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Original Research Article

Awareness of HIV and prevention of parent-to-child transmission among antenatal mothers, Solur, Magadi Taluk, Ramnagara district, Karnataka

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ABSTRACT

Background: Globally, 4,30,000 children aged under 15 years were infected with HIV in 2008. Most of the cases were reported in developing countries, of which more than 90 percent are the result of mother-to-child transmission during pregnancy, labour and delivery or breast feeding. Parent-to-child transmission accounts for about 4.3 percent of the overall HIV transmission in the country. This study was conducted to assess the awareness of HIV and its vertical transmission in pregnancy and its determinants among pregnant women availing care at a rural maternity hospital in Karnataka.
Methods: A hospital-based cross-sectional study in Ramnagara district, in which 231 pregnant women were recruited by consecutive sampling and administered a face-validated structured questionnaire. A 55-item questionnaire to assess awareness about HIV and prevention of parent to child transmission was administered. Women were given knowledge scores based on answers to the questionnaire and women securing more than 70% of the total score, were considered to have good awareness.
Results: The study population included 132 (57%) primigravida. The mean age of the study population was 23.8±3.67 years. Among the study participants, only 93 (42%) women were aware of vertical transmission of HIV-AIDS. Awareness regarding HIV in pregnancy was found to be significantly associated with type of family ($p=0.024$) and age of study participant ($p<0.002$).
Conclusions: Awareness regarding prevention of HIV-AIDS and parent-to-child transmission of HIV-AIDS among antenatal mothers is poor. A significant association was found between type of family and age of study participant and knowledge regarding HIV-AIDS among the study participants. This can be improved by addressing different myths and misconceptions regarding transmission of HIV in routine health education programmes.

Keywords: Acquired immunodeficiency syndrome, Antenatal care, HIV-AIDS, Infectious disease transmission, Vertical transmission

INTRODUCTION

The National Aids Control Organisation states that the estimated adult prevalence of HIV in the state of Karnataka as per the recently released 'India HIV Estimation Report, 2017' is 0.47%.[1] The transmission of HIV from mother to new-born, in terms of pooled prevalence in India is estimated to be as high as 8.76%.[2]

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). Factors that contribute to the high prevalence of transmission of HIV from mother to new-born include the lack of adequate knowledge regarding HIV. Delayed attendance of the mother to the antenatal clinics, stigma

and discrimination associated with HIV-AIDS, access to health facilities and maternal and child health facilities also contributes to the high prevalence of transmission of HIV from mother to new-born.[3,7] Absence of an effective vaccine and cure form the crippling truth of this disease. In the absence of a vaccine and cure, voluntary counselling and testing has been added to the antenatal care essentials.[3]

It is now accepted that pregnant women should be offered universal screening to enable those diagnosed with HIV to take up interventions to reduce the mother-to-child transmission of HIV.[3] HIV testing in the context of prenatal care is now socially acceptable and indicates that the desire to protect one's child overrides the social stigma associated with HIV.[4]

Awareness regarding HIV-AIDS, the transmission of the disease, and mother-to-child transmission of disease were the three components included in the study. Various myths and misconceptions regarding the transmission of HIV were also identified in our study. Assessment of awareness regarding PPTCT (prevention of parent-to-child transmission) also helped in identifying key points to be included in the health education sessions that were given to the mothers during antenatal care consultations. A study addressing these aspects has not been conducted in the study area chosen. This study intended to assess the awareness regarding HIV-AIDS and parent to child transmission of HIV-AIDS among women attending antenatal clinic at Snehalaya Hospital, Solur, Magadi Taluk, Ramnagara district.

METHODS

Study setting

The study was conducted at Snehalaya Hospital, Solur, Magadi Taluk, Ramnagara district during the months of December 2021 and February 2021.

Study design

This was a hospital-based cross-sectional study.

Study population

Pregnant women attending antenatal clinic at Snehalaya Hospital.

Sample size

A sample size of 231 participants was calculated considering relative deviate at 95% confidence level (1.96) and prevalence of awareness among pregnant mothers regarding mother to child transmission of HIV as 84%.[5]

Sampling method

A consecutive method of sampling was followed.

Inclusion criteria

Pregnant women aged 18 years and above, availing antenatal services at the outpatient clinic or admitted for in-patient care at the rural maternity hospital

Exclusion criteria

Women who were in labor, had serious medical conditions or who were unable to comprehend the questionnaire were excluded from the study.

Study tool

A face validated semi-structured questionnaire consisting of socio-demographic details, obstetric history, personal history, awareness of the disease (HIV-AIDS, awareness of transmission of HIV, awareness of diagnosis of HIV in pregnancy, awareness of prevention of parent to child transmission of HIV, myths, and misconceptions regarding HIV in pregnancy was administered to the study participants.

Operational definitions

Prevention of parent-to-child transmission program: Prevention of parent-to-child transmission program prevents the perinatal transmission of HIV from an HIV-infected pregnant mother to her newborn baby.

Assessment of knowledge

Knowledge scores were calculated based on answers given by the participants. Every correct response was given '1 point' each, every incorrect response was given '0 points. The maximum score was 26.

Ethical considerations

Ethical clearance was obtained from the institutional ethics committee of St. John's Medical College prior to the commencement of the study. After obtaining written informed consent from the participants, the study tool was administered.

Statistical analysis

Data was collected using the Epicollect5 application and was simultaneously collated into Microsoft Excel. Data were analyzed using SPSS Version 21. Sociodemographic variables and outcome variables were described as proportions and percentages. Tests of statistics such as the Kruskal-Wallis test were applied to derive associations between various categorical variables and knowledge scores At the end of the interview, subjects who were found to have poor awareness regarding HIV AIDS and its transmission in pregnancy were counselled regarding modes of transmission, safe family planning methods and prevention of parent to child transmission.

RESULTS

Among the study participants, 132 (57%) pregnant women were primigravida. Safe sexual practices were followed by only 26 (11%) pregnant women among whom 14 (51%) study participants responded that they use condoms as a method of contraception during the current pregnancy. Most of the study participants responded that they had heard of the term 'HIV AIDS'.

Table 1: Socio-demographic characteristics of the study participants.

Variables		N (%)
Age (years)	Mean±SD	23.8±3.67
Years of formal education (years)	Mean±SD	13.7±3.6
Occupation	Homemaker	213 (92)
	Gainfully employed	18 (8)
Type of family	Joint/three gen/ extended	127 (55)
	Nuclear	104 (45)
Socioeconomic status (BG Prasad classification)	I	64 (28)
	II	59 (26)
	III	30 (13)
	IV	21 (9)
	V	22 (10)
Religion	Hindu	218 (94)
	Muslim	11 (5)
	Christian	1 (0.5)
	Others	1 (0.5)
Occupation of spouse	Gainfully employed	227 (98)
	Unemployed	4 (2)

Table 2: Awareness regarding HIV-AIDS.

Awareness	N (%)
Heard of HIV AIDS	207 (90)
Transmission and Risk of HIV	
HIV can spread from person to person	183 (79)
HIV can be transmitted through contact with infected blood	159 (69)
HIV can be transmitted through sexual contact	172 (75)
HIV can be transmitted through shared syringes/needles	171 (74)
HIV-positive mothers can breastfeed	175 (75)
The use of condoms can prevent HIV transmission	81 (35)
HIV can spread from mother to child during pregnancy	147 (64)
HIV can cross the placenta and infect the fetus	47 (20)
HIV can be transmitted during delivery due to contact of the baby with the mother's body fluids	24 (11)
HIV can be transmitted during breastfeeding	46 (20)
People with multiple sexual partners are at a higher risk of HIV	84 (36)
Homosexuals are at a higher risk of HIV	1 (0.4)
Female sex workers are at a higher risk of HIV	31 (13.5)
Drug addicts are at a higher risk of HIV	12 (5)
Patients receiving repeated blood transfusions are at a higher risk of HIV	19 (8)
Prevention of Parent-to-child-transmission	
It is necessary to undergo HIV testing during pregnancy	177 (76)
HIV test should preferably be done in the first trimester of pregnancy	120 (52)
HIV is commonly diagnosed by a blood test	140 (60)
Treatment for HIV is available	136 (59)
HIV transmission from Mother to unborn child can be prevented	102 (44)
Free medicines are available to prevent HIV transmission from mother to the unborn child	98 (42)
Medicines for HIV can be given to new-born of HIV infected mother	90 (39)
HIV infected mothers can take medicines for HIV while breastfeeding	79 (34)

Table 3: Myths and misconceptions regarding HIV-AIDS.

Myths and misconceptions regarding HIV-AIDS	N (%)
HIV positive mothers cannot come to the ANC clinic with other pregnant women	121 (52)
Isolation of HIV positive individuals is required	50 (22)
HIV spreads by sharing food/ utensils with an infected person	68 (29)
HIV spreads through a handshake	40 (17)
HIV spreads by hugging an infected person	43 (19)
HIV spreads by mosquito bites	114 (49)
HIV spreads by sharing toilets with an infected person	95 (41)
HIV can be spread by the cough/sneeze of an infected person	67 (29)
HIV can be diagnosed by an x-ray/scan	8 (4)
HIV can be completely and permanently cured	53 (23)
HIV causes deformity in new-born	40 (17)
Pregnancy must be terminated if mother tests HIV positive	84 (37)

Table 4: Associations between categorical variables and knowledge scores.

Type of family	Total knowledge score median (IQR)	P value
Nuclear family	12 (8.25-14)	0.019*
Joint family	11 (5-14)	
Age	**Total knowledge score median (IQR)**	**P value**
<20 years	8 (1-11)	0.002*
21-25 years	12 (8.75-15)	
26-30 years	11 (6.5-14)	
≥31 years	12 (8.5-14.5)	

*Kruskal-Wallis test

Table 5: Correlation between years of education and awareness scores.

	Awareness regarding HIV-AIDS	
Years of education (in years)	Pearson's correlation	0.494
	P value	0.003
	N	231

Among the 231 participants 177 (77%) women underwent HIV testing. Only 15 (7%) participants responded that they received information regarding HIV during ANC visits. The mean knowledge scores were calculated to be 10.10±5.213 with a range between 1 and 19. Among the study participants, only 93 (42%) women were aware of vertical transmission of HIV-AIDS. Awareness regarding HIV in pregnancy was found to be significantly associated with the type of family (p=0.024) and age of the study participants (p<0.002).

DISCUSSION

The majority of the study participants were aware of the clinical condition of HIV-AIDS. Sexual intercourse was identified as a mode of transmission by 173(75%) study participants. The finding of our study is similar to national statistics where sexual intercourse is the route of transmission mostly known to respondents.[8]

A hospital-based cross-sectional study conducted by Edward et al among 200 pregnant mothers at an ANC clinic in Sri Ramachandra Medical College, Chennai revealed that the knowledge regarding the vertical transmission of HIV-AIDS was 84%.[5] The knowledge regarding vertical transmission was much lower in our study probably due to the predominantly rural subjects. Individuals in an urban area like Chennai have better access to the health care system and hence better knowledge. Several studies in India have found that stigmatization, experiences or fears are strongly linked to a delay in seeking treatment, with persons particularly concerned about their positive status being revealed to others without their consent.[9] Another reason for poor awareness could be because this study was conducted during the pandemic and so the antenatal care visits were of shorter duration, compromising the time allotted for health education regarding pregnancy, sexually transmitted diseases and family planning methods. Following the first trimester antenatal visits where health education regarding sexually transmitted diseases are conducted, no reinforcement of these aspects was carried out in the subsequent antenatal clinics. However, 50% of the pregnant mothers responded that they are unaware of the possibility of prevention of HIV transmission from mother to unborn child.

A cross-sectional study among 850 individuals of the age group 18 to 30 years in rural areas of Andhra Pradesh

revealed that 17 % of the study participants responded that HIV-AIDS is transmitted via mosquito bites.[6] Our study found that 49% of the study participants responded that HIV-AIDS is transmitted via mosquito bites. Among the study participants 41% of the individuals were of the opinion that one can contract HIV-AIDS if an individual shares the toilet with the infected individual. Lack of health education sessions focusing on key points such as modes of transmission of HIV-AIDS during the antenatal care visits poses as one of the problems leading to myths and misconceptions around HIV-AIDS.[10]

More than half of the study population responded that the HIV-positive mother cannot come to the antenatal clinic or attend the same along with other pregnant women. The stigma associated with HIV among pregnant women along with the misconceptions as mentioned above worsens the burden of the disease by posing a barrier to seeking health care services.[11]

A total of 176 (77%) of the women in our study agreed that HIV testing is required during pregnancy. A woman's decision to test for HIV and undergo voluntary counselling might be influenced by community norms, attitudes, and support for a specific program or activity. Men as key decision-makers have been left out of many programs that have primarily focused on getting women to seek PPTCT services. Men will not become a supporting force for PPTCT uptake and compliance if they are not informed about the advantages of PPTCT and are aware of the hazards to their children.[10,12] These factors might have influenced the attitude towards voluntary testing and counselling of the study subjects.

India's PPTCT (prevention of parent-to-child transmission of HIV) program is one of the world's largest. It employs outreach workers (ORWs) to help patients use the services; however, the ORWs' issues and opinions on the program's performance are unclear.[13] During village health and nutrition days, field functionaries like ASHAs, AWWs, and ANMs engage in community sensitization and mobilization. In order to deliver RCH-related services in the villages, ANMs and ASHAs have to develop a strong bonding with the beneficiaries. All pregnant women and mothers are mobilized for monthly meetings by ASHAs and local AWWs, who also encourage pregnant women to attend routine prenatal check-ups.[14] One of the points of care where the mother is spoken to regarding vertical transmission of HIV is during the antenatal visits at different clinics and hospitals. Our study shows that majority of the mothers did not receive any information regarding PPTCT during the antenatal visits. Long waiting hours at the ANC clinics were reported to be one of the challenges reported by the pregnant women.

This study suggested a weak correlation between years of education and the awareness scores among the study participants. Several studies conducted in the past conclude that the degree of education of pregnant women has a significant impact on their use of the PPTCT programme. Adults who lack formal education lack access to written information, they are unable to understand what HIV is and how it spreads, making them vulnerable to infection.[15]

CONCLUSION

Our study concluded that awareness regarding prevention of parent to child transmission of HIV-AIDS among antenatal mothers is poor. Significant association was found between type of family and knowledge regarding HIV-AIDS among the study participants. Significant association was found between age of the study participant and knowledge regarding HIV AIDS among the study participants. Our study also recommends the incorporation of health education sessions at antenatal clinics, addressing common myths during antenatal consultation, and displaying IEC materials regarding the vertical transmission of HIV AIDS in antenatal clinics. Health education regarding HIV-AIDS, modes of transmission, prevention of transmission of STD (sexually transmitted diseases)- contraceptives, and availability of treatment for HIV-AIDS must be given to the general population.

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Ethical approval: The study was approved by the Institutional Ethics Committee of St. John's Medical College, IEC Approval #42/2021

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