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ENVISIONING THE ROLE OF INDIAN DENTISTS IN CONDUCTING RAPID HIV TESTING FOR EARLY DETECTION OF HIV

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ABSTRACT

Early diagnosis of HIV/AIDS is one of the most crucial aspects for an infected individual, as well as being a key public health issue. Research indicates that there were an estimated 2,088,638 people living with HIV in India and that most of the estimated HIV-infected individuals in India remain undiagnosed. Since a large proportion of the population is present at oral healthcare settings for regular checkups, expanding HIV testing to such settings could benefit patients in terms of early detection and, consequently, more timely treatment. This article assesses the potential role of Indian dentists in conducting rapid HIV tests in the oral healthcare setting and discusses the knowledge and willingness of such healthcare professionals in HIV testing.

INTRODUCTION

Background

The National AIDS Control Organization (NACO) stated that India has the third highest number of estimated people living with HIV (PLWH) in the world (http://www.naco.gov.in/upload/2014%20mslns/NACO_English%202013-14.pdf). In 2013-2014, NACO estimated the number of PLWHs in India to be 2,088,638, of which 116,459 were new infections. The report also stated that most of the HIV-infected individuals in India remain undiagnosed. Although a decrease in HIV prevalence has been reported in Southern and Northeastern states because of the various interventions under National AIDS Control Programme and scaled-up prevention strategies, moderate- and low-prevalence states such as Chhattisgarh, Gujarat, Jharkhand, Orissa, Punjab, Assam, Delhi, Haryana, and Uttar Pradesh have seen a rise. Efforts to control the HIV epidemic in India can be undermined by ongoing HIV transmission by undiagnosed individuals; therefore, it is essential and very important to enhance HIV testing and reduce the number of undiagnosed individuals (http://naco.gov.in/upload/Policies%20&% 20Guidelines/5-guildelines% 20for%20hiv% 20testing.pdf). (Campo *et al*., 2012 and Pai, 2007). An early diagnosis of positive HIV status helps prevent transmission to uninfected community members. The oral healthcare setting, where a large number of population is routinely seen, might act as a promising site for these early detection tests (Campo *et al*., 2012; Pai, 2007; Siegel *et al*., 2012 and Pollack *et al*., 2010). This article focuses on the role of Indian oral health practitioners in conducting rapid HIV testing.

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HIV Testing in India

A total of 13,030,000 people were tested for HIV in Indiaduring 2013-2014 (http://www.naco.gov.in/upload/2014%20mslns/NACO_English%202013-14.pdf). The HIV diagnostic kit market in India comprises four distinct segments: NACO laboratories, private and non-governmental organization (NGO) laboratories, major blood banks, and public and private hospitals.

As of March 2014, there were 15,606 integrated counselling and testing centres (ICTCs) in India, compared with just 62 in 1997. (http://www.naco.gov.in/upload/2014%20mslns/NACO_English%202013-14.pdf). Table 1 provides information on types of facilities for HIV counselling and testing services in India.

Rapid HIV Testing in India

Both enzyme-linked immunosorbent assay (ELISA) and rapid tests are widely used in Indian laboratories. While ELISA holds a slight sensitivity advantage over rapid tests, the latter are much faster than conventional ELISA assays and therefore more suitable for point-of-care diagnostics (http://naco.gov.in/upload/Policies%20&%20Guidelines/5-guildelines%20for%20hiv%20testing.pdf).

For routine testing, the lower cost, short turnaround times, ambient storage, and ease of interpretation drive test selection (http://naco.gov.in/upload/Policies% 20&%20Guidelines/5-guildelines%20for%20hiv% 20testing. pdf). A number of rapid HIV tests have been validated in India for ease of performance and quick results. These tests generally require less than 30 minutes and do not require special equipment. They have shown to be as sensitive (99%-100%) and specific (95%-100%) as ELISA (http://www.naco.gov.in/upload/2014%20mslns/NACO_English%202013-14.pdf). Consequently, the tests have been sanctioned for use at ICTCs and patient-to-child transmission centres and emergency situations for screening as well as supplementary/ confirmatory tests following the national strategies/algorithms of testing set by NACO (http://naco.gov.in/upload/Policies% 20&%20Guidelines/5-guildelines%20for%20hiv% 20testing. pdf).

Table 1. Types of facilities for HIV counselling and testing services in India

Type	Facility
Integrated counselling and testing centres (ICTCs)	Early detection of HIV; provision of basic information on modes of transmission and prevention
Facility integrated counselling and testing centres (F-ICTCs)	Set up below the block levels at 24 by 7 public health centre (PHC); staff of the existing health facilities is trained in counselling and testing services of HIV
Private partnership (PPP)	Supply of rapid HIV testing kits, training of existing staff members, quality assurance, supply of protective kits and prophylactic drugs
Mobile ICTC	Counselling; also has space for collection and processing blood samples by a team of paramedical healthcare providers
Community-based HIV screening	HIV testing to all pregnant women in the country; community-based HIV screening is conducted by frontline healthcare workers

Source: Annual Report 2013-2014, NACO. Department of AIDS Control, Ministry of Health & Family Welfare, Government of India.

Indian Dentists and Subsequent Barriers in Conducting Rapid HIV Testing

NACO recommends that HIV testing be undertaken as voluntary testing after counselling for behaviour change, clinical purposes, seroprevalence studies, ensuring safety, and research.

It has also been recommended that HIV tests be regularly offered in patients with clinical markers suggestive of infection (i.e., with disorders "indicative" of underlying HIV infection), or with individual behaviour such as unsafe sex or other risk factors that involve injecting drugs with contaminated injecting equipment (Pai, 2007 and Siegel *et al*., 2007). The oral cavity plays an important role in monitoring the progression of HIV infection through the appearance of specific lesions, which are often the first sign of immune depression (specifically oral candidiasis and oral hairy leukoplakia). It has also been estimated that more than 90% of all HIV patients present one or more oral manifestations during the course of the disease. Oral healthcare practitioners can easily reach out to many at-risk individuals who may not otherwise undergo HIV testing (Pai, 2007; Siegel *et al*., 2007 and Pollack, 2010). Many factors may reduce the acceptability and uptake of voluntary HIV counselling and testing and therefore result in undiagnosed HIV.

These include stigma, discrimination by society at large, lack of clinical skills among healthcare professionals, and lack of information on benefits of early detection and treatment (Pai, 2007 and Shinde, 2012). It should also be noted that knowledge and attitude of healthcare workers with respect to HIV plays an important role in determining their willingness to care and the quality of care they might provide to HIV patients. It was shown in a study conducted in the United States among dental hygienists that increased knowledge about HIV was associated with an increased comfort level in working with medically compromised patients (Santella, 2012). Therefore, lack of proper knowledge and training, fear of contracting the infection, and oral hygienists' perception of patients' acceptance could be the main reasons for not treating HIV patients (Pollack *et al*., 2014). One study conducted in India assessed HIV-related knowledge, attitudes, and risk perception among students and oral healthcare workers.

Findings showed that although most oral healthcare workers had correct knowledge regarding modes of transmission, asymptomatic nature of infection, identification of oral manifestations, their role in suspecting the disease, tests for detection, and universal precautions to be taken for treating the patients with HIV, they were not well informed about availability of vaccine, non-curable nature of the disease, possibility of transmission through saliva, and that treatment of HIV patients require special oral healthcare settings, (Shinde, 2012) which indicates that they might refer patients to other specialists without treating them. A recent study conducted in Xi'an region of China showed that practitioners of younger age, having shorter duration of clinical practice, having earned a postgraduate degree, working in a dental hospital, and having direct contact with infectious diseases by patients' saliva or blood had a high knowledge score (answered 80% or more of the HIV knowledge test questions correctly). Furthermore, participants with high knowledge score were more likely to feel comfortable when advising a preliminary positive HIV test result (Wang *et al*., 2015)

DISCUSSION

The oral healthcare setting may be seen as an important site for early detection of HIV and therefore contribute to combating the HIV epidemic in India.

Moreover, the easy-to-use and easy-to-learn rapid HIV tests can effectively help in enhancing the role of Indian dentists in conducting HIV tests and guiding the appropriate treatment and care path to PLWHs. At the same time, oral healthcare providers need to be equipped with the correct knowledge and positive attitude toward PLWH. The cost of conducting HIV tests in an oral healthcare might pose a problem; therefore, there is a need to develop a policy involving costs of conducting HIV testing. Incorporating this in the national insurance policy might act as a catalyst. Another problem that might arise with routinizing rapid HIV testing in an oral healthcare setting is obtaining consent from patients to test for HIV infection before their dental treatment. Thus, some changes might also be required in the currently recommended policies.

Considering the current scenario in India where a lot of ethical and legal issues are attached to HIV, a lot needs to be done to fill the gap; bringing in Indian dentists can be seen as an important step in that direction. There is a need to collaborate and define the roles and responsibilities of oral healthcare providers in the early detection of HIV disease. Sensitization and motivation of Indian dentists through seminars, workshops, lectures, and continuing dental education programs in order to update their knowledge on HIV and treatment needs of PLWHs can act as an important step in further strengthening the role of Indian dentists. Role of Indian dentists in conducting rapid HIV testing and the associated barriers toward achieving it remain an important public health issue and needs further exploration.

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