Indian adolescents and human immunodeficiency virus: A pilot study from Delhi

Dear Editor,

Adolescence is defined as the period from 10 to 19 years of age. Nearly 22.8% of the Indian population fall in this age group.1 According to the United Nations International Children's Emergency Fund report, India has been ranked 10th in the list of countries that were most affected with human immunodeficiency virus (HIV) in this age group with nearly 46,000 adolescent girls and 49,000 adolescent boys infected by HIV in the year 2009.2 Several risk factors including commercial sex, casual sex, sexual abuse, and substance abuse are found in this group that makes them vulnerable to HIV.3 The risk of HIV in Indian adolescents is further compounded by their incomplete and inaccurate knowledge about it. In addition, the conservative Indian culture with its social restrictions and norms prevents free and open discussion about HIV/acquired immune deficiency syndrome (AIDS) within family and denies the children and adolescents even the basic information about it.

India harbors the third highest HIV-affected population in the world with nearly 35% of all AIDS cases reported in young people of the age group of 15–24 years.3,4 However, despite the significance of adolescents in the HIV epidemic, research work in this group has been meagre. In addition, data generated by the National AIDS Control Organization (NACO) classify late adolescents in the 15–49 years age group while those aged 10–14 years are often masqueraded as pediatric population. As a consequence, the true HIV burden in the Indian adolescent community has not been estimated. The present study was, therefore, designed to study the profile of Indian adolescents seeking HIV counseling and testing and assess the HIV seroprevalence among them.

The present retrospective, record-based analysis was conducted at the Integrated Counseling and Testing Center (ICTC) of a Tertiary Care Health Facility in New Delhi. Data were retrieved from records of a 6 months period, from January to June 2014. The subjects were recruited by consecutive sampling, that is, all 887 adolescents accessing the ICTC services during this period were included in the analysis. Adolescent clients presenting to ICTC underwent a pretest counseling, during which they were interviewed regarding sociodemographic correlates and possible high-risk behavior. Written informed consent was obtained from each patient or from their parents/guardians in case of those <18 years of age. Venous blood samples were collected from each patient, and HIV testing was performed in accordance with strategy III of NACO guidelines.5 A serial testing algorithm was employed whereby all sera were screened by a highly sensitive rapid immunochromatographic assay. While sera with a nonreactive test result were considered negative, those that were reactive for anti-HIV antibodies were further tested with other two rapid immunochromatographic assays based on a different principle or employing different antigens compared to the first test. Positive confirmation by all three tests was mandatory for the sample to be reported as HIV-positive. The study protocol was duly approved by the Institutional Review Board.

Four hundred thirty-one adolescent males and 456 adolescent females attended the ICTC during this period. The mean age of the study population was 15.17 ± 2.95 years (range = 10–19 years). A brief summary of the sociodemographic profile of the study population is provided in Table 1. Eight hundred forty-three (95%) of the adolescents were referred to the ICTC from government health facilities including 71 referrals from tuberculosis clinic, 23 from sexually transmitted infections clinic, and 1 from blood bank. In addition, 31 (3.5%) clients were referred from various nongovernmental organizations and only a minority (13; 1.5%) were direct walk-in clients. The common risk behaviors noted were heterosexual promiscuous in 425 (47.9%), intravenous drug use in 16 (1.8%), homosexuality in 13 (1.5%), use of infected needles and syringes in health facility in 2 (0.2%), and parent to child transmission in 1 (0.1%).

Five (0.6%) of 887 adolescents, including 3 males and 2 females, were reactive for anti-HIV antibodies [a brief summary of the sociodemographic profile of these cases is provided in Table 2]. On the contrary, Kurapati et al. in their study from another Tertiary Care Health Centre in New Delhi, have reported 84 adolescents to be HIV seropositive of the total 979 tested.6 This striking contrast in the figures may be explained by the fact that while most of the ICTC attendees in the above mentioned study were self-referred, the majority of HIV counseling and testing in our study was physician initiated with only a small proportion being direct walk-in clients. Other possible factors could be the higher number of boys attending the ICTC in the above mentioned study versus comparable number of boys and girls in our study. The risk behavior profile of the adolescents in the two studies is also different. While heterosexual promiscuous was the most common risk behavior noted in both studies, parent to child transmission as a risk behavior was recorded in 14.46% of the study participants by Kurapati et al. and in only 0.1% of the adolescents by the authors of the present study.7 Further, on applying logistic regression analysis, it was found that adolescents aged 14–16 years of age were 1.65 times more likely to be HIV reactive than those aged between 17 and 19 years. Naswa and Marfatia state that this middle stage of adolescence (14–16 years)
is marked by an increased scope of feelings, peer influence, and high-risk behaviors, in comparison to late stage (17–19 years) that represents emerging responsible adults.[9]

Heterosexual transmission of HIV was noted in 4 of 5 HIV reactive adolescents while parent to child transmission was observed in 1. As per the 2001 statistics of center for disease control, sexual route as a mode of HIV acquisition and transmission was seen in nearly 66% of the HIV/AIDS cases in the age group of 13–19 years.[9] On the contrary, a study from Vadodara reported vertical route as the commonest mode of HIV transmission, seen in 64% of the HIV reactive adolescents, while 12% acquired infection via the sexual route.[9]

There is a dearth of literature on HIV seroprevalence among Indian adolescents and the trends of HIV transmission in this section of population. We could find only one published peer-reviewed article in medical literature regarding the profile of Indian adolescents seeking ICTC services.[7] Other Indian studies do not provide any data on HIV prevalence in this group and have in fact focused on the confirmed adolescent HIV cases to contemplate the clinical and epidemiological profile of HIV infection among them.[9] Moreover, while the HIV sentinel survey rounds conducted by the government of India attempt to monitor the HIV trends among major population groups, the adolescent population is not specifically addressed by them.[9][9] Our findings clearly indicate that national surveys need to recognize adolescents as a separate group and address the HIV-related issues among them.

The present study has a few limitations. It was a single center-based analysis and the sample size was small. Moreover, the analysis was retrospective, record-based, and relied on self-reporting of behavior. Multicentric and prospective studies on a larger sample size are required to provide a better insight into the adolescent HIV epidemic in India.

Acknowledgments
The authors would like to acknowledge the National AIDS Control Organization for providing test kits.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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