Status of socio-demographic and behavioral profile of younger and older HIV high risk groups in Chhattisgarh

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ABSTRACT

Background: The prevention of new infections in high-risk groups is a major thrust in National AIDS Control Program. There is enough evidence that many epidemiological and behavioral determinants which make High Risk Group vulnerable to HIV transmission. The most effective means of controlling the spread of HIV is through the implementation of Targeted Interventions (TIs) efforts by which services are catered to them. Furthermore, stigma and marginalization are often linked to this population, which may lead to difficulties while accessing social and health services (SHS) due to behavioral, cultural and language barriers or lack of knowledge of the system. So, finding the sociodemographic & behavioral profile can give a breakthrough in improving the quality of life of HIV high risk groups. Material and Methods: A cross sectional study was conducted during September to December 2019 in two districts (i.e., Raipur & Durg) among HRGs of Chhattisgarh. Training cum sensitization of survey team e.g., peer educators, outreach workers, counselors, project managers prior to the survey was done for data collection. Results: A Total of 3963 HRGs were registered with TI NGOs, 3418 (86.2%) were screened. The mean age of study participants was 27.69 ± 6.1. Compliance of participation was 86.2%. HRGs were observed to have malnutrition (BMI <18.5 &> 25.0). 7 cases of Pulmonary TB were found among IDUs. Prevalence of diabetes and Hypertension was 1.2% and 1.1% respectively. Substance abuse (i.e., for Alcohol and Tobacco) was significantly higher among IDUs and FSWs. Conclusion: This study reinforces the fact that for accessing High Risk Groups and retrieval of relevant information can best be obtained by their care givers i.e., TI NGOs personnel. Also understanding the sociodemographic and behavioral profiles are central to designing targeted HIV prevention interventions for them.

Keywords: Behavioral profile, high risk groups, HIV transmission, targeted intervention

Background

The 2019 national level data shows estimated 23.49 lakh (17.98 lakh – 30.98 lakh) people living with HIV (PLHIV), with an adult (15–49 years) HIV prevalence of 0.22% (0.17– 0.29%).¹ The most vulnerable population to HIV/AIDS being Female Sex Workers (FSWs), Men who have Sex with Men (MSM) and Transgenders (TGs) and Injecting Drug Users (IDUs).² The former category is fairly simple to identify as it consists of marginalized sections of the population that often take part in sexual risk behavior, e.g., commercial sex workers (CSWs) or injecting drug users.³ There is an evidence that many epidemiological and behavioral determinants which make High Risk Group vulnerable to HIV transmission among core groups can lead to increase burden of disease among them. The prevention of new infections in high-risk groups is a major thrust in National AIDS Control Program. The most effective means of controlling the spread of HIV in India is through

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Reducing the stigma associated with the disease and HIV clinics. Adolescent patients may prefer to receive prevention information from their primary care physician rather than from parents, teachers, or friends. Furthermore, stigma and marginalization are often linked to this population, which may lead to difficulties while accessing social and health services (SHS) due to behavioral, cultural and language barriers or lack of knowledge of the system. By identifying possible barriers to access HIV High Risk Group will help to guide public health policies and specific prevention and health promotion program for this group. This study is based on the data from cross-sectional survey to find out the social and behavioral profile determining the vulnerability among High-risk groups.

### Material and Methods

A cross-sectional study was conducted during September to December 2019 in two districts (i.e., Raipur & Durg) of the implementation of Targeted Interventions (TIs) through Non-Governmental Organizations (NGOs) who caters services to them by Drop-in Centers (DICs). These TI NGOs caters interventions which includes; development and dissemination of behavior change messages, promotion of condoms and other barrier methods, accessible sexual health services, use of informal contacts, key informants, and “leaders” to access the population, peer health promotion and education, outreach activities, condom social marketing and distribution, and income generating activities among them. Due to the hazardous nature of occupation among HIV High Risk Group has a variety of concerns which includes; contracting sexually transmitted diseases (STDs), Tuberculosis, Asthma, Diabetes mellitus, High blood pressure, Drug abuse, Alcohol use and many others.

### Table 1: NGO and typology wise compliance status of study participants among HRGs

| Name of TI NGO | Typology   | Total registered | Total Participants screened | % Compliance |
|----------------|------------|------------------|----------------------------|--------------|
| New Path Education Society Durg | FSW | 1244 | 1048 | 84.24 |
| Vikas Anusandhan Sansthan Durg | MSM/TG | 465 | 226 | 48.60 |
| Pankhudi and OST Centre Bhilai | IDU | 314 | 295 | 93.95 |
| Chetna Child and Women welfare Society Raipur | FSW | 1312 | 1241 | 94.59 |
| Arshil Shikshana Prashikshan welfare Society | FSW | 628 | 608 | 96.82 |
| **Total** | | **3963** | **3418** | **86.20** |

### Table 2: Socio-demographic profile of HIV high risk groups under study

| Variable         | FSW          | High Risk Group | IDU          | Chi Square & P |
|------------------|--------------|-----------------|--------------|----------------|
|                  | <25 Years    | >25 Years       |              |                |
| Age              | 975 (33.7%)  | 137 (60.6%)     | 69 (23.4%)   | χ²=85.193 P=0.000 (S) |
| Marital Status   | 2619 (90.4%) | 109 (48.2%)     | 162 (54.9%)  |                |
| Divorced         | 47 (1.6%)    | 0 (0.0%)        | 4 (1.4%)     | χ²=85.193 P=0.000 (S) |
| Married          | 1922 (66.3%) | 89 (39.4%)      | 226 (76.6%)  |                |
| Separated        | 2 (0.0%)     | 0 (0.0%)        | 0 (0.0%)     |                |
| Unmarried        | 191 (6.6%)   | 116 (51.3%)     | 124 (42.0%)  |                |
| Widow            | 31 (1.1%)    | 0 (0.0%)        | 3 (1.0%)     |                |
| Living Status    | 1240 (42.8%) | 58 (25.7%)      | 38 (12.9%)   | χ²=118.992 P=0.000 (S) |
| Homeless         | 1657 (57.2%) | 168 (74.3%)     | 257 (87.1%)  |                |
| Own Home         | 2 (0.0%)     | 0 (0.0%)        | 51 (17.3%)   |                |
| Business         | 598 (20.6%)  | 53 (23.5%)      | 66 (22.4%)   | χ²=1487.80 P=0.000 (S) |
| Farmer           | 23 (0.8%)    | 1 (0.4%)        | 2 (0.7%)     |                |
| Farming Labour   | 170 (5.9%)   | 0 (0.0%)        | 4 (1.4%)     |                |
| House Worker     | 531 (8.3%)   | 0 (0.0%)        | 1 (0.2%)     |                |
| Non Farming Labor| 1017 (35.1%) | 9 (4.0%)        | 56 (19.0%)   |                |
| Other            | 2 (0.001%)   | 0 (0.0%)        | 51 (17.3%)   |                |
| Employed         | 534 (18.4%)  | 94 (40.3%)      | 88 (29.8%)   |                |
| Student          | 6 (0.2%)     | 45 (19.9%)      | 4 (1.4%)     |                |
| Unemployed       | 16 (0.6%)    | 24 (10.6%)      | 23 (7.8%)    |                |
| BPL Status       | 791 (27.30)  | 64 (61.00)      | 157 (53.20)  | χ²=131.208 P=0.000 (S) |
| Don't belong to BPL | 2106 (72.70) | 41 (39.00)      | 138 (46.80)  |                |
| **Total**        | 2897         | 226             | 295          |                |
Chhattisgarh in Dept. of Community Medicine Pt. JNM Medical College Raipur. Study Participants were HIV High Risk Groups (i.e., Commercial Sex Workers, MSMs/TGs & Intravenous Drug Users). Inclusion criteria: All the High‑Risk Groups (i.e., Commercial Sex Workers, MSMs, TGs & Intravenous Drug Users) registered at the selected TI NGO. Exclusion Criteria: High Risk Groups already diagnosed of HIV infection (PLHIVs). In the study area there were 4 Targeted Intervention projects running through NGOs. Survey teams were formed for data collection. Training cum sensitization of survey team e.g., peer educators, outreach workers, counselors, project managers prior to the survey was done. In this training, peer educators, outreach workers, counselors, project managers were trained for clinicoepidemiological and behavioral profile (i.e., sexually transmitted diseases (STDs), Tuberculosis, asthma, diabetes mellitus, high blood pressure/hypertension, substance abuse, alcohol etc.) as determinants of health status of study population. Written informed consent was obtained before data collection. Data were also verified at field level for its correctness and completeness by the Principal Investigator and Program Officer Technical Support Unit and program managers of respective TI NGOs under study.

Results

A Total of 3963 HRGs were registered with TI NGOs, 3418 (86.2%) were screened. All the TI NGOs except one have shown more than 50% compliance of study participants among HRGs [Table 1]. The mean age of study participants was 27.69 ± 6.1. Compliance of participation in the study was maximum (91%) in FSW with lowest (48.6%) in MSM/TGs. Older adults (Age >25 years) were significantly more as compared to their counterpart (i.e., younger <25 years) who took part in the study. 84.6% study participants were married, 60.9% belonged to below poverty line and 39.1% were homeless (i.e., not living in their own home). Significant association was found between different HRGs with age, marital status, living status, occupational status and BPL status [Table 2].

56.6% HRGs were observed to have malnutrition (BMI <18.5 & >25.0). Malnutrition was significantly high among older adults in MSM/TGs and IDUs [Table 3]. Out of all HRGs screened (3418), 81 (2.4%) were found presumptive pulmonary TB, 7 cases of Pulmonary TB were found (All from IDUs). Among IDUs out of all presumptive cases 50% were suffering from pulmonary TB (2 new + 5 previously treated). Prevalence of diabetes and Hypertension was observed in 1.2% and 1.1% respectively but significantly high proportions of HRGs didn't know about their status about Diabetes mellitus (63.37%) and Hypertension (66.58%) [Table 3]. Association was established among different HRGs with associated comorbidities like BMI, Diabetes, Hypertension and Pulmonary TB [Table 4]. Substance abuse (i.e., for Alcohol and Tobacco) was significantly higher among IDUs and FSWs. Alcohol use was significantly more common among young adults among all HRGs, but
Tobacco abuse was significantly more among IDUs (68.6%) in older adults and addiction for the same was significantly more common in FSWs and IDUs [Table 5]. Overall tobacco use was observed in 36.1% HRGs, of them 5.3% were using both smoke and smokeless form of tobacco whereas 62% were addicted (consuming daily) for the same. Also overall alcohol use was observed in 42.2% HRGs and whereas 7.7% were addicted (Consuming daily) for the same. [Table 6]

**Discussion**

Out of all 3963 HRGs, the compliance rate was observed among study subject was 86.2%, the same was little low (70%) in a study done in Bolivian HRGs.[7] The malnutrition has been linked with infectious diseases and might be act as predisposing risk factor for vicious cycle of malnutrition and infection.[8] current study reveals 56.6% might be in risk of slipping into vicious cycle. The overall prevalence of positive TSTs was 28% in HIV-negative participants.[9] but in a current study out of all presumptive case, 50% were active TB disease. HIV transmission in India is primarily heterosexual and there is a concentrated HIV epidemic among female sex workers (FSWs) as HRGs. Alcohol consumption and its consequences including failure to use condoms renders them to slip into risk of getting Sexually Transmitted Infections (STIs) and may contribute to sexual risk taking and ultimately to the spread of HIV.[10‑13] The present study also depicts that alcohol consumption was significantly more common in HRGs among young adults might be in risk of acquisition of HIV/STIs. This study highlights that significantly high proportions of HRGs didn’t know about their status about Diabetes mellitus and Hypertension might be due to lack of access to routine health care service or may be due to poor health seeking behavior similar observations made in multicentric study done by White K, et al. as there is an immense need to overcome cultural and language difficulties, or other people who have difficulties to access public health services.[14] In this study, the consumption of alcohol and tobacco is very high. Similar results were also shown in the Xu JF, et al.[15] in Yunnan & Beijing Province, Sinha, et al.[16] in Africa & Rongkavilit, et al.[17] in United States, where 33.8%, 25% & 21.8% were alcohol users.

### Table 4: Distribution pattern of co-morbidity among HIV high risk groups under study

| Variable                  | FSW (2897) | MSM/TG (226) | IDU (295) | Chi Square & P |
|---------------------------|------------|--------------|-----------|----------------|
| BMI                       |            |              |           |                |
| 18.5-25.0                 | 1525 (52.6%) | 114 (50.4%)  | 128 (43.4%) | \(\chi^2=9.328\) |
| <18.5 & >25.0             | 1372 (47.4%) | 112 (49.6%)  | 167 (56.6%) | \(P=0.009\) (S) |
| Status of Diabetes        |            |              |           |                |
| Yes                       | 32 (1.1%)  | 0 (0.0%)     | 10 (3.4%)  | \(\chi^2=398.355\) |
| No                        | 825 (28.5%) | 189 (83.6%)  | 183 (62.0%) | \(P=0.000\) (S) |
| Don’t Know                 | 2040 (70.4%) | 37 (16.4%)   | 102 (34.6%) |                |
| Status of Hypertension    |            |              |           |                |
| Hypertensive              | 25 (0.9%)  | 3 (1.3%)     | 10 (3.4%)  | \(\chi^2=295.98\) |
| Non Hypertensive          | 774 (26.7%) | 143 (63.3%)  | 187 (63.4%) | \(P=0.000\) (S) |
| Don’t Know                 | 2098 (72.4%) | 80 (35.4%)   | 98 (33.2%)  |                |
| Pulmonary Tuberculosis    |            |              |           |                |
| Presumptive cases         | 55 (1.89)  | 12 (5.30)    | 14 (4.7)   | \(\chi^2=43.58\) |
| No signs and Symptoms     | 2842 (98.11) | 214 (94.70)  | 281 (95.3) | \(P=0.000\) (S) |
| Presumptive cases (Confirm as active disease) | 55 (0) | 12 (0) | 14 (7) | NA |

### Table 5: Distribution substance abuse and its addiction among HIV high risk groups under study

| Variable                  | FSW         | MSM/TG       | IDU         | Chi Square & P |
|---------------------------|-------------|--------------|-------------|----------------|
| Tobacco                   |             |              |             |                |
| Not Using                 | 1892 (65.3%)| 195 (86.3%)  | 97 (32.9%)  | \(\chi^2=174.615\) |
| Using                     | 1005 (34.7%)| 31 (13.7%)   | 198 (67.1%) | \(P=0.000\) (S) |
| Alcohol                   |             |              |             |                |
| Not Using                 | 1622 (56.0%)| 197 (87.2%)  | 157 (53.2%) | \(\chi^2=86.352\) |
| Using                     | 1275 (44.0%)| 29 (12.8%)   | 138 (46.8%) | \(P=0.000\) (S) |
| Total                     | 2897        | 226          | 295         |                |
| Tobacco Addiction (n=1234) |             |              |             |                |
| Addiction present (daily use) | 618 (61.49) | 9 (29.0)    | 138 (69.70) | \(\chi^2=19.38\) |
| Addiction not present     | 387 (38.51) | 22 (71.0)   | 60 (31.30)  | \(P=0.000\) (S) |
| Alcohol Addiction (n=1449) |             |              |             |                |
| Addiction present (daily use) | 90 (7.05)   | 7 (19.44)   | 14 (10.14)  | \(\chi^2=21.22\) |
| Addiction not present     | 1185 (92.95) | 29 (80.56)  | 124 (89.86) | \(P=0.000\) (S) |
Conclusion

This study reinforces the fact that for accessing High Risk Groups and their relevant information can best be obtained by their care givers i.e., TI NGOs personnel. This population is known to have poor health seeking behavior and living in compromised socio-cultural environment and hence facing difficulties to access public health services. Program implementers should strengthen the periodic health care services by engaging their care provider for better implementation of HIV/STI prevention activities among HRGs. Access to the public health system must continue to be provided for all HRGS by assuring confidentiality. For most people, the primary care sphere is the appropriate level for palliative and terminal care. There is also a role for primary care physicians in the psychosocial management of people with HIV/AIDS in supporting those close to the patient, and in educating the community in general about the social parameters of HIV/AIDS.

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Conflicts of interest

There are no conflicts of interest.

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