Is there any perceptiveness about the mode of transmission of human immunodeficiency virus/acquired immune deficiency syndrome? An analysis among the adolescent tribal students in Tamil Nadu

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Abstract

Background: Cognizance about human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) among the community is still lacking. Seldom studies done in tribal area and to indentify the awareness about HIV/AIDS among the adolescent tribal students in Jawadhu hills of Tamil Nadu, with the objectives includes on social, demographical, and knowledge about HIV/AIDS were taken. For primary data, survey method and secondary data from various literatures gathered. Materials and Methods: Schedule tribe adolescent students, between the age groups of 13–21, years, from 8th to 12th standard, exclusively from Vellore and Tiruvannamalai educational districts, were taken, by applying STRATA method. Results: A total of 938 students from various tribal schools participated. Amongst them, 507 (54%) were males and 431 (46%) were females. Half of the respondents (50%) agreed that blood transfusion, intravenous drug use, and sharing infected needles are the major modes of transmission. Nearly 35% agreed that HIV/AIDS is transmitted by hugging, tattooing, dirty hands, breastfeeding, kissing on cheeks, shaving at the barber shop, shaking hands with AIDS patients, homosexuality and are food and waterborne. Conclusions: Formal HIV/AIDS education should be mandatory in their curriculum, where teachers get an opportunity to deliver the scientific information about HIV/AIDS. To acquire better knowledge about HIV/AIDS, sex education should be included in the mainstream of curriculum with the assistance of educational consultants, professional social workers, and also local non-governmental organizations to conduct further mindfulness camps about the HIV/AIDS.

Key words: Acquired immune deficiency syndrome, adolescent tribal students, human immunodeficiency virus, Jawadhu hills, mode of transmission

INTRODUCTION

Among serious health problems of 21st century is acquired immunodeficiency syndrome (AIDS), with the fourth epidemic, challenging the Asian region. Approximately 2.5 million infected in India living with HIV/AIDS, ranked third, behind South Africa and Nigeria. This epidemic is more generalized with the burden, being faced by urban, and low education levels, as HIV prevention activities, initially focused on high-risk groups, including intravenous drug users, female sex workers, and truck drivers.

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HIV/AIDS has had its greatest shocking impacts in India next to Africa and occurrence of the illness remains in most nations. An obvious precondition for behavior modification is that people should considerate the disease and how infection can be prevented. Several studies carried out in the past to apprehend the susceptibility of Indian society to HIV and other sexually transmitted infections.

In India, scheduled castes and tribes are undergoing extensive social downgrading and hierarchy with respect to all aspects, while other backward classes experienced social relegation to a lesser degree.[9] Peer education, in spite of its long history, being applied in health education and especially for HIV prevention started in the 1980s, gaining in popularity in the recent years in health education, encouraging interactions between peers.[9] Interventions in the form of peer education about HIV/AIDS prevention are normally based on behavioral theories; design of the intervention is based partly on the theory of diffusion of innovations.[10] Innovation can be new information, an attitude, belief, practice, or any other objects that are perceived as new, by the individual or the community and can be diffused to a specific group. Communication of innovation through certain channels among members of a social system (here, the school), the “key role” is played by the opinion leaders (teachers) as “change agents.”

Peer educators play this role by influencing the activities that are organized for their peers, also other relevance in the peer’s environment (family, friends, etc.) through an informal diffusion.[11] Forty percent of all new infections worldwide were between 15 and 24 years.[12] The United States predicted that more than a million adults and adolescents live with HIV infection at the end of 2006.[13] Information on knowledge and risk behaviors related to HIV is important for better understanding and identifying the high-risk populations. Focus of many preventative programs is to increase knowledge about sexual transmission and to overcome misconceptions that may be acting as a deterrent in behavioral change toward safer practices.

### MATERIALS AND METHODS

Descriptive, cross-sectional study conducted among the students of 8th to 12th standard, in Vellore and Tiruvannamalai districts. Total study population were \( n = 3752 \) and using simple, systematic, stratified random selection method, 25% of the respondents selected. Male (507 54%) and female students (431 46%), who were attended school on that day were taken, by applying stratify simple systematic random selection method. Survey questionnaire consists of knowledge about HIV/AIDS, mode of transmission, and prevention of HIV/AIDS. Cronbach’s alpha (\( \alpha \)) reliability test measures the bunch of questionnaire about the mode of transmission was 0.724 established. According to Ogbazi and Okpala, reliability coefficient was higher than criteria of 0.60, was acceptable for good instruments.[14] Study purpose explained and written consent was obtained. Ethical procedure carried out, and their identification was highly maintained. Descriptive statistics were used to analyze the demographical details, and Pearson’s Chi-square test was used to analyze the association.

### RESULTS

A total of 938 students participated and forest school students constitute more than and nearly three fourth of the students(72.1%) and one-third of the students (72.1%) were between the age group of 13–15 years. Male and female students are almost equal, and nearly 50% of the respondents’ parents were illiterate [Table 1].

Oladepo found that 72.6% of their participants thought that kissing, hugging, and shaking hands are the means by which HIV/AIDS spread.[15] Table 2 indicated, more than 50% agreed that blood transfusion, intravenous drug use, and sharing infected needles are the major modes of transmission. Less than 35% agreed that HIV/AIDS being transmitted by hugging, tattooing, dirty hands, breastfeeding, kissing on cheeks, shaving at the barber shop, shaking hands with AIDS patients, homosexuality, and food and waterborne.

| Table 1: Demographic characteristics of the sample (n=938) |
|---------------------------------|-----------------|-----------------|
| Categories                      | Characteristics  | \( n \), Frequency ( % ) |
| Schools                         |                 |                 |
| Government school               |                 | 352 (37.5)      |
| Forest department school        |                 | 586 (62.5)      |
| Gender                         | Male            | 507 (54.1)      |
|                                | Female          | 431 (45.9)      |
| Age group (years)              | 13-15           | 676 (72.1)      |
|                                | 16-18           | 244 (26.0)      |
|                                | 19-21           | 18 (1.9)        |
| Education                      | VIII standard   | 192 (20.5)      |
|                                | IX standard     | 306 (32.6)      |
|                                | X standard      | 230 (24.5)      |
|                                | Plus one        | 110 (11.7)      |
|                                | Plus two        | 100 (10.7)      |
| Religion                       | Hindu           | 682 (72.7)      |
|                                | Christian       | 130 (13.9)      |
|                                | Muslim          | 126 (13.4)      |
| Family                         | Nuclear family  | 519 (55.3)      |
|                                | Joint family    | 419 (44.7)      |
| Currently residing             | With parents    | 521 (55.5)      |
|                                | With relatives  | 33 (3.5)        |
|                                | With grandparents | 34 (3.6)    |
|                                | Hostel          | 350 (37.3)      |
| Father’s education             | Illiterate      | 416 (44.3)      |
|                                | Literate        | 522 (55.7)      |
| Mother’s education             | Illiterate      | 555 (59.2)      |
|                                | Literate        | 383 (40.8)      |
A study by Mahat found that moderate level of knowledge among the students' regarding meaning, modes of transmission, and preventative and control measures to HIV/AIDS,[16] whereas this study, Table 3 indicated that >64.3% are having average knowledge and the rest of 17.4% are having poor knowledge about the mode of transmission.

Pearson’s Chi-square analysis shows the association between gender and various dimensions of knowledge about mode of transmission of HIV/AIDS's variables. In Table 4, the statement 2, 3, 5, 6, 7, 13, and 15 were (P<0.05) statistically significant association between gender and knowledge about mode of transmission of HIV/AIDS variables whereas, the statement 1, 4, 8, 9, 10, 11, 12, 14, and 16 (P>0.05) were statistically shows that there is a nonsignificant association between gender and the knowledge about the mode of transmission of HIV/AIDS variables.

Table 2: Knowledge variables about the mode of transmission of human immunodeficiency virus/acquired immune deficiency syndrome sample (n=938)

| Mode of Transmission of HIV/AIDS through | Label          | Gender                      | Overall, Frequency (%) |
|----------------------------------------|----------------|-----------------------------|------------------------|
|                                        | Male, Frequency (%) | Female, Frequency (%) |                          |
| Hugging                                | Disagreed       | 361 (71.2)                  | 289 (67.1)             | 650 (69.3) |
|                                        | Agreed          | 146 (28.8)                  | 142 (32.9)             | 288 (30.7) |
| Coughing                               | Disagreed       | 298 (58.8)                  | 189 (43.9)             | 487 (51.9) |
|                                        | Agreed          | 209 (41.2)                  | 242 (56.1)             | 451 (48.1) |
| Sneezing                               | Disagreed       | 317 (62.5)                  | 208 (48.3)             | 525 (56.0) |
|                                        | Agreed          | 190 (37.5)                  | 223 (51.7)             | 413 (44.0) |
| Tattooing                              | Disagreed       | 357 (70.4)                  | 302 (70.1)             | 659 (70.3) |
|                                        | Agreed          | 150 (29.6)                  | 129 (29.9)             | 279 (29.7) |
| Foodborne                              | Disagreed       | 372 (73.4)                  | 277 (64.3)             | 649 (69.2) |
|                                        | Agreed          | 135 (26.6)                  | 154 (35.7)             | 289 (30.8) |
| Waterborne                             | Disagreed       | 356 (70.2)                  | 241 (55.9)             | 597 (63.6) |
|                                        | Agreed          | 151 (29.8)                  | 190 (44.1)             | 341 (36.4) |
| Dirty hands                            | Disagreed       | 350 (69.0)                  | 224 (52.0)             | 574 (61.2) |
|                                        | Agreed          | 157 (31.0)                  | 207 (48.0)             | 364 (38.8) |
| Breast feeding                         | Disagreed       | 345 (68.0)                  | 272 (63.1)             | 617 (65.8) |
|                                        | Agreed          | 162 (32.0)                  | 159 (36.9)             | 321 (34.2) |
| Kissing on cheeks                      | Disagreed       | 363 (71.6)                  | 282 (65.4)             | 645 (68.8) |
|                                        | Agreed          | 144 (28.4)                  | 149 (34.6)             | 293 (31.2) |
| Treatment taken from dentist           | Disagreed       | 391 (77.1)                  | 329 (76.3)             | 720 (76.8) |
|                                        | Agreed          | 116 (22.9)                  | 102 (23.7)             | 218 (23.2) |
| Shaving at barber shop                 | Disagreed       | 325 (64.1)                  | 265 (61.5)             | 590 (62.9) |
|                                        | Agreed          | 182 (35.9)                  | 166 (38.5)             | 348 (37.1) |
| Blood transfusion                      | Disagreed       | 209 (41.2)                  | 152 (35.3)             | 361 (38.5) |
|                                        | Agreed          | 298 (58.8)                  | 279 (64.7)             | 577 (61.5) |
| Intravenous drug users                 | Disagreed       | 258 (50.9)                  | 171 (39.7)             | 429 (45.7) |
|                                        | Agreed          | 249 (49.1)                  | 260 (60.3)             | 509 (54.3) |
| Sharing injection needles              | Disagreed       | 302 (59.6)                  | 291 (67.5)             | 345 (36.8) |
|                                        | Agreed          | 366 (72.2)                  | 284 (65.9)             | 593 (63.2) |
| Shaking hands with AIDS patients       | Disagreed       | 366 (72.2)                  | 284 (65.9)             | 650 (69.3) |
|                                        | Agreed          | 141 (27.8)                  | 147 (34.1)             | 288 (30.7) |
| Homosexuality                          | Disagreed       | 351 (69.2)                  | 295 (68.4)             | 646 (68.9) |
|                                        | Agreed          | 156 (30.8)                  | 136 (31.6)             | 292 (31.1) |

HIV=Human immunodeficiency virus; AIDS=Acquired immune deficiency syndrome

One-way analysis of variance results revealed a significant difference between the age groups of the respondents (F = 11.026, P ≤ 0.05). The post hoc test also indicated that age groups between the 13–15 and 19–21 years have a significant difference [Table 6].

DISCUSSION

Students are conscious of HIV/AIDS through various
Table 3: Overall levels of knowledge about the mode of transmission of human immunodeficiency virus/acquired immune deficiency syndrome

| Gender | Overall knowledge about of the mode transmission of HIV/AIDS | Total, frequency (%) |
|--------|------------------------------------------------------------|----------------------|
|        | Poor, frequency (%) | Average, frequency (%) | Good, frequency (%) |
| Male   | 73 (14.4)          | 313 (61.7)            | 121 (23.9)          |
| Female | 90 (20.9)          | 290 (67.3)            | 51 (11.8)           |
| Total  | 163 (17.4)         | 603 (64.3)            | 172 (18.3)          |

Mean score=50.76; SD=8.726. SD=Standard deviation; HIV=Human immunodeficiency virus; AIDS=Acquired immune deficiency syndrome

Table 4: Association between knowledge about the mode of transmission of human immunodeficiency virus/acquired immune deficiency syndrome’s variables and gender

| Level of knowledge about the Mode of transmission HIV/AIDS | Gender (male and female) | Chi-square and Cramer’s V values |
|-----------------------------------------------------------|--------------------------|---------------------------------|
|                                                           |                          | \(\chi^2\) df, Cramer’s V       |
| 1 - Hugging                                               | 1.886***                 | 1 (NS)                          |
| 2 - Coughing                                              | 20.790*                  | 1 (S)                           |
| 3 - Sneezing                                              | 19.236*                  | 1 (S)                           |
| 4 - Tattooing                                             | 0.13***                  | 1 (NS)                          |
| 5 - Foodborne                                             | 9.057**                  | 1 (S)                           |
| 6 - Waterborne                                            | 20.590*                  | 1 (S)                           |
| 7 - Dirty hands                                           | 28.556*                  | 1 (S)                           |
| 8 - Breast feeding                                        | 2.524***                 | 1 (NS)                          |
| 9 - Kissing on cheeks                                     | 4.127***                 | 1 (NS)                          |
| 10 - Treatment at a dentist                              | 0.81***                  | 1 (NS)                          |
| 11 - Shaving at barber                                    | 0.684***                 | 1 (NS)                          |
| 12 - Blood transfusion                                    | 3.491***                 | 1 (NS)                          |
| 13 - Intravenous drug users                               | 11.801**                 | 1 (S)                           |
| 14 - Sharing injection needles                            | 6.334***                 | 1 (NS)                          |
| 15 - Shaking hands with AIDS patients                     | 4.340**                  | 1 (S)                           |
| 16 - Homosexuality                                       | 0.67***                  | 1 (NS)                          |

\(H_0=\) No association between the gender on the various dimensions of knowledge regarding the mode of transmission. ***\(p<0.05\); *\(p<0.05\) (significant at 5% level); **\(p<0.001\) (significant at 0.1%level). S=Significant; NS=Non-significant; HIV=Human immunodeficiency virus; AIDS=Acquired immune deficiency syndrome

Conclusion

In spite of various modalities of awareness programs, introduce through media, accurate knowledge, and awareness about transmission of HIV/AIDS is not established among the adolescent tribal students. Mindfulness program on HIV/AIDS should be need based and focused, and this will facilitate in helping the adolescents to eliminate the incorrect impression and stigmas. Adolescent period is a crucial period of transition, misinterpretation and improper recognition any issues, which in turn, brings in adversity and tragedy to their life. Awareness acquisition with correct information will help the adolescents to shape their life much more gainfully. The outcome requires a formal HIV/AIDS subject, incorporated into curriculum, where teachers get an opportunity to deliver the scientific information about HIV/AIDS.

Adequate knowledge eliminates experimental tendencies and removes the gap between right and wrong among the adolescents. Suggestion to inclusion of local social work students, public health disciplines, local communities, and the guidance of their class teachers, misconception about the mode of transmission of HIV/AIDS can be rectified.
Table 5: Association between overall general knowledge about the mode of transmission of human immunodeficiency virus/acquired immune deficiency syndrome variables and gender

| Gender | Overall general knowledge about the mode of transmission of HIV/AIDS | Total frequency (%) |
|--------|---------------------------------------------------------------|---------------------|
|        | Poor frequency (%) | Average frequency (%) | Good frequency (%) | χ²     |
| Male   | 73 (14.4)          | 313 (61.7)           | 121 (23.9)         | 507 (100.0) |
| Female | 90 (20.9)          | 290 (67.3)           | 51 (11.8)          | 431 (100.0) |
| Total  | 163 (17.4)         | 603 (64.3)           | 172 (18.3)         | 938 (100.0) |

H₀=There is no association between genders in overall knowledge about the mode of transmission of HIV/AIDS. HIV=Human immunodeficiency virus; AIDS=Acquired immune deficiency syndrome

Table 6: Analysis of variance-difference between the age groups of the respondents and overall various dimensions of knowledge about the mode of transmission of human immunodeficiency virus/acquired immune deficiency syndrome

| Age groups (yrs) | Mean | SD  | Source of Variance | SS    | Df | MS     | Statistical Inference |
|-----------------|------|-----|-------------------|-------|----|-------|-----------------------|
| 13-15           | 49.96| 8.526| Between Groups    | 1643.896| 2  | 821.948| F=11.026**            |
| 16-18           | 52.64| 9.010|                   |       |    |       |                       |
| 19-21           | 55.17| 7.294| Within Groups     | 69702.684| 935| 74.548|                       |

**Significant at 0.1% level (P<0.001). SS=Sum of Square; SD=Standard deviation; MS=Mean of square

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