Awareness about Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome (HIV/AIDS) among Paramedical Personnel in a Tertiary Care Hospital in Ranga Reddy District, Telangana

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Abstract

**Background:** HIV continues to be a major global public health issue, having claimed almost 33 million lives so far. However, with increasing access to effective HIV prevention, diagnosis, treatment and care, including for opportunistic infections, HIV infection has become a manageable chronic health condition, enabling people living with HIV to lead long and healthy lives. There were an estimated 38.0 million people living with HIV at the end of 2019.

**Aims & Objectives:** To assess the knowledge of HIV/AIDS among para medical staff.

**Materials & Methods:** The study was a hospital based cross-sectional study which was conducted in Malla Reddy Hospital, Suraram, Hyderabad. A total number of 109 subjects (nurses and lab technicians) were included in the study. All the participants were given a questionnaire and the filled questionnaires were collected on site.

**Results:** Out of 109 participants, majority of the study participants had good awareness about different modes of transmission of HIV. About 77% said it is through sexual route, 79.81% said it could be due to blood borne, 86% said from mother to child transmission and 87.15% said it is due to needle stick injury. Only 26% were aware that vaccine against HIV/AIDS is in the developmental stages.

**Conclusion:** Transmission of blood borne infections through needle stick injury is a harsh reality involving health care personnel. There is an urgent need to teach basic knowledge about HIV infection and service availability.

**Keywords:** HIV, Misconceptions, HIV, Transmission.

INTRODUCTION

Acquired Immune Deficiency Syndrome (AIDS) is a fatal illness caused by a retro virus known as the Human Immunodeficiency Virus which breaks down the body's immune system, leaving the victim vulnerable to a host of life threatening opportunistic infection, neurological disorders, or unusual malignancies.¹ Health care providers are the key components of any health care system. Patients take them as angels and consider them as redeemer for their health and life [1].

Medical professionals and other health care workers, by virtue of their profession, can get infection from patients, a contaminated environment and patient specimens either by direct contact or indirect contact. The risk of being infected with HIV through a needle stick or prick with inoculation to infected blood is approximately 0.25 to 0.3%, and is 0.05-0.3% following mucus membrane exposure. The hospital staff of nurses, technicians and the para medical support staff are directly involved in handling, transportation and disposal of biomedical waste [2].

The government of India is scaling up the care given to people living with HIV (PLHIV) in India rapidly with the progress in anti retroviral therapy and management of opportunistic infections [3]. Maintaining the highest level quality of life of PLHIV is possible mainly through the supportive care from the health care workers. But at the same time provision of care to the PLHIV raises the occupational concerns for all level of health care providers [4]. The accidental transmission of HIV infection to health workers during occupational exposure is the real danger today [5]. HIV was isolated from different body fluids like urine, semen, cerebrospinal fluid, blood, tears, amniotic fluid, saliva, breast milk, and vaginal secretions [6, 7]. It has been proved that blood is the major and the strongest source of infection of not only HIV but also other pathogens and is the major route of transmission in health care employees [8].
More than 90% of these infections are occurring in low-income countries. Needlestick injuries, the cause of 95% of the HIV occupational seroconversions, are preventable with practical, low-cost measures [9]. As para medical staff who are always in close contact in handling blood and blood products therefore to assess their knowledge about HIV/AIDS is must. Considering all the factors the present study was conducted with following objectives.

**OBJECTIVES**

1. To assess knowledge regarding modes of transmission, service availability and modes of prevention of HIV/AIDS among the paramedical staff (nurses and lab technicians) working in a tertiary care hospital.
2. To assess the relationship between years of experience and awareness.

**MATERIALS AND METHODS**

A cross-sectional study was conducted at Malla Reddy Hospital, Suraram, Hyderabad which is a tertiary health-care institution in Telangana (India), among two groups of paramedical staff (109) comprising laboratory technicians, and nursing staff. Anonymity was maintained within the study groups.

**Observations and Results**

**Table 1: Age & Sex Wise Distribution of Study Participants**

| Age (Years) | Males | Females | Total |
|-------------|-------|---------|-------|
| <20 yrs     | 1(0.91)| 2(1.83) | 3(2.74)|
| 20-30 yrs   | 22(20.18)| 64(58.71)| 86(78.89)|
| >30 yrs     | 14(12.8)| 6(5.50) | 20(18.3)|
| Total       | 37    | 72      | 109   |

Table 1 shows majority of the study participants were females accounting for 66% and males 34%. Majority of study participants were in the age group of 20-30 years (78.89%), followed by 18.3% in >30 years.

**Table 2: Residence Wise Distribution of Study Participants**

| Residence | Frequency | Percentage |
|-----------|-----------|------------|
| Urban     | 97        | 88.99      |
| Rural     | 12        | 11         |
| Total     | 109       | 100        |

Table 2 shows that majority of the study participants were from urban area (88.99%) and 11% were from rural area respectively.

**Table 3: Distribution of Study Participants with years of experience**

| Work Experience | Frequency | Percentage |
|-----------------|-----------|------------|
| <1 year         | 13        | 11.92      |
| 1-5 years       | 64        | 58.73      |
| >5 years        | 32        | 29.35      |
| Total           | 109       | 100        |

Table 3 shows that 58.71% were having work experience from 1-5 years. About 29.35% were having work experience of >5 years. Less than one year experience was seen in 11.92% of study participants.

**Ethical Consideration**

Approval of the Hospital research Ethics committee was taken before initiating the study.

The respondents were informed about the purpose of the study and were assured that their responses would be treated confidentially. Respondents were also informed that their participation was entirely voluntary and that they were free to decline to answer any question that made them feel uncomfortable. Written informed consent was obtained from all of the participants.

The questions were arranged in no specific order and included both positively and negatively framed questions to assess the knowledge, as well as their misperceptions, about HIV/AIDS. All the participants were given a questionnaire which was filled and returned on site.

**Statistical Analysis**

The questionnaires were reviewed and analysed by using MS EXCEL. Analysis was done using simple proportions and chi-square test was applied to assess the strength of association.
Table-4: Distribution of Study Participants with awareness regarding modes of transmission of HIV/AIDS

| Modes of transmission | Yes | No | Total |
|-----------------------|-----|----|-------|
| Sexual route          | 84(77) | 25(22.9) | 109 |
| Blood borne           | 87(79.82) | 22(20.18) | 109 |
| Mother to child       | 94(86.24) | 15(13.76) | 109 |
| Needle stick injury   | 95(87.15) | 14(12.85) | 109 |

Table-4 shows majority of the study participants had good awareness about different modes of transmission of HIV. About 77% said it is through sexual route, 79.81% said it could be due to blood borne, 86% said from mother to child transmission and 87.15% said it is due to needle stick injury.

Table-5: Distribution of Study Participants Awareness Regarding Misconceptions of Transmission of HIV/AIDS

| Misconceptions                             | Yes     | No     | Total |
|--------------------------------------------|---------|--------|-------|
| Transmission through mosquitoes            | 14(12.84) | 95(87.15) | 109 |
| Sharing same public facilities             | 99(90.82) | 10(9.17) | 109 |
| Sharing same tooth brushes                 | 44(40.36) | 65(59.63) | 109 |
| Sharing razors in case of intact skin      | 59(54.12) | 50(45.87) | 109 |

Table-5 shows misconceptions about transmission of HIV among study participants which shows that 12.84 % told it could be due to mosquitoes bite, 90.82% said could be because of Sharing same public facilities, 40.36% told it could be due to Sharing same tooth brushes and 54.12 % said it could be due to Sharing razors in case of intact skin.

Table-6: Association Between Work Experience And Modes Of Transmission Regarding HIV/AIDS

| Modes of transmission | Work experience | Chi-square value | P value |
|-----------------------|-----------------|------------------|---------|
|                       | <5 years | >5 years |                  |         |
| Sexual route          | 69       | 26      | 1.411             | 0.1177  |
| Blood borne           | 61       | 26      | 0.057             | 0.40    |
| Mother to child       | 69       | 25      | 1.63              | 0.100   |
| Needle stick injury   | 68       | 27      | 4.95              | 0.012   |

Table-6 shows there was statistical significant difference was observed in relationship with needle stick injury as one of the mode of transmission of HIV/AIDS.

Table-7: Association Between Work Experience And Misconceptions About HIV/AIDS Transmission

| Misconceptions regarding transmission | Work experience | <5 years(n=77) | >5 years(n=32) | Chi-square value | p-value |
|--------------------------------------|-----------------|---------------|---------------|------------------|--------|
| Transmission through mosquitoes      |                 | 67            | 28            | 1.63             | 0.100  |
| Transmission through sharing same public facilities | | 49            | 29            | 6.81             | 0.004  |
| Sharing same toothbrushes            |                 | 70            | 15            | 23.03            | 0.0001 |
| Sharing razors in case of intact skin|                 | 35            | 15            | 0.018            | 0.446  |

Table-7 shows their was a strong statistical significant difference was observed between years of experience and misconception about transmission of HIV/AIDS through Sharing same toothbrushes with p – value as 0.0001. Strong statistical significant difference was observed between years of experience and misconception about transmission of HIV/AIDS through sharing same public facilities with p –value 0.004.

Table-8: Awareness Regarding Service Centre Availability for HIV/AIDS Among Paramedical Staff

| Heard about ICTC/PPTCT | Frequency | Percentage |
|------------------------|-----------|------------|
| Yes                    | 67        | 61.46      |
| No                     | 27        | 24.77      |
| Don’t Know             | 15        | 13.76      |
| Total                  | 109       | 100        |

Table-8 shows awareness about service centre availability For HIV/AIDS study participants was good, near about 61.46% were knowing about the centre.

**DISCUSSION**

In the present study it was observed that majority of the study participants were females...
accounting for 66% and males 34%. Majority of study participants were in the age group of 20-30 years (78.89%), followed by 18.3% in >30 years. In another study done by Aswin Kumar et al., 58.3% were in the age group of >20 years [10]. Majority of the study participants were females (96.3%) which is similar to present study [10].

The findings of the present study shows that majority of the study participants were from urban area (88.99%) and 11% were from rural area respectively.

Present study findings revealed that 58.71% were having work experience from 1-5 years. About 29.35% were having work experience of >5 years. Less than one year experience was seen in 11.92% of study participants.

Majority of the study participants had good awareness about different modes of transmission of HIV. About 77% said it is through sexual route, 79.81% said it could be due to blood borne, 86% said from mother to child transmission and 87.15% said it is due to needle stick injury. In another study done by Aswin Kumar et al., it was observed that20.3% were aware that needle stick injury is one of the mode of transmission of HIV/AIDS [10].

Mother to child transmission awareness was observed in 50% of the participants [10], while in other studies, it was from of 65% to 95% [11, 12]. In one study awareness regarding sexual mode of transmission was observed in 45% of study participants which is less than the present study [13].

In present study misconceptions about transmission of HIV among study participants shows that 12.84 % told it could be due to mosquitoes bite, 90.82% said could be because of Sharing same public facilities, 40.36% told it could be due to Sharing same tooth brushes and 54.12 % said it could be due to Sharing razors in case of intact skin. In another study 90% of the study participants said sharing things and places can transmit HIV/AIDS [10].

In the present study only 26% were aware that vaccine against HIV/AIDS is in the developmental stages while in another study awareness about HIV vaccine in developmental stage was good (51%) [10].

CONCLUSION

Transmission of blood borne infections through needle stick injury is a harsh reality involving health care personnel. There is an urgent need to teach basic knowledge about HIV infection and service availability. Therefore regular training sessions should be conducted by the hospital authorities regarding HIV/AIDS modes of transmissions, regarding precautions to be taken and also on latest updates regarding HIV/AIDS. Training sessions should also be conducted on Post Exposure Prophylaxis too.

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