into our curriculum. Thankfully, the majority believes that the dental office is the appropriate setting and that dentists should intervene and manage such patients on arrival which is concluded because 36.8% disagreed and 16.4% strongly disagreed when asked if the dental office is not an appropriate setting for such patients.

In practice, mostly all students(84.5%) that is, 91.1% interns prescribe or provide tobacco cessation, followed by 87.1% final years and 78.2% post graduates and these were statistically significant values.Although 65.9% (comprising 69.1% postgraduates, 66.3% final

years, 61.4% interns) say they routinely ask patients for tobacco habit. Only 11% (14.5% post graduates, 13.6% interns, 5% final years) ask about all the habits which include tobacco, alcohol and substance abuse. The type of screening was preferably written- case history form more (68.2% of all students) than verbal (15.1%) or counseling patients(15.7%) but only 0.3% of all students prefer case history written, verbally and refer/ counsel the patients. When they were asked whether they assessed patients for re creational drugs abuse then only 54.8% (63.6% postgraduates, 55.4% final years, 43.8% interns) sincerely actually did and 52% (57.4% final years, 56.4% postgraduates, 41.6% interns) of those students would refer them to de-addiction centers which are comparable to a study done by Parish et al. demonstrating the increasing role of dentists in managing or referring patients of drug abuse to respective centers but the numbers are low when it comes to practice, as seen in our study too [11,15]. In our study, we included questions relating to any self-help materials/ pamphlets given by dentists to patients; 69.6% of students offer patients with self-help material which is 68.3% final years, 67% interns, 56.4% postgraduates. While we see 83.9% of students say they refer patients to community programs or state quit lines.

5. CONCLUSION

This study revolves around the knowledge and the attitude that the dental students have with the practices and application of the skills to be able to manage the patients of various types of prevalent substance abuse. This study successfully highlights the disparity of knowledge amongst the final year, interns and post graduates which also brings to the light that either there should be adequate training and knowledge provision or there should be an introduction of skilled and trained personnel for the same. Although dental practitioners are very well authorized to cessate (at least) the habit of tobacco in the presenting patient yet lack of knowledge amongst the dentists itself doesn't amount to that. Hence we cannot expect the general public to be aware of where to go in such cases for help and support. The problem lies with lack of knowledge, lack of time as well as its application and practice.

6. RECOMMENDATIONS

- Patients with other deleterious habits shall be screened and referred.

- A protocol and procedure be taught and made compulsory, as a part of the curriculum, in any dental set up to screen, manage and/or refer the patients.
- Records of patients, doctors and dentists are stored for any reference whatsoever.
- Increase in referral centers with professionals involved and investigations done.
- Increase in the training of students for correct knowledge, counseling and referring with proper text, materials, demonstrations and seminars.

CONSENT AND ETHICAL APPROVAL

Ethical clearance by the institution was taken after which the study was set in motion. Every patient underwent a written, informed consent and to be a part of this study, taken before the conduct of the study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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