THE JOURNAL OF OBSTETRICS AND GYNECOLOGY OF INDIA

The Journal of Obstetrics and Gynecology of India (March–April 2015) 65(2):104–110
DOI 10.1007/s13224-014-0606-4

ORIGINAL ARTICLE

Knowledge of HIV/AIDS and Attitude Toward Voluntary Counselling and Testing Among Antenatal Clinic Attendees at a Tertiary Care Hospital in India

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Received: 1 August 2014 / Accepted: 15 September 2014 / Published online: 31 October 2014
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Abstract

Background/Purpose Maternal to child transmission (MTCT) is responsible for over 90 % of all childhood HIV infections. Lack of awareness regarding HIV and preventive practices against MTCT maybe one of the reasons behind high HIV transmission rates. In our study, we assessed the knowledge of HIV/AIDS in antenatal women, attending a tertiary care hospital in India as well as their attitude toward voluntary counseling and testing (VCT) for HIV.

Materials and Methods This was a cross-sectional descriptive study carried out from May–July 2012 using a pretested interview-based questionnaire given to 386 antenatal women after obtaining consent. Data were abstracted for knowledge of HIV, MTCT, and attitude toward VCT. Results were expressed as percentages using SPSS v.16 software.

Results Amongst the respondents, 92.5 % had heard of HIV and in 41 % of them, the source of information was through mass media. 81 % were aware of sexual intercourse as a mode of transmission of HIV while 55 % knew that sharing sharp objects and infected blood products can spread HIV. 37.6 % of respondents were aware of MTCT and 44 % heard of antiretroviral therapy as a method of prevention of MTCT. While 68 % were willing to get tested for HIV, 18.9 % knew about the steps involved and 44 % knew where to get VCT.

Conclusion There exists a lack of adequate knowledge regarding HIV and preventive practices against MTCT. Health education and awareness campaigns on MTCT prevention and VCT promotion should target women in

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their antenatal period in order to increase acceptability and accessibility of these services.

Keywords HIV/AIDS · Maternal to child transmission (MTCT) · Voluntary counseling · Testing (VCT) · Antiretroviral therapy

Introduction

In India of the estimated 1.8–2.9 million people living with HIV, 39 % are women with a national antenatal prevalence of 0.48 % [1]. Mother-to-child transmission (MTCT) is responsible for 90 % of childhood HIV infections [2]. The transmission of HIV from infected mothers to infants can occur during antenatal (in utero by transplacental spread), intrapartum (during delivery through an infected birth canal), or postpartum period (through breastfeeding) [3]. Although MTCT accounts for a little less than 4 % of all HIV infections in India, it is the cause of approximately 56,700 children infected with HIV each year [4].

The lack of adequate knowledge regarding HIV and preventive practices against mother-to-child transmission may be one of the reasons for HIV transmission from mother to fetus. In the absence of an effective vaccine and cure, voluntary counseling and testing (VCT), consisting of a minimum of pre- and post-test counseling and testing, has been used as an entry point for behavior change and access to antiretroviral treatment. VCT is thus essential in the prevention of MTCT of HIV through the use of antiretroviral drugs and modification of infant feeding practices [5]. Without these interventions, mother-to-child transmission occurs in 21–32 % of HIV-positive pregnancies [5].

It is now accepted that pregnant women should be offered universal screening to enable those diagnosed with HIV to take up interventions to reduce MTCT [6]. Therefore, it is essential to assess the knowledge about HIV/AIDS among antenatal women and their attitude toward voluntary counseling and testing for HIV.

Methods

This cross-sectional descriptive study was carried out at a tertiary care hospital in South India. The study protocol was cleared by the Institute Research and Ethics committees. All attendees at the antenatal clinic in our hospital during the period from May 2012 to July 2012 were approached personally by the investigator and informed consent was taken for inclusion into the study. Sample size or the study was estimated to be 384 with 5 % precision at 5 % level of significance, and an assumption of 50 % antenatal mothers to have knowledge about HIV. A pretested interview-based questionnaire was administered to all participants taking part in the study (Fig. 1).

Parameters studied include general knowledge of HIV, specific knowledge regarding MTCT, and attitude toward screening of HIV and voluntary counseling. Data were expressed as percentages and then analyzed.

Results

During the study period, 400 antenatal clinic attendees were contacted and 386 subjects responded to participate in the study (96.5 %). In this study, majority of the subjects (52.8 %) belonged to the age group of 21–25 years ($N = 204$), followed by 25 % in the age group 26–30 years ($N = 96$) (Table 1). Majority of subjects were educated up to high school (45 %), while 30 % received education till higher secondary and graduation. 54 % of subjects were primigravida, while 37 % were multigravidae. Of the study subjects, 80 % were housewives, while the remaining 20 % were agricultural workers, laborers or other occupations. Almost all the subjects accessed government health facilities (98 %), while eight subjects availed healthcare from private clinics as well. Knowledge of transmission of HIV, prevention of infection and VCTamong study groups is summarised in Table 1.

Table 1 Socio-demographic features of the study participants ($N = 386$)

Characteristics	*N* (%)
Age	
≤20	64 (16.6)
21–25	204 (52.8)
26–30	96 (24.9)
≥31	22 (5.7)
Gravida	
Primi	193 (53.6)
Second	132 (36.5)
>3	35 (9.9)
Education	
Uneducated	39 (10.1)
Up to primary level	60 (15.5)
Up to high school	172 (44.6)
Occupation	
Housewife	306 (79.3)
Agriculturists and laborers	70 (18.1)
Others	10 (2.6)
Access to healthcare	
Government facilities	378 (97.9)
Private & government facilities	8 (2.1)

Table 2 Knowledge of transmission of HIV, prevention of infection and Voluntary Counseling and testing among the study subjects ($N = 386$)

	Yes	No	Don't know
Knowledge of transmission of HIV			
Sexual intercourse with infected partner	313 (81.1)	0 (0)	73 (18.9)
Sharing sharp object with infected person	200 (51.8)	9 (2.3)	177 (46.9)
Transfusion with infected blood	208 (53.9)	5 (1.3)	173 (44.8)
Mother-to-child transmission	145 (37.6)	7 (1.8)	234 (60.6)
Knowledge of routes of mother-to-child transmission of HIV			
During pregnancy	207 (53.6)	11 (2.8)	168 (43.5)
Through vaginal delivery	86 (22.3)	22 (5.7)	278 (72)
Through caesarean section	61 (15.8)	19 (4.9)	306 (79.3)
Through breastfeeding	171 (44.3)	10 (2.6)	205 (53.1)
Knowledge of prevention of HIV infection			
Is HIV/AIDS preventable?	262 (67.9)	14 (3.6)	110 (28.5)
Abstinence prevents infection with HIV/AIDS	202 (52.3)	49 (13)	139 (36)
Limiting sex to one uninfected partner prevents HIV	209 (54.1)	19 (4.9)	158 (40.9)
Use of condom protects against HIV transmission	158 (40.9)	26 (6.7)	202 (52.3)
Is AIDS completely curable?	101 (26.2)	131 (34)	154 (39.9)
Availability of drugs to treat AIDS patients	170 (44)	71 (18)	145 (37.6)
Knowledge of prevention of mother to child transmission of HIV			
Antiretroviral therapy during pregnancy	171 (44.3)	21 (5.4)	194 (50.3)
Delivery by caesarean section	70 (18.1)	15 (3.9)	301 (78)
Antiretroviral drugs to the newborn	101 (26.2)	17 (4.4)	268 (69.4)
Avoid breastfeeding	136 (35.2)	12 (3.1)	238 (61.7)
Knowledge of voluntary counseling and testing for HIV			
Awareness of laboratory tests to detect HIV infection	252 (65.3)	29 (7.5)	105 (27.2)
Awareness of steps in voluntary counseling and testing	73 (18.9)	160 (41.5)	153 (39.6)
Facility where you could get VCT done	170 (44)	80 (20.7)	136 (35.2)
Ever been tested for HIV/undergone VCT before	151 (39.1)	165 (42.7)	70 (18.1)

While 81 % of the subjects were aware of sexual intercourse as a mode of transmission, only 37.6 % were aware of MTCT. Almost 45 % of women did not know that sharing sharp objects and blood transfusion can result in spread of infection. Regarding awareness of mother-to-child transmission of HIV, half the subjects were aware that transmission could occur during pregnancy and 44 % felt that infants would get infected through breast milk; however, 72 % did not know that transmission occurs during vaginal delivery. However, 31 % of respondents felt that a person can get HIV by sharing a meal with someone who is infected (Table 2).

While 70 % were aware that HIV is preventable, only 41 % were aware that use of condoms prevent HIV infection. Half the subjects were aware that limiting sex to one uninfected partner prevents HIV. Although 44 % were aware of antiretroviral therapy as a method of prevention of MTCT, two thirds were not aware of the role of drugs for infants or the need for avoidance of breastfeeding (70 and 62 %, respectively).

Although 68 % were willing to get tested for HIV, only 18.9 % knew about the steps involved. While 65 % were aware of laboratory tests for detecting HIV, only 44 % were aware where VCT is done. 27 % of subjects were not willing for testing their HIV status. Of the 282 subjects who were willing for HIV testing, 38 % felt VCT is important for initiating early treatment, while 35 % felt it would help in prevention of transmission to others; 21 % felt that VCT is important to prevent transmission of HIV to their children. While 62 % of mothers felt that VCT is justifiable, only 6 % felt that HIV testing is not justified.

Though 65 % approved of routine VCT for all antenatal women, 33 % were not decided in their response. Of the 250 subjects who approved of routine VCT, 248 women thought that testing should be done for antenatal women and their spouses at the same time. Preferred timing for screening for HIV among the respondents was during the antenatal period (30 %), while 27 % women felt that testing needs to be done before marriage. 24 % mothers felt that testing is warranted only at times of illness.

Fig. 1 Questionnaire used for the purpose of gathering data from the study group

Questionnaire

Clinic No - Age- Obstetric Index-

Marital Status: i. Married ii. Separated iii. Divorced iv. Widowed

Level of Education: i. none ii. Primary iii. Secondary iv. Tertiary

Occupation

Economic status (per capita/family income)

Access to health care near home (mention private/public)

1. Have you heard of HIV/AIDS? i. Yes ii. No iii Don`t know
2. How long have you been aware of HIV/AIDS?
3. What is the source of your information about HIV/AIDS?
   i. Friends, relatives, neighbors ii. Religious homes iii. Health workers
   iv. Radio v. Television vi. Newspapers
   vii. Posters viii. Others (state)
4. How is HIV transmitted from one person to another?
   i. Through sexual intercourse with infected partner i. Yes ii. No iii. Don't know
   ii. Through sharing sharp object with infected person i. Yes ii. No iii. Don't know
   iii. Through transfusion with infected blood i. Yes ii. No iii. Don't know
   iv. Through mother to child transmission i. Yes ii. No iii. Don't know
   v. Others (state)
   vi. Don't know
5. Can an apparently healthy individual be infected with HIV? i. Yes ii. No iii. Don't know
6. Can pregnant women be infected with HIV? i. Yes ii. No iii. Don't know
7. Can a person get HIV by sharing a meal with someone who is infected? i. Yes ii. No iii. Don't know
8. Can an infected person transmit the virus to his/her sexual partner(s)? i. Yes ii. No iii. Don't know
9. Does abstaining from sexual intercourse prevent people from contracting HIV/AIDS?
   i. Yes ii. No iii. Don't know
10. Does limiting sex to one uninfected partner prevent a person from contracting HIV/AIDS?
    i. Yes ii. No iii. Don't know
11. Do you think HIV/AIDS is preventable? i. Yes ii. No iii. Don't know
12. Are you aware of availability of drugs to treat AIDS patients? i. Yes ii. No iii. Don't know
13. Do you think AIDS is completely curable? i. Yes ii. No iii. Don't know
14. Does the use of condom protect against HIV transmission? i. Yes ii. No iii. Don't know
15. Can an infected mother transmit the infection to the child? i. Yes ii. No iii. Don't know
16. How can an infected mother transmit the infection to her child?
    i. During pregnancy i. Yes ii. No iii. Don't know
    ii. Through vaginal delivery i. Yes ii. No iii. Don't know
    iii. Through caesarean section i. Yes ii. No iii. Don't know
    iv. Through breastfeeding i. Yes ii. No iii. Don't know
    v. Others (state)
    vi. Don't know
17. How can mother to child transmission of infection be prevented?
    i. Antiretroviral therapy during pregnancy i. Yes ii. No iii. Don't know
    ii. Delivery by caesarean section i. Yes ii. No iii. Don't know
    iii. Giving antiretroviral drugs/injections to the newborn i. Yes ii. No iii. Don't know
    iv. Avoid breastfeeding i. Yes ii. No iii. Don't know
    v. Others (state)
    vi. Don't know

Fig. 1 continued

HIV Voluntary Counselling and Testing

1. Are you aware of laboratory tests to detect infection with HIV? i. Yes ii. No iii. Don't know
2. Are you aware of the steps involved in voluntary counselling and testing for HIV?
   i. Yes ii. No iii. Don't know
3. Do you know where you could get VCT done? i. Yes ii. No iii. Don't know
4. Where would you prefer to get VCT done?
   i) Public Hospital ii) Private clinics iii) No preferences
5. Do you approve of routine VCT for all antenatal women? i. Yes ii. No iii. Don't know
6. Have you been tested for HIV/undergone VCT before? i. Yes ii. No iii. Don't know
   If yes, please state reason(s)
7. Are you willing to get tested for HIV? i. Yes ii. No iii. Don't know
   If yes, please state reason(s)
   i) enable early treatment if positive
   ii) protecting others from getting infected
   iii) preventing mother to child transmission
   iv) for compliance with hospital norms/ Doctor`s orders
   If not, please state reason(s)
   i) don`t consider it necessary
   ii) afraid of social stigmatisation in case of a positive result
   iii) fear of unknown
   iv) marital disharmony
   v) absence of cure anyway
   vi) treatment is costly and not readily available
8. Do you think VCT should be done for antenatal women and their spouses at the same time?
   i. Yes ii. No iii. Don't know
9. What do you think should be the preferred timing for HIV screening?
   i) before marriage
   ii) antenatal period
   iii) during sickness
   iv) no specific time
10. Do you think the reasons for doing VCT are justifiable and score over the social consequences of a positive test?
    i. Yes ii. No iii. Don't know

Amongst the study subjects, 92.5 % had heard of HIV ($N = 357$), while only 29 subjects (7.5 %) had not heard of HIV. In 41 % subjects, the source of information (Fig. 2) was through mass media like television or radio, while 18 % heard about HIV in schools. Other sources of information regarding HIV were through health workers, friends, newspapers, and multiple sources. Half the subjects were aware of HIV for less than 5 years, while one-third of the subjects have known about HIV for 6–10 years.

Discussion

Although the spread of HIV/AIDS is a major concern in India, only 61 % of women aged 15–49 and 84 % of men aged 15–49 have heard of AIDS as per NFHS-3 data, while 92.5 % of the subjects in our study had heard of HIV. This might be due to the increasing awareness in this part of country or the population selected. In a recent study of pregnant women in South India, nearly all had heard of HIV/AIDS and one-third had general knowledge of the disease [7]. The most effective means of getting educational AIDS messages out to this population is through TV and mass media, a finding that is consistent with previous studies [8–10]. The results of this study indicate that the majority of pregnant women from this urban area of India have a good working knowledge of HIV/AIDS. Therefore, HIV knowledge rates in pregnant women continue to rise and appear to be approaching rates traditionally found in higher risk populations [11, 12].

Without interventions, between 20 and 45 % of infants may become infected from HIV-positive mothers and well over 90 % of children less than 15 years living with HIV have been infected through mother-to-child transmission [13, 14]. Regarding awareness of mother-to-child transmission of HIV, half the subjects were aware that transmission could occur during pregnancy and 44 % felt that infants would get infected through breast milk; however, 72 % did not know that transmission occurs during vaginal delivery. A study by Adeleke et al. on awareness and knowledge of MTCT of HIV among mothers attending a pediatric HIV clinic in northern Nigeria also found that

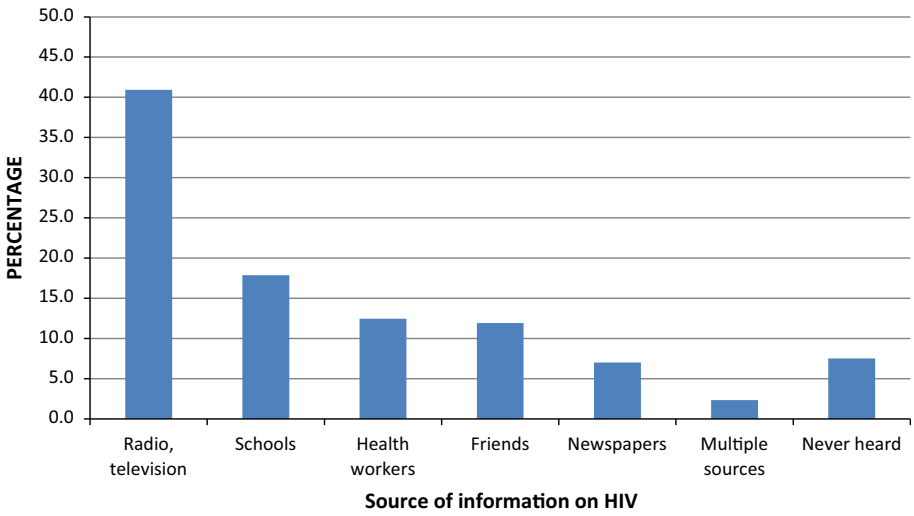

Fig. 2 Source of information on HIV infection among the study subjects

more than half of the respondents had no idea on MTCT; only 6 and 24 % knew cesarean section and avoiding breastfeeding, respectively, could have roles to play in MTCT [15]. This pattern of poor comprehensive knowledge about MTCT of HIV has been identified by previous studies both within and outside Nigeria [16, 17].

Thus, there is need for community education programmes on HIV/AIDS to emphasize on how to prevent MTCT, as this will likely improve uptake of VCT and reduce stigmatization among people living with HIV and help reduce spread of HIV from MTCT.

Conclusion

The lack of adequate knowledge regarding HIV and preventive practices against MTCT may be one of the reasons for HIV transmission from mother to fetus. In the absence of an effective vaccine and cure, voluntary counseling and testing appears to be essential in the prevention of MTCT of HIV. Health education and awareness campaigns on MTCT prevention and VCT promotion should target women in their antenatal period in order to increase acceptability and accessibility of these services.

Compliance with ethical requirements and Conflict of interest All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008 (5). Informed consent was obtained from all patients for being included in the study. Haritha Sagili, Swarup Kumar, Subitha Lakshminarayanan, Dasari Papa, and C. Abi declare that they have no conflict of interests.

References

1. UNGASS country Progress Report 2008: India. http://data.unaids.org/pub/report/2008/india_2008_country_progress_report_en.pdf. Accessed 29 Jan 2011.
2. Nduati R, John G, Mbori-Ngacha D, et al. Effect of breast feeding and formula on transmission of HIV-1, a randomized clinical trial. J Am Med Assoc. 2000;283:1167–74.
3. European Collaborative Study. Risk factors for mother-to-child transmission of HIV-1. Lancet. 1992;339:1007–12.
4. National AIDS Control Organization (2009–2010). Annual Report 2009–2010. Department of AIDS Control, Ministry of Health and Family Welfare Govt. of India. www.nacoonline.org.
5. Wade NA, Birkhead GS, Warren BL. Abbreviated regimens of Zidovudine prophylaxis and perinatal transmission of the human immuno-deficiency virus. N Engl Med. 1998;339:1409–14.
6. CDC (1995) Centers for Disease Control and Prevention US Public Health Service Recommendations for Human immuno-deficiency virus counselling and testing for pregnant women. MMWR. 1995; 44:1–15.
7. Brown H, Vallabhaneni S, Solomon S, et al. Attitudes towards prenatal HIV testing and treatment among pregnant women in southern India. Int J STD AIDS. 2001;12:390–4.
8. Tibdewel SS, Wadhva SK. HIV/AIDS awareness among hospital employees. Indian J Med Sci. 2001;55:69–72.
9. Chatterjee N. AIDS-related information exposure in the mass media and discussion within social networks among married women in Bombay. India AIDS Care. 1999;11:443–6.
10. Porter SB. Public knowledge and attitudes about AIDS among adults in Calcutta. India AIDS Care. 1993;5:169–76.
11. Jana S, Chakraborty AK, Das A, et al. Community based survey of STD/HIV infection among commercial sex-workers in Calcutta (India), part II. Sexual behavior, knowledge and attitude towards STD. J Commun Dis. 1994;26:168–71.
12. Mawar N, Mehendale S, Thilakavathi S, et al. Awareness and knowledge of AIDS and HIV risk among women attending STD clinics in Pune, India. Indian J Med Res. 1997;106:212–22.
13. Momoh MA, Ezugworie OJ. Attitude of intending couple toward compulsory HIV screening test: a means to control the spread of HIV infection. J Basic Clin Pharm. 2010;1(2):129–32.

14. Stone D, Kaleeba N. AIDS prevention Handbook 1998. Counseling and AIDS. 1998.
15. Adeleke SI, Mukhtar-Yola M, Gwarzo GD. Awareness and knowledge of mother-to-child transmission of HIV among mothers attending the pediatric HIV clinic, Kano. Nigeria Ann Afr Med. 2009;8(4):210–4.
16. Abiodun MO, Ijaiya MA, Aboyeji PA. Awareness and knowledge of Mother-To-child transmission of HIV among pregnant women. J Natl Med Assoc. 2007;99(7):758–63.
17. Harms G, Mayer A, Karcher H. Prevention of mother to child transmission of HIV in Kenya, Tanzania and Uganda. Berlin: Report of government of Tanzania PMTCT project, International coordination office; 2003. pp. 1–26.