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Indian Dentist's Knowledge, Attitudes, and Willingness to Conduct HIV Testing: A Qualitative Study

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Abstract

India has the third- highest number of PLHIV in the world. Early diagnosis at an oral healthcare setting where a large proportion of Indian population is seen can help prevent HIV transmission. This study expands upon to recognize the role of Indian dentists in providing HIV testing in India. Five focus groups with a total of 33 dentists were conducted in Delhi, Gandhinagar, Bhubaneswar, and Hyderabad (representing low, moderate and high HIV prevalence areas). The study suggested that dentists from all sites felt the need for HIV testing in dental setting. Although, only a small proportion of dentists would be willing to perform the HIV test and suggested that the test should be conducted by specially trained health professionals. Dentists practicing at government dental hospitals/ colleges were more willing to accept the idea of HIV testing in dental setting. Participants reported social stigma, fear of contracting disease, following up with patients with positive results, cost burden, false positives and lack of awareness and training as major barriers in offering HIV testing in dental setting. The study further suggests that there is a need introduce special training programs that will train and raise awareness on HIV management and HIV testing among dentists.

Keywords: HIV; Health; Patients; Dentists

Introduction

Worldwide the acquired immunodeficiency syndrome (AIDS) epidemic has led to the death of 39 million people [1]. India, a developing nation has an adult human immunodeficiency virus (HIV) prevalence rate of 0.27% with more than two million people living with HIV. In 2014, more than one lakh (0.1 million) people died of AIDS in India [2]. However, these estimates do not give any picture about people infected with HIV, but do not know their HIV status.

Ending the AIDS epidemic will involve evidence-based action and multi-sectoral partnerships. The ambitious target program proposed by United Nations Programme on HIV/AIDS (UNAIDS) to help end the AIDS epidemic by 2030 suggests that by 2020, 90% of all people living with HIV will know their HIV status which in turn will generate profound health and economic benefits [1]. In order to accomplish this target there is a need to expand the number and type of health professionals providing prevention, care, and treatment services. With the Indian National AIDS Control Organization (NACO), recommending that HIV testing be undertaken as voluntary testing after counselling and introduction of easy to perform rapid tests [3], the acceptance rate to conduct HIV testing among the Indian dentists might increase at a dental setting where a large number of people tend to visit every day and thus dentists become the first point of contact.

A number of studies across the world have shown that dentists are willing to conduct HIV testing like in the cross-sectional study conducted in Canada 155 (10%) accepted the HIV screening due to its convenience, and/or free cost, and/or instant results [4] In another regional (Xi'an), cross-sectional survey conducted in China (N=477) the percentage of dentists willing to offer HIV testing was as high as 91.2% [5,6] followed by 89% amongst the Korean [7] dentists (N=475). Some of the other studies showed that 65.1% of the Australian [8] dentists (N=532) and 56.7% of the United States (US) dentists [9]. A number of barriers were posed in these studies which tend to limit the role of dentists in conducting HIV testing at a dental setting. The major barriers posed in these studies were lack of education, knowledge and training to administer HIV test, negative reactions from patients, financial constraints, giving out positive test results, and dealing with staff fear [5-9]. Therefore, there is a need to overcome these barriers in order to broaden the scope of HIV testing in the oral health setting.

In the previous quantitative study [10] conducted with 503 Indian dentists practicing at four major cities; Delhi, Gandhinagar, Bhubaneswar, and Hyderabad (representing low, moderate and high HIV prevalence areas) a large proportion (79.9%) of dentists felt that HIV testing is needed in a dental setting as everyday they come across a large number of people from different socio economic backgrounds where many could be at-high risk patients. But at the same time they felt that they lack proper knowledge and skills to perform HIV testing

along with barriers like dealing with possibility of false positives, negative reactions from patients especially in the private sector, and social stigma. In a qualitative study [11] conducted in Hanoi and Ho Chi Minh City, Vietnam (N=42), the majority of respondents (90%) were willing to provide HIV testing, but dentists would need additional training in HIV medicine, including administering tests, giving positive test results, and organizing linkage to care services. Another qualitative study [12] (N=32) conducted at the New York University College of Dentistry in New York City indicated relatively high levels of acceptability among the dentists, but at the same time a number of barriers were identified mainly; lack of skills/knowledge/training, patient service/patient reactions, and logistical issues.

The previous quantitative study conducted with 503 Indian dentists [10] showed some important findings and it was felt that further qualitative work is needed to be conducted in order to explore the findings in more detail. No previous studies have adopted such an approach in relation to this issue. Accordingly, this paper reports the results of a qualitative investigation of Indian dentists' knowledge, attitudes, and willingness to conduct HIV testing.

Materials and Methods

Study design

A qualitative approach utilizing focus group discussions (FGDs) was employed in order to gain insight into and explore Indian dentists' willingness to conduct HIV testing. The data were collected through focus groups with dentists currently practicing in Delhi, Gandhinagar, Bhubaneswar, and Hyderabad (representing low, moderate, and high HIV prevalence areas).

According to NACO's state fact sheets 2014; Delhi, Gujarat, Odisha and Andhra Pradesh has an adult HIV prevalence of 0.22%, 0.33%, 0.40% and 0.75% respectively. The study included a purposeful sample of private and government sector dentists. The final sample included 12 dentists from Delhi and seven each from Hyderabad, Gandhinagar, and Bhubaneswar accounting for a total sample of 33.

Data collection procedures

The FGD discussion guide was prepared with an objective to gain insights in an engaging manner on current challenges in HIV testing in India, prospects and willingness of Indian dentists to conduct rapid HIV testing in a dental set up, understanding the role of dentists in chronic diseases such as HIV, diabetes etc. The discussion guide also aimed at understanding current views and attitudes of Indian dentists on treating and managing HIV positive patients in a dental set up.

The recruitment of the participants began by creating a database of dentists currently practicing at any one of the four study sites and meeting the inclusion criteria of age >18 years, and having completed their bachelor's degree in dentistry. Next, FGD invite letters were emailed to the eligible candidates.

The participants who showed interest were sent confirmation emails details of the study and their participation. Potential participants were given reminder calls and emails for one month before finalizing the participants for the focus groups. Written consent forms were provided to all potential study participants although not everyone signed the consent form as that would have provided the participant identifiers. The ones who chose not to sign their names wrote verbal consent and a short signature to participate in the FGD.

A total of five focus groups were conducted; two in Delhi, and one each in Hyderabad, Gandhinagar, and Bhubaneswar. The focus groups lasted approximately 30 minutes. The focus groups were conducted both by the principal investigator (PI) and research assistant (RA).

Semi- structured focus group guide with open ended questions and probes were used to assess the willingness of participating dentists' to conduct HIV testing. All the focus groups were conducted in English with a slight use of local language in between.

Data analysis

Focus group data were digitally recorded, transcribed verbatim and edited to remove any identifiers. Transcripts were read thoroughly and coded independently by principal investigator (PI) and research assistant (RA). Raw data was read and re- read by the researchers both to familiarize with the content and also as a mean of identifying an identical set of themes and categories.

Primarily, the analysis was initiated using a thematic analysis approach. In thematic analysis, the various themes that emerged from the FGDs were analyzed and categorized in a way to create a pattern, framework, or structure relevant to the research objective. The themes developed were used to prepare to codebook.

The list of codes developed from this process was then compared and refined and in this way, a single coding frame was developed. Once the coding was completed, data were grouped into higher- level themes.

Primary codes, impressions, and patterns related to the research objective were generated, followed by categorization of recurring concepts and ideas. The researchers involved in the analysis later discussed to concur on the emergent themes according to the research question.

Quotations voiced by the participants in the focus group are included in the results section. Qualitative software ATLAS.ti (GmbH, Berlin Germany) and manual coding were employed to manage the coded texts.

Ethics

Ethics approval was received from the Public Health Foundation of India and the University of Sydney.

Results

Focus group outcomes (Table 1)

A total of five focus group discussions (FGDs) were conducted with the dentists practicing at above mentioned four sites.

The aim of the focus groups was to gain insight on the knowledge, attitudes, and willingness of Indian dentists to conduct HIV testing in a dental setting.

Focus Group Themes	Focus Group Observations	Excerpts
Knowledge of HIV and HIV testing Previous encounter with an HIV positive patient. Knowing the HIV status of the patient. Training in HIV management. Awareness about HIV testing.	Previous experience in managing HIV positive patients. Importance of medical history forms. No formal training in HIV management. Identification of at-risk patients with the help of specific oral lesions. HIV testing facility only available at a medical hospital/college and not dental hospital/college. · Awareness about the referral system for HIV positive patients.	"Oral lesions specific to HIV can help us identify high risk patients."- Gandhinagar "The HIV positive status of the patient was mentioned in the medical history form."- Hyderabad "The testing facilities are better in a government sector because they come across a large number of patient every day and from every background. And they are present only in medical set up"- Delhi "We can take up extra short courses on HIV but that is by choice and is not part our syllabus." -Bhubaneswar
Attitudes towards people living with HIV and HIV testing **Reaction to HIV status of the patient.** Barriers to providing HIV testing in a dental setting. Difference in the perspective of government and private sector.	Responsibility of government hospitals to take care of HIV positive patients. Lack of awareness and training in handling at-risk and HIV positive patients. Major barriers; social stigma, fear of contracting the disease, following up with the patient with positive results, cost burden, false positive, lack of awareness and training, and fear of losing the patients (mainly in private sector). Very low probability of patient accepting the HIV test in a dental setting.	"It is the responsibility of the government doctors so referring the patient to them would be the right thing to do."- Gandhinagar "…she told me about her status only when she came for the treatment the second time. I was completely shocked, I mean, she should have told me before." -Bhubaneswar "No way! Patient will never agree to undergo a test like HIV test before the treatment." -Hyderabad "A patient if asked to undergo an HIV test will never back to us. He would think we are causing him unnecessary trouble. There is a lot social stigma attached to HIV in India. We cannot explain and make each and every patient understand that this test will benefit them."- Delhi
Need and willingness to perform HIV testing in a dental setting. Need for HIV testing. Benefits of HIV testing. Role of a dentist. Need for a specialist to manage HIV patients in a dental setting.	Majority reported the need for HIV testing in a dental setting but willingness to conduct the test was low. Preference was on having specialized personnel such as a dental specialist trained in HIV management to conduct HIV testing. Role of dentist is to take care of the early signs and symptoms and properly referring the patient to the right authority. Knowledge on importance of early diagnosis and how HIV status can help prevent transmission.	"Yes, it is needed." Why? "Because knowing the status before is beneficial for both the patient and doctor. We will be able to take proper precautions and treat the patient accordingly. "- Delhi "Yes, because we regularly come in contact with the blood, there are chances of needle prick."- Bhubaneswar "Special set up with specifically trained man power is needed for the same purpose (HIV testing facility)." -Hyderabad "No, HIV testing is definitely needed but I won't be willing to do it myself. We can have a special lab and team for that."- Gandhinagar "How are we supposed to do so many things at a time, while we treat the patient, the sample can be sent to the attached lab, and it is not only about performing the tests, what about handing over the results? What to do in case of positive reports and how to actually convince the patient to undergo the confirmatory test. False negative and false positive, both can cause a major problem. I don't think we can take that all on our shoulders."- Gandhinagar
Recommendations	Special training sessions on HIV management, special camps for students, short term mandatory courses and awareness programs for both doctors and patients. Formulation of set guidelines- on how to attend, treat and follow up with HIV patients, awareness programs on modes of transmission, role of dentists, treatment, precautions while treating the patient, awareness programs for patients- why knowing your HIV status is so important, dealing with the social stigma, need to develop a connection between medical doctors and dentists for a better follow up.	"...see HIV management should be made a part of our curriculum, then only people will take it seriously…short term optional courses are usually taken up by people with special interest in the subject."- Hyderabad "Government should have set guidelines for handling HIV positive patients in a normal set up…"- Delhi "Awareness programs for both doctors and patients are needed…only doctors cannot help…awareness of the patient is very important."- Bhubaneswar

Table 1: Focus group themes, observations, and comments.

Profile of the participants

FGDs conducted consisted of male (55%) and female (45%) dentists between the ages of 25 years and 45 years who were either practicing at a private clinic (30%) or engaged at a government dental hospital/college (70%). Most (79%) of the participants had a master's degree in various specializations in dentistry. Most (77%) of the participants had treated people living with HIV in their dental practice. All were currently practicing at one of the four sites.

Knowledge of HIV and HIV testing among Indian dentists

In Gandhinagar, participants reported that medical history form plays an important role in getting to know the patient. The patient

usually mentions his/her HIV status in the form however, the participants pointed out that this particular practice is found to be more common in government sector in comparison to private clinics where patients usually don't want any inconvenience.

Participants also reported that oral lesions specific to HIV proves to be another best way to identify at risk patients and will help them in referring such patients to the appropriate facility.

"Filling up medical history forms makes it easier for us to identify at risk patients, therefore it is a mandatory thing in all the hospitals and clinics but is more commonly practiced at a government hospital than a private clinic." –Gandhinagar

In Hyderabad, most of the participants had encountered HIV positive patients in their dental practice. Participants reported that in the government sector patients openly mention their HIV status because they know that they will not face any discrimination but in private sector the scenario is a bit different.

"Sometimes they (patients) know their status and openly talk about it but some are not even ready to accept even when the reports are positive." – Hyderabad

In Delhi, participants mentioned that knowing their patient's status is important and for this reason they make them fill out medical history forms where they ask them about patient's background so even if the patient is not aware of the status they can classify them as at risk individuals and provide better vigilance.

In Bhubaneswar, all the participants had come across HIV positive patients but some of the participants shared that at times even when patients know their status, they choose not to mention that to the dentist thinking it is not that important but more because of the social stigma.

Participants from all the four sites reported that the facility of HIV testing is mainly present at a medical hospital/college and not dental hospital/college therefore if a dental hospital/college is linked to a medical hospital/college then things can be done in-house otherwise dentists refer patients to the nearest HIV testing centre. Most of participants mentioned that they are in contact with the testing laboratories; therefore referring patients is not an issue but a follow up usually poses a problem.

"The testing facilities are better in a government sector because they come across a large number of patient every day and from every background."- Delhi

"Definitely, you will never find a HIV testing facility at a private clinic."- Gandhinagar

HIV management is taught mainly in context of pathology and precaution and protocols to be followed in case of an infectious disease which also includes other diseases like hepatitis. No separate subject on HIV management is part of the dentistry curriculum.

However, participants reported that a student with an interest in the subject can attend short term workshops or short term certificate programs but nothing is mandatory. Also, HIV counseling was found completely missing from the curriculum.

Though most of the participants were well aware of HIV testing and available testing facilities in and around their dental set up, a very less proportion of participants knew about rapid HIV testing being used in case of emergencies or its relevance in HIV testing.

They were well aware of the testing techniques like enzyme linked immunosorbent assay (ELISA) and western blot, nearest testing centres, integrated counseling and testing centres (ICTCs), and antiretroviral therapy (ART) centres.

Attitudes towards people living with HIV and HIV testing

In Gandhinagar, participants stated that HIV positive patients should be treated at a government facility and not at private clinics. The main reason for this was stated as better facilities at government hospitals and specially trained dentists. The participants felt that it is the responsibility of dentists practicing at government hospitals and not private clinics to treat HIV positive patients.

"It is the responsibility of the government doctors, so referring the patient to them would be the right thing to do."- Gandhinagar

"Treating that one HIV patient might affect other patients coming to the clinic."- Gandhinagar

In Hyderabad, however, since all the participants were from a government hospital, did not account treating HIV patients as an unusual activity and rather seemed a lot more open about treating and attending at risk and/or HIV positive patients.

In Delhi, the participants pointed out that if they would know the HIV status of the patient in advance, they would be able to take appropriate precautions and if needed would refer the patient for better treatment.

"I don't and won't discriminate on the basis of patient's HIV status. I'll take the appropriate measures to prevent the spread but for that I need to know the status of the patient."-Delhi

In Bhubaneswar, participants shared experiences where they had panicked, and did not know how to handle a situation where only later they came to know about the HIV positive status of the patient. One of the participants shared an incident where the patient had openly told the dentist about the HIV positive status, but in return the dentist refused to treat that patient because of which the dental treatment got delayed.

"She told me about her status only when she came for the second time. I was completely shocked. I mean she should have told me before. I panicked and found myself in a difficult situation."- Bhubaneswar

Major differences were found between the view point of dentists working at a government dental hospital/college and a private dental clinic. Private practitioners felt that it is the duty of a dentist working at a government hospital to treat people living with HIV, because they have better facilities and resources from the government.

The hospitals are designed in a way that all patient types can be treated. Private practitioners also felt that it would only add on to their cost burden. Further, the participants felt that the patients prefer private clinics over government hospitals to get a better service and thus might not be willing to undergo any extra procedurals.

"Patients visit a government hospital with a mindset that they will have to undergo a number of tests, so they never question the doctor, but in a private clinic you can never ask a patient to undergo extra tests, he would simply say you are doing it for money and what is the need."- Hyderabad

"We don't have all the facilities in a private clinic; usually government hospitals are better equipped for handling such patients." -Gandhinagar

"We (private practitioners) hardly come across such patients (high risk/ HIV positive patients), they are usually seen at a government hospital and if by chance we do come across such a patient, we simply refer to the nearest government facility."- Bhubaneswar

Barriers to offering HIV testing in the dental setting

All participants reported social stigma, fear of contracting the disease, following up with the patient with positive results, cost burden, false positives and lack of awareness and training, as the main barriers in offering HIV testing in the dental setting. The participants also felt that the probability of patient accepting to undergo HIV testing is also very low. The main concern of the participants from the private sector was fear of losing patients. Everyone felt that in a highly populated country like India where everyday thousands of patients visit a government dental hospital, introducing something like HIV testing might take a lot of time.

"A patient if asked to undergo an HIV test will never back to us. He would think we are causing him unnecessary trouble. There is a lot social stigma attached to HIV in India. We cannot explain and make each and every patient understand that this test will benefit them."- Delhi

"How are we supposed to do so many things at a time, while we treat the patient, the sample can be sent to the attached lab, and it is not only about performing the tests, what about handing over the results? What to do in case of positive reports and how to actually convince the patient to undergo the confirmatory test. False negative and false positive, both can cause a major problem. I don't think we can take that all on our shoulders."- Bhubaneswar

Need and willingness to conduct HIV testing

Sixty six percent of the participants across four study sites felt the need for HIV screening at a dental setting but only a small proportion 42% were willing to conduct HIV screening and emphasized that specialized professionals should be there to screen patients for HIV.

In Gandhinagar, the participants from the private sector did not feel the need for HIV testing in a dental setting since they address a very limited number of patients. They shared that it might be a good option for government hospitals; otherwise normal referral system is working fine for them.

"Not really a need. We have a limited clientele from a particular background [high risk groups]."- Gandhinagar

Participants from Hyderabad and Delhi felt that there is a need to introduce HIV testing in a dental setting since knowing the HIV status of the patient in advance will help them treat the patient accordingly, and take up appropriate precautionary measures and if needed refer them to better facilities.

"Yes, it is needed." Why? "Because, knowing the status before is beneficial for both the patient and doctor. We will be able to take proper precautions and treat the patient accordingly. "-Delhi

"Since it is not yet part of a dental hospital, it is a must for a dental hospital because we do come across a large number of patients every day." -Hyderabad

Majority of the participants from Bhubaneswar reported the need for HIV testing and were willing to conduct in a dental setting. They felt that introducing HIV testing would be beneficial for both the patient. But at the same time they showed their concern over patient's acceptance.

"Yes, because we regularly come in contact with the blood, there are chances of needle prick."- Bhubaneswar

Though, dentists from all the four sites felt the need for HIV testing in a dental setting but at the same time they pointed out that specially trained people would be required to perform the test.

"Special set up with specifically trained man power is needed for the same purpose (HIV testing facility)." -Hyderabad

Participants from all the four sites felt that their main role as a dentist in dealing with at risk and/or people living with HIV lies in identifying HIV specific signs like the HIV specific oral lesions and to refer the patients to the right facility. The participants showed reluctance in taking up the responsibility of delivering the HIV test results.

Participants who felt that HIV testing is needed in a dental setting also shared some of the benefits of early diagnosis like prevention of patient to patient and patient to doctor cross contamination and help in providing the right treatment.

"We cannot treat every patient as HIV positive; the cost of following control measures is immense. So, knowing the status beforehand will make me aware of his/her status and I will take the set control measures." -Gandhinagar

Next steps and recommendations

Participants from all the four sites showed a need to introduce a specialized training program, campus camps for students, and short term mandatory courses on HIV management in India. Along with these programs participants also felt the need to formulate set guidelines; on how to attend, treat and follow up with HIV patients.

Since lack of awareness was found to be a major barrier, awareness programs for dentists on modes of transmission, role of dentists, treatment, and precautions and awareness programs for patients on why knowing your HIV status is so important, and how to deal with social stigma should be organized on regular basis. There is a need to develop a connection between physicians and dentists for a better follow up.

Discussion

There have been few studies on dentists' attitudes and willingness toward HIV testing in the dental setting. One of the studies previously conducted in Vietnam included a qualitative component of focus groups and showed that 90% of the participants were willing to offer rapid HIV screening. The other studies conducted in Australia and United States showed that 61.5% and 56.7% participants respectively showed willingness to offer rapid HIV screening. Dentist attitudes as to whether rapid HIV screening is needed in the oral health setting varied from 91.2% in China, 79.9% in India and 88% in Korea [13].

This research highlights the important role that dentists can play in early diagnosis of HIV in the oral health setting. The findings show that, though Indian dentists' felt the need for introducing HIV testing, would prefer specially trained health professionals conducting the test.

The study further shows that dentists practicing in the government sector are more willing to conduct the HIV test in comparison to dentists practicing at private sectors posing economic loss, patient's acceptance, and lack of training as major barriers.

Stigma towards HIV positive patients and HIV testing remains a significant barrier preventing access to services. The effects of social stigma manifest the negative attitudes towards HIV patients and testing among the participants in multiple ways. There was variation seen in attitudes of participants towards the people living with HIV across different geographic regions. The observations from Gandhinagar showed the negative attitudes of the participants towards people living with HIV or at risk and may lead to refusal of treatment to many such patients whereas, the participants from Delhi showed positive attitudes towards at risk patients and importance of HIV testing at an early stage.

Training in HIV management and having good knowledge of HIV pose as major drivers of positive attitudes and willingness to conduct HIV testing in the denting setting. It was observed during the discussion in Bhubaneswar that the participants were willing to treat the HIV positive patients but were not fully equipped or trained in managing them which suggests a need to introduce training programs on HIV management in the dental curriculum.

Some of the incidents shared in the discussion at Bhubaneswar showed a delay in treating patients at high risk of HIV and thus showing their negative attitudes and unwillingness to manage or test HIV patients in their premises.

Conclusion

The findings were consistent in all four cities and are found to be dependent more on factors such as experience in dealing with HIV positive patients, type of practice, previous training in HIV management and better awareness and knowledge of HIV and HIV testing. There is a need to design and implement training programs on HIV management. These findings show that specific awareness programs need to be organized both for dentists and patients coming to the dental setting in order to overcome the barriers. Future research may include studies aimed at understanding patient's attitudes and acceptance to HIV testing in the dental setting.

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Conflict of Interest

The authors declare that there is no conflict of interest.

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