सत्यमेव जयते

RESEARCH COMPENDIUM

VOLUME III

FROM RESEARCH STUDIES UNDERTAKEN BY STATE AIDS CONTROL SOCIETIES IN FY 2023-2024

NACO

National AIDS Control Organisation

India's response to HIV & Sexually Transmitted Infections

Ministry of Health & Family Welfare, Government of India

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आज़ादी का अमृत महोत्सव

राष्ट्रीय एड्स नियंत्रण संगठन
स्वास्थ्य और परिवार कल्याण मंत्रालय
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FOREWORD

India's success in significantly reversing the spread of the HIV epidemic is not just a triumph of the programme, but a testament to National AIDS Control Organisation's steadfast commitment to a data-driven and evidence-based approach. The National AIDS & STD Control Programme (NACP) has embedded research and evaluation within the strategic information core framework, which has ensured that programmematic interventions remain effective and responsive to the nation's evolving public health needs.

Conducting operational research and evaluation studies under NACP is crucial for identifying programme implementation gaps, understanding community needs and optimising service delivery through localised solutions derived from evidence. To maintain this dynamic responsiveness towards the HIV epidemic, NACP established the Network of Indian Institutions for HIV/AIDS Research (NIIHAR). This network brings together leading public health institutes from across the country to conduct vital epidemiological, socio-behavioural, operational research along with programme evaluations.

The National AIDS Control Organisation (NACO) actively compiles key findings and programmatic recommendations from the operational studies, projects and innovations. This process builds a concrete evidence base to increase the expanse of programmematic learnings and facilitates mid-course corrections for the existing interventions.

Over the years, the research compendium has become a vital technical document for disseminating key findings, fostering knowledge sharing, enabling data-driven decision-making by policymakers and programme managers for formulation in India's HIV/AIDS response. This compilation is a reflection of NACO's responsibility towards knowledge-accessibility and community-centric applied science for people infected and affected by HIV.

The Research Compendium III includes studies conducted by research institutes in financial year 2023-2024. This document contains findings on aspects of stigma and discrimination among People Living with HIV and key populations, exposures like drug use, co-morbidities of STI/MI that impact service uptake and programmematic challenges related to linkage loss, adherence to treatment, counselling quality.

This will be an invaluable resource for scientific communities, policymakers, programme managers and field staff who strive daily to improve the lives of People Living with HIV and marginalised populations.

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PREFACE

The fifth phase of National AIDS Control Programme (NACP) focuses on evidence-driven approach for optimum HIV testing, linkage and treatment services to the affected population group through implementation of initiatives demonstrating its commitment towards improving the lives of people living with HIV in India.

Research and evaluation, strategic information under NACP aims at undertaking operational research studies at national and state-level through a consortium of national and regional institutes. The national and state-specific data on HIV/AIDS and STI/RTI is considered to identify priority areas for evidence generation through primary research. Programmematic research is undertaken to feed into and translate into programmematic actions in order to bridge the gaps in implementation of existing strategies.

The Research Compendium is a compilation from various studies on HIV/AIDS for largerdissemination of research-based evidence for programmematic implementation. This is the third consecutive year of releasing the Research Compendium, which contains significant findings and recommendations from operational research studies conducted during FY 2023–2024.

National AIDS Control Organisation (NACO) trusts that this consolidated evidence-based compendium will be beneficial for the policymakers, healthcare workers at NACP facilities, and programme managers. The dissemination of this compendium at a broad scale will undoubtedly strengthen India's efforts towards ending HIV/AIDS as a public health threat by the year 2030.

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MESSAGE

Through the National AIDS and STD Control Programme (NACP), NACO provides leadership in prevention and control of Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS), and Sexually Transmitted Diseases (STD) in India. It focuses on delivery of a comprehensive package of services in an ecosystem free of stigma and discrimination. Research & evaluation is a vital component of Strategic Information under NACP which focuses on evidence generation through primary research studies covering operational and evaluation research for information-driven planning, implementation monitoring and mid-course corrections.

The research activities under Strategic Information focus on ensuring translation of research outputs into programmematic action and policy formulation. It envisions to generate robust scientific evidence customised to local context and settings for feasibility and learning before introduction and scale-up in the programme. It also attempts to bring global and local evidence on newer approaches and strategies in prevention and control of HIV/AIDS. The focus lies on conducting time-bound operations, implementation and evaluation studies with a multi-centric approach and evolve a strong mechanism to use the research outcomes for programmematic purposes. Further, dissemination of the key findings and recommendations is also a mandate of the research & evaluation component.

The Research Compendium acts as a repository of top-line findings and recommendations from diverse HIV/AIDS studies, projects and innovations conducted at state-level through research institutes in collaboration with State AIDS Control Societies and commissioned by Strategic Information, NACO. The compilation of key findings from the studies of 2023–2024 may be used for developing programmematic interventions and strategies by policy makers and stakeholders for the benefit of people living with HIV/AIDS and high-risk population groups in India.

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ACKNOWLEDGEMENT

The National AIDS & STD Control Programme (NACP) shapes its policies and initiatives on empirical data to effectively combat the issues related to HIV/AIDS among the affected groups. The Programme adopts a holistic approach in research and evaluation, covering socio-behavioural, operational, and clinical studies, ensuring an in-depth understanding of the HIV epidemic and its impacts.

The NACP is strongly committed to consolidate and share research findings and insights with the programme divisions for facilitating evidence-based decisions. This data-driven approach strengthens the programme, promotes awareness and fosters partnership in the collective fight against HIV/AIDS.

The Research & Evaluation component of Strategic Information, NACO, undertook the task of compiling and summarising prominent findings and programmematic recommendations from 53 operational research studies conducted by state-level institutes in collaboration with the State AIDS Control Societies between the year 2023 and 2024, with financial support from the National AIDS Control Organisation (NACO). This initiative is focused on preparing a comprehensive repository of state-specific evidence containing information on a wide array of programme priorities.

It is vital to recognise that the procedure of generating evidence through operational and implementation research requires collaborations with subject matter experts, institutes, state and national level stakeholders. NACO extends its profound appreciation to all State AIDS Control Societies (SACS), researchers, scientists, programme managers, and colleagues whose valuable inputs have strengthened the research activities under NACP. NACO also acknowledges the technical support provided by the members of the Research Abstract Group—Dr. Ravindra Rao (AIIMS, New Delhi), Dr. Nilesh Gawde (TISS, Mumbai), Dr. Tarun Bhatnagar (ICMR-NIE, Chennai), Dr. Bhawna Rao (Deputy Director, NACO), Dr. Saiprasad Bhavsar (Deputy Director, NACO), Dr. Rahul Biswas (West Bengal SACS), Mr. Vinay Aghinothri (Himachal Pradesh SACS), Ms. Sulaksha Balve (Goa SACS), Mr. Ranjanjyoti Deka (Assam SACS) and Ms. Ragi Ravi (Kerala SACS).

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The role of Strategic Information team at NACO—Ms. Vinita Verma, Mr. Rajiv Ranjan Tiwari, Dr. NupurMahajan, Dr. Nikhil Patil, Mr. Ganesh Kumar and Dr. Girija Thakur—is appreciated. Additionally, support provided by Ms. Neha Kapoor and Dr. Padum Narayan Mishra is also acknowledged. Special thanks to the IEC division, NACO for facilitating the design and printing of the Research Compendium for studies conducted during financial year 2023-2024.

This unwavering commitment of NACO to generate and disseminate local level and national level evidence for decision-making and policy development is a benchmark for other public health programmes.

Sunny

(Dr. Sunny Swarnkar)

CONTENTS

LIST OF ABBREVIATIONS

ACEs	Adverse Childhood Experiences
AEP	Adolescence Education Programme
AIDS	Acquired Immuno-Deficiency Syndrome
ANC	Antenatal Clinics
AST	Antifungal Susceptibility Testing
ART	Anti-Retroviral Treatment
ARTC	Anti-Retroviral Treatment Centre
BCC	Behaviour Change Communication
CBO	Community-Based Organisation
CLW	Community Level Workers
CSC	Care Support Centres
DAPCU	District AIDS Prevention and Control Unit
FGD	Focused Group Discussion
FIDU	Female Injecting Drug Users
FSW	Female Sex Worker
HIV	Human Immunodeficiency Virus
HIVST	Human Immunodeficiency Virus Self-Testing
HRG	High Risk Group
HSB	Health-Seeking Behaviour
ICTC	Integrated Counselling & Testing Center
IDI	In-Depth Interview
IDU	Injected Drug User
IEC	Information, Education and Communication
IEC	Institutional Ethics Committee
KAP	Knowledge, Attitude, Practice
KP	Key Population
KGMU	King George's Medical University
KIIs	Key Informant Interviews
KYS	Know Your Status
LFU	Loss to Follow-Up
MSM	Men who have Sex with Men
NACO	National AIDS Control Organisation
NACP	National AIDS Control Programme
NGO	Non-Government Organisation
NFHS	National Family Health Survey
ORW	Out-Reach Worker
OST	Opioid Substitution Therapy
PLHIV	People Living with HIV

PPP	Public Private Partnership
PPTCT	Prevention of Parent to Child Transmission
PrEP	Pre-Exposure Prophylaxis
PWID	People Who Inject Drugs
QoL	Quality of Life
RRC	Red Ribbon Club
RSP	Regular Sexual Partner
SACS	State AIDS Control Society
SCERT	State Council for Educational Research and Training
SCM	Syndromic Case Management
SDG	Sustainable Developmental Goal
S&D	Stigma and Discrimination
SHSRC-K	State Health Systems Resource Centre-Kerala
SPS	Social Protection Schemes
STI	Sexually Transmitted Infection
TG	Transgender
TI	Targeted Intervention
TLD	Tenofovir, Lamivudine, Dolutegravir
VA	Verbal Autopsy
VC	Vaginal Candidiasis
VF	Virological Failure
WHO	World Health Organization
WLHIV	Women Living with HIV

OVERVIEW

India's response to the HIV/AIDS epidemic is anchored in a strong evidence-based approach that guides policy formulation, programme planning, and resource allocation. Over the last three decades, the National AIDS Control Programme (NACP) has strengthened its Strategic Information systems, evolving from national-level planning to a decentralised model that includes state, district, and sub-district level decision-making. This has enabled the programme to focus interventions where they are needed most, including newly emerging hotspots and priority populations.

Research & Evaluation is a critical pillar of Strategic Information under NACP. It encompasses epidemiological, social, behavioural, clinical, and operational research-each generating insights that inform programme strengthening. The National AIDS Control Organisation (NACO) leads this agenda with a clear mandate to serve as the nodal coordinating body for HIV/AIDS research in India. To support this vision, NACO:

- Develops guidelines, processes, and ethical norms for research
- Strengthens partnerships with national academic and research institutions
- Builds research capacities within programme teams
- Ensures evidence is translated into programme actions and policy decisions

Each year, NACO and State AIDS Control Societies (SACS) jointly identify research priorities through a structured and consultative process involving programme managers, technical experts, community representatives, and development partners. Research proposals undergo technical and ethical review, and studies are carried out through a multi-institutional network of epidemiologists, biostatisticians, scientists, and public health experts.

The research undertaken in FY 2023-24 continued to support improvement of service delivery across prevention, testing, treatment, and care. Insights generated helped identify gaps in service utilisation, challenges related to linkage and adherence, and barriers affecting key and vulnerable populations. The evidence contributed to strengthening targeted interventions and further accelerating progress toward India's commitment to end AIDS as a public health threat by 2030.

To disseminate the knowledge generated, NACO is publishing a Research Compendium Vol-III (FY 2023-24) featuring key findings and programmematic recommendations. The Research Compendium has around 53 abstracts from primary research undertaken at SACS level. This compendium serves as an important knowledge resource for policymakers, programme managers, researchers, civil society, and communities reinforcing NACO's commitment to converting evidence into action.

INFORMATION, EDUCATION, COMMUNICATION AND YOUTH

Assessment of awareness levels and associated factors among youth of Red Ribbon Clubs in colleges of Chandigarh – A mixed method study

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Introduction and rationale

HIV/AIDS continues to be a major public health challenge globally and in India, with youth (15–29 years) being among the most vulnerable groups due to biological, social, and behavioural factors. According to WHO, 1.3 million people acquired HIV in 2023 (1), while NACO reports show India's adult HIV prevalence at 0.20% (2). Chandigarh has a prevalence of 0.26%, higher than the national average, and 2,596 people living with HIV (3). Young people are at risk because of inadequate awareness, lack of life-skills education, peer pressure, and stigma associated with HIV (4, 5).

The Government of India initiated the Red Ribbon Club (RRC) programme under the National AIDS Control Programme (NACP) to address the vulnerabilities among young people at risk, aiming to enhance awareness, promote voluntary blood donation, and encourage safe practices among college-going youth (6). However, little is known about the actual awareness levels of RRC members, the challenges in implementing RRC activities, and their impact on behaviour change. This knowledge gap necessitates systematic research. Chandigarh, with its high literacy rate and diverse youth population, provides an ideal setting for such evaluation. This study assessed awareness levels, attitudes, and associated factors among RRC youth, and explored perceptions and barriers through a mixed-method approach to generate evidence for strengthening RRCs.

Objectives

- To assess the awareness levels (including their knowledge, attitudes and behaviours) regarding HIV/AIDS among youth participating in Red Ribbon Clubs
- To identify factors influencing the awareness levels among RRC participants
- To suggest recommendations for strengthening HIV/AIDS awareness among youth through RRCs

Methodology

This was a cross-sectional mixed-methods study conducted among youth of Red Ribbon Clubs in colleges of Chandigarh. Out of 20 NACO-funded RRC colleges (6), six colleges (three women's and three co-educational) were randomly selected. A total of 400 undergraduate students aged ≥18 years, who were active RRC members, were recruited using simple random sampling from the selected colleges.

Quantitative data was collected using a structured, pre-tested questionnaire adapted from NACO's Behavioural Surveillance Survey (BSS) 2006 (7), covering socio-demographics, awareness, attitudes, and risk behaviours. Self-administered Google Forms were used for data collection. To triangulate the survey findings, qualitative data was also collected through 12 in-depth interviews (IDIs) with RRC leaders and teachers, and 6 focus group discussions (FGDs) with RRC members until thematic saturation.

Quantitative data entry was done in MS Excel and analysed using SPSS v.29. Descriptive statistics (frequencies, percentages) and chi-square/Fisher's exact tests were used to assess associations between awareness and

socio-demographic factors. Significance was set at $p<0.05$. Qualitative data were audio-recorded, transcribed, translated, and analysed using MAXQDA for thematic coding. Verbatims were included to capture participants' experiences, motivations, and barriers in awareness building.

Ethical approval was obtained from the Institutional Ethics Committee, PGIMER, Chandigarh. Informed consent was taken from all participants. Confidentiality and anonymity were strictly maintained.

Findings

Out of 400 participants, 78.5% were female, and majority (58%) were aged 18–19 years. Most (82%) were urban residents and from upper middle-class families (70.8%). About 64% were new members (<6 months) of RRCs.

Nearly all participants knew HIV spreads through sexual contact (96.8%) and sharing needles (96.8%). However, gaps existed in knowledge of mother-to-child transmission (pregnancy 76.3%, breastfeeding 64.3%), and only 29% had heard of PPTCT programmes. Awareness about local HIV testing facilities (56%) and ICTCs (29%) was low. Misconceptions persisted: 50.2% believed HIV spreads via mosquito bites. While 80.8% would accept an HIV-positive family member, 46.5% were unwilling to share food with PLHIV, reflecting stigma. Only 61% believed the community would allow PLHIV to live locally. Only 2.5% admitted to risky behaviours (unprotected sex, needle sharing). Opinion on participation in RRC activities varied in the study. While 88% respondents considered activities effective, only 40.5% had received formal training, and just 21.3% had donated blood though the RRC programme.

Table 1 Awareness, attitude and risk behaviour among RRC participants in Chandigarh (N=400)

S.N.	Questions	Responses n (%)		
	Prevention	Yes	No	Don't Know
1.	Can HIV/AIDS be prevented?	326 (81.5)	73 (18.3)	1 (0.3)
2.	Can people get HIV/AIDS through sexual contact?	387 (96.8)	12 (3.0)	1 (0.3)
3.	Can a person get HIV/AIDS from a mosquito bite if the mosquito has drawn blood from an HIV/AIDS infected person?	201 (50.2)	154 (38.5)	45(11.2)
4.	Can a person get HIV/AIDS by getting injections with a needle that has been already used by someone else who is infected?	387 (96.8)	8 (2.0)	5 (1.3)
5.	Can people get HIV from an infected blood donor?	371 (92.8)	16 (4.0)	13 (3.3)
6.	Can a pregnant woman infected with HIV or AIDS transmit the virus to her unborn child?	305 (76.3)	51 (12.8)	44 (11.0)
7.	Can a woman with HIV or AIDS transmit the virus to her newborn child through breast feeding?	257 (64.3)	99 (24.8)	44 (11.0)
8.	Have you ever heard about PPTCT (Prevention of Parent to Child Transmission of HIV/AIDS)?	116 (29.0)	284 (71.0)	-

9.	For those who need to get a condom, do you think they are easily available?	338 (84.5)	24 (6.0)	38 (9.5)
10.	Do you agree that a person suffering from STI has a high chance of HIV/AIDS exposure?	284 (71.0)	19 (4.8)	97 (24.3)
Testing				
11.	Are you aware of any facility in your area where you can get tested for HIV/AIDS?	224 (56.0)	176 (44.0)	-
12.	Have you ever heard of ICTC? (Integrated Counselling and Testing Centre – where one can get information on HIV/AIDS and get tested for HIV/AIDS)	116 (29.0)	284 (71.0)	-
Treatment				
13.	Do we have any medicine that can cure a HIV/AIDS patient?	96 (24.0)	242 (60.5)	62 (15.5)
Attitude				
14.	Would you share food with an HIV/AIDS patient?	214 (53.5)	186 (46.5)	-
15.	In case any member of your family suffers from HIV/AIDS would he/she be accepted in the family or be isolated (prohibit contact with other HH members)?	323 (80.8)	77 (19.3)	-
16.	Do you think that your community will allow HIV/AIDS patients to stay in the village / locality?	244 (61.0)	99 (24.8)	57 (14.2)
Risk Behaviour				
17.	Have you ever engaged in any behaviours that may increase the risk of HIV transmission? (e.g., unprotected sex, sharing needles)	10 (2.5)	390 (97.5)	-

Awareness and attitudes were significantly associated with gender, year of study, stream, area of settlement, duration of RRC membership, and socioeconomic class. Longer membership was positively linked to PPTCT awareness and stigma reduction.

Qualitative findings gave insights into the factors influencing awareness levels and engagement of people in RRCs. It also gave a glance on the barriers in participation among youth and further, recommendations to increase participation suggested by youth were also captured. It was observed that the participants mainly joined the RRC to address the pressing issue of HIV/AIDS awareness.

Motivations to join the RRC was arising based on one's own interest, influenced from seniors, or by a desire to contribute to society through meaningful activities such as blood donation drives, poster-making, and rallies. Certificates of participation were also highlighted as an important motivating factor. One of the leaders stated

that *"I was initially motivated by my seniors"* (Participant 2). Another RRC leader stated that *"I came across this picture of Princess Diana and she was shaking the hands of AIDS patient. And that was because she wanted to remove the stigma and the fact that you know that AIDS cannot pass through skin" (Participant 11).*

Interesting and engaging RRC initiatives including health camps, Red Runs, awareness seminars, marathons, and cyclothon attracted the youth at college levels. Creative competitions such as rangoli making and street plays, poster making were also organised to engage students while educating them about HIV/AIDS. One of the leaders stated *"we organised a red run in the college and in collaboration with CSACS we also organised a state red run at Sukhna lake and we organized three inter college competitions, inter college poster making competition, inter college photography, inter college face painting competition" (Participant 1)*

Cultural taboos and societal stigma remain significant barriers to participation in RRC activities. Students, particularly from rural backgrounds, hesitate to discuss HIV/AIDS openly due to discomfort or misinformation. Leaders noted this as a major challenge and one of them stated that *"students who come to college here are mostly from rural backgrounds, so they have many misconceptions"* (Participant 4). Participants often avoid the limelight due to fear of judgment or stigma. A female leader stated that *"The kids used to ask what this is, then we used to tell them about this club that it spread awareness about AIDS and HIV. Their reaction would be like then let it be." (Participant 1)*

Lack of allocation of specific funds for functioning of the RRC was one of the barriers highlighted by college students, therefore, one of them stated that *"We often collaborate with NCC or NSS for these activities"*.

Strategies suggested by RRC leaders and students to increase participation in RRC included delivering lectures and making activities interesting with fun and interactive ways like quizzes and creative competitions to build comfort and interest among students. A leader suggested that *"The more you talk about something, the less stigma surrounds it" (Participant 12).*

Recommendations from youth included introduction of RRCs at schools, enhanced collaborations with NGOs, provision of more funds, and leverage digital platforms for awareness. A RRC member suggested that *"Creating an app for RRC that includes live doctor sessions and provides unique IDs for students would enhance understanding." while, a leader emphasised that "we need to spread a little awareness in the rural areas also." (Participant 10).*

Overall, introduction of RRC activities improved understanding of HIV/AIDS and its prevention among the youth peers in colleges. It also helped reduce stigma and build understanding and support for people living with HIV/AIDS.

Conclusion

This study revealed that while youth in Chandigarh's RRCs had good awareness of basic HIV/AIDS transmission, significant gaps existed in knowledge of mother-to-child transmission, testing facilities, and treatment. Stigma against PLHIV persisted despite high awareness. Duration of RRC membership and interactive activities positively influenced awareness and attitudes, reflecting the potential of RRCs as peer-led platforms. Qualitative findings highlighted strong motivation among youth but also barriers such as stigma, resource constraints, and limited outreach. Strengthening RRC initiatives with innovative, interactive, and school-level interventions can bridge these gaps and sustain behaviour change, thereby advancing NACP's youth-focused HIV prevention goals.

Recommendations

- The Red Ribbon Club (RRC) programme may be strengthened by expanding activities to school-level institutions for early sensitisation
- Peer-led, interactive methods such as street plays, quizzes, and digital media campaigns may be prioritised to sustain engagement
- Adequate funding and resource support may be ensured for student-led initiatives, with incentives like certificates to encourage participation

- Collaboration with NGOs, local health services, and community groups can help widen outreach, reduce stigma, and promote voluntary blood donation effectively

Limitations

In the study, there was a gender imbalance, as nearly 78.5% of participants were female, limiting representativeness of male perspectives. Being a cross-sectional study, causal inferences could not be drawn. The study was restricted to colleges with active RRCs in Chandigarh, hence, findings may not be generalisable to all youth populations across India.

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Awareness of HIV and its determinants among Community Level Workers in Kerala

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Introduction and rationale

The National AIDS Control Organisation (NACO) through the National AIDS Control Programme (NACP) leads India's response to the Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) epidemic, with implementation at the state level by agencies such as the Kerala State AIDS Control Society. A key pillar of this response is the involvement of Community-Level Workers (CLWs)—including Outreach Workers under Targeted Interventions (TIs), Link Workers, ASHA workers, Anganwadi workers, and counsellors—who serve as the frontline interface for prevention, care, and support services (1, 2). Despite their pivotal role in facilitating interpersonal communication and service delivery to high-risk groups and the general population, limited research has examined their Knowledge, Attitude, and Practice (KAP) regarding HIV prevention and care.

This study aims to address this gap by generating primary evidence on the KAP of CLWs engaged in NACO-affiliated programmes in Kerala. Strengthening this evidence base is vital, as the effectiveness of HIV interventions depends heavily on the competence of these grassroots workers. By identifying knowledge gaps and attitudinal barriers, the study will contribute to enhancing programme quality, ensuring ethical implementation, and reinforcing India's commitment to achieving HIV elimination goals.

Objectives

- To assess the level of HIV awareness among community-level workers in Kerala
- To find out the determinants of HIV awareness among CLWs in Kerala
- To estimate the proportion of the CLWs who attended the Know Your Status (KYS) Campaign during the year 2018-2021
- To compare the level of awareness among the CLWs who attended and did not attend the KYS Campaign
- To explore the perceptions of programme officers in implementing campaigns for improving HIV awareness such as the KYS campaign including facilitators and barriers

Methodology

This mixed-method study was conducted which included both quantitative and qualitative components to assess HIV awareness among CLWs in Kerala. The estimated sample size was 225 based on the NFHS-5 estimate of 34% HIV awareness among women in Kerala, with a 5% alpha error and 20% relative precision.

Participants were selected from five districts—Palakkad, Kozhikode, Thrissur, Thiruvananthapuram, and Kollam—using a multistage sampling approach. The first four districts had implemented the KYS campaign, while Kollam served as a control. In Thiruvananthapuram, Kudumbasree members were selected from three campaign panchayats and two control panchayats; in other districts, Anganwadi workers were randomly selected from urban and rural blocks (n=45 per district).

Data was collected using a semi-structured, pre-tested questionnaire adapted from the Brief HIV Knowledge Questionnaire (HIV-KQ-18); 17 of the 18 items in HIV-KQ-18 and two additional items to assess the awareness of the 'HIV/AIDS (Prevention and Control) Act, 2017'. The tool comprised eight sections assessing socio-demographic characteristics, media exposure, job profile, participation in awareness programmes, HIV knowledge (19 items). Scores were categorised as Very Low (0–5), Low (6–10), High (11–15), and Very High (16–19), with the possible scores ranging between 0 and 19. The questionnaire was translated into Malayalam for field use.

For the qualitative component, key informant interviews were conducted with programme officers from the Kerala State AIDS Control Society and DISHA, Kozhikode, to explore perceptions regarding campaign implementation and challenges.

Quantitative data was analysed using SPSS v26. Descriptive statistics (mean, SD, and percentage) were computed, and associations were examined using Chi-square tests and Odds Ratios. Binary logistic regression identified predictors of HIV awareness. Campaign participation was assessed using case-control analysis, comparing CLWs from campaign and non-campaign areas. Qualitative data were transcribed, translated, and analysed thematically using QDA Miner Lite to derive subthemes and overarching themes. Ethical approval and informed consent were obtained prior to data collection.

Ethical approval was obtained from the Institutional Ethics Committee of State Health Systems Resource Centre–Kerala (IEC No: 25/2023). Written informed consent, confidentiality, and participant anonymity were ensured throughout the study.

Findings

The study assessed HIV awareness among 225 Community level workers (CLWs) in Kerala, with a particular focus on the impact of the Know your status (KYS) campaign. The majority of participants were from rural areas (60.4%) and from the local bodies where the KYS campaign was 72%. Most CLWs were married (81.8%), had children (93.8%), and had substantial work experience, averaging 21.5 years. The mean age was 51 years, and the mean monthly income was Rs. 10,095. Access to mass media was widespread, especially smartphones (99.1%) and social media applications (95.6%), primarily WhatsApp. Nearly all CLWs had seen HIV-related IEC/BCC posters, mainly in hospitals, with content focusing on prevention, diagnosis, and treatment. Over half of the participants had received entry-level and in-service training, mostly covering health-related topics, and 78.7% reported receiving job support for HIV-related activities.

The mean HIV Awareness score obtained was 11.18 (SD ±2.03) and a median (IQR) of 12 (12, 13). Among the 225 participants, 58.2% scored high (scores between 11 and 15) and 5.33% scored very high (scores between 16 and 19). Item-wise analysis highlighted gaps in legal awareness and specific misconceptions about HIV transmission, such as via blood donation. No difference in awareness among CLWs who have attended KYS campaign or not was observed (based on the selection of CLWs local bodies where KYS campaign was conducted or not).

Bivariate and multivariable analyses identified marital status and work experience as significant predictors of awareness, while prior exposure to campaigns, social media use, and job support were associated factors.

The majority of the participants had taken part in health awareness campaigns, with 71.1% attending the campaign for the last time in 2024. Even though the KYS campaign was conducted during 2018-21, only 16 participants (9.87%) out of 162 CLWs remembered that they had attended the KYS campaign.

The comparison between CLWs from areas where the KYS campaign was conducted and those from areas without the campaign showed no significant difference in awareness scores, suggesting limited long-term retention or impact of the campaign.

Qualitative findings corroborated these results, with CLWs acknowledging HIV as a significant health concern and noting the role of IEC/BCC materials, training, and job support in shaping awareness and participation, although gaps in legal knowledge and stigma remained.

Active engagement of community level workers has been identified as one of the major facilitators for implementation of HIV awareness campaigns, along with utilization of media for awareness generation, coordination of stakeholders at multiple levels, integration of awareness campaigns with existing programmes as well as conducting training and capacity building workshops.

"In one of the panchayats, HIV awareness programmes were started with their own interest, we only provided them ToT and refresher training and necessary IEC materials, then the panchayat awarded the community-level workers, the tags for conducting door- to-door campaigns. All these were done using local body fund only." – State level Officer

"We conduct health camps among particular communities and give awareness sessions and along with it, health screening is also conducted for NCDs and some other diseases, and along with it, HIV testing is also done. Otherwise, people may not attend if it is only for HIV due to existing stigma in the community." - District level Officer

Lack of adequate workforce, inadequate budget for conducting campaigns and existing stigma among community workers were observed to be the major challenges in implementing awareness campaigns.

"Sometimes health care workers often isolate people infected with HIV and take separate precautions, which can cause suspicion among other patients."

"Actually, all the departments do not agree to conduct our campaigns; especially the private educational institutions show hesitance to accept the programmes due to existing stigma in the community, but actually adolescents are the ones who need more awareness." – State level Officer

They have also suggested new approaches for implementing campaigns such as incorporating IEC materials in multiple languages for addressing the migrant population, involvement of noted personalities in campaigns and other awareness activities, conducting age-specific HIV awareness programmes, targeted training programmes for specific departments, and extensively utilizing social media platforms for awareness campaigns.

"Most of the IECs are in Malayalam only, but now Kerala has a significant number of migrant populations, and IECs in their languages should be made available." – District level Officer

Conclusion

CLWs play a pivotal role in HIV prevention, education, and care. Overall, CLWs in Kerala demonstrated moderate-to-high awareness, highlighting the need for regular refresher training, targeted IEC/BCC strategies, and reinforcement of legal awareness to strengthen community-level HIV education and programme engagement. The mean HIV awareness score obtained was 11.18 (SD ±2.03) and a median (IQR) of 12 (12, 13). Among the 225 participants, 58.2% scored high (scores between 11 and 15) and 5.33% scored very high (scores between 16 and 19). Also, a median HIV awareness score of 12, with 50.6% scoring above this level. Marital status, work experience, opportunistic HIV testing, social media use, job support, and campaign participation were significantly associated with awareness of HIV among CLWs. However, marital status and work experience remained significant predictors of awareness among CLWs. No significant difference in awareness was noted between campaign and non-campaign groups. Programme officers highlighted community engagement, media use, and coordination as facilitators, while workforce shortages, limited funding, and persistent stigma were key challenges.

Recommendations

- Future HIV awareness efforts should adopt innovative, technology-driven strategies using digital media and updated IEC/BCC materials to address misconceptions and stigma
- Regular refresher training, mentorship, and support from healthcare facilities must be ensured to strengthen CLWs' capacity and confidence
- Integrating HIV awareness and screening within routine health activities can enhance sustainability

- Community-centred approaches involving local participation in planning and delivery can ensure culturally relevant, impactful, and widely accepted HIV prevention initiatives

Limitations

The study faced recall bias as it was conducted long after the KYS campaign, affecting participants' memory of involvement. The absence of a pre-assessment of the CLWs as part of the campaign limited the ability to measure changes in their awareness levels. As a cross-sectional study, causality between factors and awareness could not be established. Moreover, the inclusion of only female Anganwadi and Kudumbashree workers restricted gender representation, and findings from selected Kerala sites may not be generalisable to other regions or populations.

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Assessing the impact of IEC material on knowledge & behaviour among direct walk-in individuals in ICTC & DSRC in Mumbai & Konkan region

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Introduction and rationale

Aligned with the global goal of ending HIV/AIDS by 2030, the National AIDS Control Programme Phase V emphasises the strategic use of Information, Education, and Communication (IEC) materials to promote awareness and preventive behaviours among at-risk populations (1). The Global AIDS Strategy 2021–2026 further reinforces this commitment to ending inequalities and AIDS (2). Integrated Counselling and Testing Centres (ICTC) and Designated STI/RTI Clinics (DSRC) serve as key pillars in India's HIV response, offering testing, counselling, treatment linkages, and STI/RTI management (3-5). IEC materials are routinely used in these settings to educate clients and disseminate prevention strategies (6). However, their impact on walk-in clients—those not classified under key populations—remains underexplored (7-9). Effectiveness depends on relevance, cultural sensitivity, and audience-specific tailoring.

This study, guided by the Sampoorna Suraksha Strategy (10), aims to assess IEC influence on walk-in clients, who voluntarily seek ICTC services based on personal risk perception or external advice. These clients undergo pre-test counselling, provide written consent, and receive post-test support (3). Evaluating IEC impact in this context is vital for refining public health interventions and strengthening the national HIV/AIDS response.

Objectives

- To assess the impact different IEC material on knowledge, behaviour & communication of "self-referred at-risk clients" attending ICTC and DSRC
- To identify factors that limit effective use of IEC material

Methodology

This cross-sectional, mixed-methods study evaluated the impact and reach of Information, Education, and Communication (IEC) materials among at-risk, walk-in clients who attended the selected eight ICTC and DSRC centres across the districts of Thane, Palghar, Raigad, Ratnagiri, and Sindhudurg.

A validated, structured questionnaire was administered through direct interviews among 119 walk-in clients to assess exposure, comprehension, and behavioural impact of the IEC materials. Only walk-in clients identified as at-risk and providing informed consent were included while clients referred from other services were excluded from the study. Additionally, four Focus Group Discussions (FGDs) with service providers were conducted using predesigned open-ended guides to explore perceptions, challenges, and contextual insights.

Demographic and exposure-related variables were analysed using descriptive and correlational statistics in SPSS and Excel for the quantitative data while, FGD transcripts underwent a seven-step thematic analysis

process i.e., Transcription — Cleaning — Initial Coding — Thematic Grouping — Pattern Analysis — Interpretation — Thematic Reporting with quotes.

Ethics approval was sought from Institutional Ethics Committee of BKL Walawalkar Rural Medical College Hospital, Ratnagiri.

Findings

Out of 280 walk-in clients, 119 (42.5%) consented to participate in the study. Among participants, 71.4% were male, and the largest age group was 25–34 years (42.9%). Most had completed higher secondary (29.4%) or secondary education (25.21%), followed by graduates (24.4%). A smaller share had only primary education (12.6%) while 8.4% were illiterate. Occupationally, 27.6% were in government/private service, followed by semi-skilled workers (12.9%), homemakers (12.1%), and skilled workers (10.3%). Most participants (78.5%) were local residents, and 76.5% were aware of ICTC/DSRC services. Over 90% reported easy access. Friends and family were the main source of awareness (42.9%), followed by public campaigns (29.4%). Prior exposure led 21.8% to voluntarily seek HIV testing.

Despite 87.4% exposure to IEC materials, 38.7% were unaware of the variety of formats. Posters (43.2%) and social media reels (41.4%) were seen as most effective, with counsellors playing a key role. While knowledge of major HIV transmission routes was high (85.2%–93.5%), understanding of lesser-known modes and prevention strategies was limited. Misconceptions persisted—33.3% believed HIV was fatal, and 73.9% thought it was fully curable. Encouragingly, over 95% knew about free HIV services at government facilities.

Only 42.4% were willing to share IEC materials, though 71.2% acknowledged their value. Fewer than 42% identified condom use as the most effective preventive method. Responses on condom use with sex workers showed discomfort and divided views. Just 24.6% strongly supported partner treatment for STI/RTI, indicating gaps in holistic prevention awareness.

Although 97.5% knew about ICTC services, only 37.3% were willing to promote them—mainly to friends (72.1%) and spouses (42.7%). DSRC awareness was low (10.3%), with only 8.5% recommending it. Just 16.1% had shared condom-related IEC. IEC recall was high during ICTC/DSRC visits (80%), especially posters (73.8%) and pamphlets (45.8%).

While 85.7% found the content useful, 10% reported no impact due to illiteracy or language barriers. Key messages recalled included transmission routes, HIV status, and the 1097 helpline.

Qualitative insights on effectiveness of IEC material

Awareness and impact

"I used to be unaware of where to get tested. Now I have clearly understood the roles of ICTC and DSRC"- said a client visiting DSRC facility. The quote reflects that IEC materials played a crucial role in enhancing basic awareness about HIV/AIDS, STI/RTI, and available testing services. It also indicates that stakeholders have observed a marked improvement in community understanding of the functions and importance of ICTC and DSRC centres.

Recall and comprehension of IEC content

Participants said that strong message retention, often citing specific phrases from IEC materials such as "Use Nirodh to stay safe from HIV/STI" and "it is necessary to get tested". These examples reflect the effectiveness of clear, actionable messaging in promoting safe sex practices, encouraging timely testing, and reducing stigma. Comprehension was notably higher when content was delivered through relatable scenarios or storytelling formats, which helped bridge cultural and literacy gaps. In contrast, materials that relied heavily on technical jargon or clinical language were less effective, particularly among semi-literate audiences, leading to diminished recall and engagement.

Cultural and regional relevance

"After seeing a couple dressed in Marathi style on the flipchart made the message feel rooted in community."
- Study respondent

Locally contextualised visuals—such as a couple in traditional Marathi attire—helped participants relate to IEC messages, making them feel rooted in their community. Materials using regional languages and familiar cultural elements enhanced engagement and comprehension, while urban-centric content often lacked resonance in rural settings.

Influence on attitudes and behaviour

"After the street play, I found young student said he's not afraid to get tested anymore. That's a big change"
- Counsellor, DSRC

The remark reflects how IEC initiatives effectively increased the willingness to undergo testing and counselling by reducing stigma and fear—particularly among youth and women—demonstrating a meaningful shift in attitudes following community-based interventions like street plays.

Format and delivery preferences

Stakeholders preferred formats like wall posters, flipcharts, and short videos over dense pamphlets. Interactive sessions and street plays were more impactful than passive distribution.

Mobile-based IEC (e.g., WhatsApp messages, short clips) showed promise for younger audiences

Barriers and recommendations

The FGDs also identified specific barriers encountered by the community and provided corresponding key recommendations

Table 1 Barriers & Recommendations for effectiveness of IEC materials

Priority	Identified Barrier	Recommendation
Critical	Stigma via Messaging	Redesign clinical visuals; use culturally sensitive, non-shaming language
Critical	Lack of High-Risk IEC	Create targeted IEC for MSM/FSW; integrate into dating apps
High	Limited Training	Conduct regular sessions on communication, gender sensitivity, and clinical updates
High	Provider Gender Mismatch	Assign gender-matched counsellors in rural areas for comfort
Medium	Weak Digital Outreach	Use influencers/YouTubers; blend digital and traditional IEC
Medium	Technical Jargon	Simplify language; use locally familiar terms
Medium	Generic Design	Co-create content with locals; include stories/testimonials
Medium	Single Language Use	Provide IEC in Hindi, Marathi, English + local dialects

The impact of IEC materials is currently constrained by critical design flaws and operational challenges. To maximise their reach and efficacy, interventions are required across three priority areas:

Critical & immediate barriers

Addressing the most urgent issues involves overhauling content design and outreach to underserved groups:

- Counter Stigma: Replace stigmatising clinical visuals and language with culturally sensitive, non-shaming materials to create a safer environment for engagement.
- Target Key Populations: Develop high-risk, tailored IEC content for key populations (e.g., MSM, FSW), utilising relevant platforms such as dating apps to improve accessibility and relevance.

Operational challenges

Improving the delivery mechanism requires focused effort on training and service provision:

- Strengthen Frontline Workers: Provide regular training to frontline workers on communication techniques, gender sensitivity, and updated clinical protocols to ensure effective service delivery.
- Ensure Provider Alignment: Implement gender-matched counsellor assignments in rural settings to enhance trust and comfort during sensitive health discussions.

Gaps in outreach and design

Overcoming these structural and design gaps will ensure broader acceptance and comprehension:

- Modernise Digital Outreach: Evolve IEC campaigns by leveraging digital platforms, influencer partnerships, and blending online with traditional formats to effectively engage younger demographics.
- Simplify Communication: Minimise technical jargon and use locally familiar terms to boost comprehension, particularly among semi-literate audiences.
- Boost Authenticity: Move away from generic design by co-creating content with community members and integrating real stories or testimonials for greater relatability.
- Ensure Inclusivity: Implement multilingual IEC (e.g., Hindi, Marathi, English, and local dialects) to guarantee wider accessibility and understanding.

Conclusion

IEC material exposure is notably high (87.4%) and widely appreciated for enhancing awareness and reducing stigma (85.7%), with posters and social media reels rated as most effective. Despite this, substantial gaps remain in understanding HIV prognosis—33.3% still view it as fatal—and prevention strategies. While awareness of free government testing is strong (>95%), attitudes reflect hesitation: only 42.4% are willing to share IEC materials, and just 24.6% support partner treatment. ICTC testing awareness is robust (97.5%), but DSRC service knowledge is critically low (10.3%). Both clients and providers advocate for culturally tailored, multilingual, and digitally engaging IEC formats to improve clarity and behavioural outcomes.

Recommendations

To enhance impact, expand IEC formats by incorporating interactive tools such as flip charts and audio-visual aids, with a strong focus on digital myth-busting content. Improve DSRC visibility through region-specific materials and empower peer educators to lead gender-sensitive condom awareness campaigns. Integrate partner treatment messaging into outreach efforts and ensure IEC exposure directly encourages service uptake through QR codes or referral prompts. Consistently provide culturally relevant content across all platforms and locations.

Limitations

The target sample size could not be met due to fluctuating patient loads across sites, influenced by monsoon season and cultivation season in Konkan areas like Sindhudurg, Alibag, and Ratnagiri. Staff engagement in

IEC outreach further reduced attendance, especially in Thane. Remote sites like Palghar faced logistical and accessibility challenges, requiring extended time for data capture. Additionally, other logistic constraints at multiple locations limited team stay duration, affecting continuity in data collection and service delivery.

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SEXUALLY TRANSMITTED INFECTIONS

A study to identify barriers to access STI services in selected districts of Madhya Pradesh

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Introduction and rationale

Sexually transmitted infections pose major public health challenges, causing severe consequences like infertility and increasing HIV risk (1, 2). Effective prevention, diagnosis, and treatment are crucial to mitigate these impacts. STI control programmes focus on interrupting transmission and preventing complications through healthcare services and risk-reduction campaigns (3, 4). Access to reproductive and sexual health services is hindered by barriers like stigma, resource shortages, and gaps in healthcare infrastructure. Concerted efforts are needed to address these barriers and ensure timely, accessible, and confidential STI services (5).

India's National AIDS Control Programme (NACP) combats STIs by establishing Suraksha Clinics, conducting community awareness campaigns, and providing affordable treatment. People who have STIs have higher risk of HIV infections and accordingly prevention and control of STI/Reproductive Tract Infection (RTI) is also a mandate of NACP. One of the global innovations in STI programme administration is the pre-packaging of the medications.

The National/State List of Essential Drugs contains the medications used to treat common STIs and RTIs (6). Many faced substantial expenses and catastrophic expenditures for STI care, even though the National AIDS Control Programme provided free diagnostic and treatment services to STI patients. To reduce financial morbidity and maximise STI management, health services must be better dispersed (7). Despite these efforts, studies indicate that many individuals face persistent challenges in accessing STI service (8-10).

Objectives

- To identify the challenges and barriers faced by healthcare providers in delivering STI services effectively
- To understand the socio-cultural, logistical, and infrastructural barriers impacting the accessibility of STI services

Methodology

A mixed-methods study was conducted among 666 clients/patients visiting the STI clinics in selected districts of Madhya Pradesh. The district selection was based on the DSRC footfall, with the lowest-performing districts chosen where the counsellor position was filled, as the footfall is expected to be lower where the counsellor is absent. The selected districts were Chhatarpur, Shivpuri, Sehore, Rewa, and Dewas. The study participants were recruited in equal numbers from each of the five districts. Participants using STI services were recruited using a consecutive sampling approach at the district hospitals, and a purposive sampling method was adopted for the qualitative part of the study for interview of Health care staff and STI services users.

Quantitative data was collected from 666 clients/patients using pretested semi structured questionnaire. For the qualitative component, in-depth interviews were conducted with healthcare workers and patients and focus

group discussions involved equal proportions of healthcare workers and STI service users, with a minimum group size of 5-10. A total of 5 FGDs and 5 IDIs were conducted across the districts.

Trained research assistants were responsible for administering the quantitative and qualitative data collection. The consenting participants signed the consent form after understanding the context of the study.

Observational field notes were collected by research assistants who spent time in healthcare settings to observe patient-provider interactions, infrastructure, and other factors representing barriers. Participant responses were retrieved from the tool to Microsoft Office Excel for analysis. Quantitative data was analysed using Microsoft Office Excel, presenting the results as the number of responses and percentages. Qualitative interviews were transcribed and translated, then analysed thematically to identify patterns and themes related to barriers in accessing services.

The study was approved by an Institutional Ethical Committee of Government Medical College, Ratlam to ensure compliance with ethical principles. Confidentiality and privacy of participant information were assured, and informed consent was obtained before administering the questionnaire.

Findings

The study was conducted in 5 districts of Madhya Pradesh named as Chhatarpur, Dewas, Rewa, Sehore, and Shivpuri with a total sample size of 666 showed that most individuals (424, 63.7%) were in the 21–30 years age group. The gender distribution revealed that higher proportion of females (520, 78%) attended the DSRC in comparison to males in all five districts. In terms of education, most individuals have completed middle school (183, 27.5%), followed by high school (139, 20.9%). However, professional education is notably scarce, with only 16 individuals (2.4%) holding professional degrees, predominantly in Dewas (5, 0.8%). Economic analysis indicates that most households (517, 77.6%) fall within the lowest income bracket (₹9,308–₹27,882), with Chhatarpur leading this category (104, 15.6%). Only a small fraction (14 households, 2%) falls into the high-income bracket (₹46,475–₹69,534), with no such households in Shivpuri. Occupation data shows that a substantial proportion of individuals (492, 73.9%) are unemployed or housewives. Dewas reports the highest number of unemployed individuals (112, 16.8%), while Shivpuri has the highest number of unskilled workers (17, 2.6%). Professional occupations are almost non-existent, with only one individual reported as a professional in Chhatarpur. Marital status reveals that most of the population (598, 89.8%) is married, with Sehore having the highest number (127, 19.1%). Only 59 individuals (8.8%) are single, most notably in Shivpuri (20, 3%).

Migration patterns indicate that the population is predominantly non-migrant (654, 98.2%). Among the respondents, a small proportion reported migration, primarily as truck drivers or laborers, with the majority indicating no migration history. Awareness of STIs was moderate, with 473 respondents (approximately 71%) having heard about STIs, while remaining respondents were unaware. Awareness of STI clinics or services was relatively low, with only 235 respondents (35%) aware of such facilities in their districts.

The data presents responses on awareness of sexually transmitted infections (STIs) and available clinics or services. Overall, 71% of respondents had heard about STIs, with Sehore and Dewas having the highest awareness (74.4%) and Rewa the lowest (63.9%). However, only 35.3% knew about STI clinics in their district, indicating a gap in service awareness. Sehore had the highest awareness of STI clinics (48.1%), while Rewa had the lowest (24.8%).

Most respondents (74%) felt comfortable discussing STIs with healthcare providers, indicating a willingness to seek medical advice. However, a small proportion reported feeling neutral (15.8%) or uncomfortable (8.3%), suggesting the need for better communication strategies and stigma reduction. Respondents identified several barriers to accessing STI services. The most common issues included fear of stigma or judgment, reported by 41% of the total individuals, and a lack of awareness about where to obtain services, mentioned by 316 (47.4%) respondents. Long waiting times and financial constraints were also cited, though less frequently. Notably, 208 (31.2%) individuals reported no barriers, indicating variability in service access across districts. The distance between clinics and STI centers significantly impacted service utilization, with 200 (30%) respondents indicating that it hindered access. Among the total respondents, only 239 (35.9%) had visited an STI clinic or availed of related services, while 427 (64.1%) had not. The majority sought services at district hospitals or private clinics, highlighting the role of these facilities in STI care delivery.

The reasons for seeking STI services varied widely. Common complaints included itching, leukorrhea, and other genital symptoms. A few respondents mentioned more serious conditions such as genital ulcers, syphilis, and chlamydia. Some individuals sought follow-up treatment or visited for the first time under guidance from community health workers. Many respondents faced challenges during their visits to STI clinics. The most frequent issues included the unavailability of doctors, lack of medicines, long waiting times, and difficulty finding clinics due to inadequate signage. However, a significant number of respondents reported no problems during their visits. There is no specific socio-cultural barrier identified in this study apart from stigma, hesitancy and fear of accompanying person. The lack of awareness is overall responsible from patients point. The patients coming to government facility mainly belong to lower socio economical class and their education level is also low, which comes out to be main social barrier in this study.

Conclusion

The survey reveals critical gaps in awareness, accessibility, and delivery of STI services across the five districts. Most respondents know about STIs, but fewer are aware of clinics or services. Key barriers include stigma, lack of awareness, long waiting times, and financial constraints, compounded by the distance to clinics. Challenges during visits, such as unavailability of doctors, lack of medicines, and poor signage, further deter access. Respondents emphasized the need for timely services, improved privacy, better infrastructure, and awareness campaigns to address stigma and promote STI care. The analysis identifies widespread barriers to STI services in all districts: social stigma, low awareness, limited resources, and inaccessible locations.

Recommendation

The recommendations include implementing targeted community awareness campaigns to normalize discussions around sexual health and reduce stigma, ensuring accessibility of well-marked and consistently located STI centres, redesigning service areas to provide privacy and confidentiality, and training healthcare staff on empathy and professionalism. Improving resource availability through more efficient supply chains and electronic inventory systems, as well as addressing gender-related considerations by increasing male participation, has been observed. Enhancing record-keeping and monitoring, engaging community advisory boards, providing financial support for patients, and implementing robust follow-up programmes are additional strategies recommended.

Limitations

The study's reliance on self-reported data may introduce recall bias. Furthermore, lack of robust comparisons with urban populations limits the generalizability of findings. This study did not assess patient referral status at the STI clinic, which might have offered further insights.

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Clinico-etiological study of vaginal discharge among sexually active women attending a tertiary care centre in Mumbai

AUTHORS

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Introduction and rationale

Abnormal vaginal discharge is a common clinical condition among women (1). Symptoms like vaginal discharge, odour and itching are frequently known causes of suffering and discomfort, can lead to complications like infertility, pre-term birth, miscarriages etc (2, 3). World Health Organization (WHO) and Centres for Disease Control and Prevention (CDC) has provided guidelines on vaginal discharge management (4-6).

Vaginitis can result from bacteria (bacterial vaginosis-BV), fungi (vulvovaginal candidiasis-VVC) or protozoans (trichomoniasis) (7). BV, which is characterised by malodorous discharge and is caused by the overgrowth of several facultative and anaerobic bacterial species (8). VVC is characterised by pruritus and curd-like discharge. Vaginal trichomoniasis is associated with a copious yellow or green, sometimes frothy discharge (9).

Vaginal Candidiasis is the most common fungal infection (10). *C. Albicans* constitutes 85%–90% of cases. Some of the medically significant C species include *C. Albicans, C. Glabrata, C. Tropicalis, C. Krusei, C. Parapsilosis* (11). Despite *C. Albicans* being the most common cause, the frequency of nonalbicans candidiasis is increasing. Alarming rates of drug resistance especially to azole group of antifungal agents in albicans and nonalbicans species is observed. Laboratory services especially accurate etiological diagnosis is a powerful tool for management of such cases thereby facilitating proper treatment and prevention of complications.

Objectives

- To identify the etiological agent(s) of vaginal discharge among sexually active women attending the STI clinic at our tertiary care center
- To determine anti-fungal susceptibility testing (AST) by broth microdilution method with Vitek-2 AST system from cases of vaginal candidiasis

Methodology

A prospective, cross-sectional study was conducted in a total of 162 clients visiting the Sexually Transmitted Disease (STD) clinic located at the Skin and VD Department and Regional STI Training, Research and Reference Laboratory (RSTRRL), Department of Microbiology of TNMC & BYL Nair Chartable Hospital, Mumbai. Only sexually active women in the age group of 18-60 years visiting the STI clinics with abnormal vaginal discharge were included in the study after written informed consent was obtained.

All participants were provided pre-test counselling services by STI counsellor. A thorough genital examination was performed to observe nature of discharge, colour and odour. PH test and Whiff test were done on vaginal discharge of the patients. Per speculum examination was done to collect vaginal discharge samples (4 sterile swab sticks) by the clinician. Samples were transported to the laboratory immediately or within 2 hours of collection. Additionally, detailed clinical history was taken as per the case record form.

In the lab after receipt of the samples, the following tests were done

- Wet mount of samples with normal saline and 10% of KOH
- Gram stain – Neugent scoring for Bacterial vaginosis
- Culture for T. vaginalis in Kupferberg medium
- Culture: Vaginal swabs were inoculated on Sabouraud's dextrose agar. Germ tube test was performed on the growth isolates and inoculated on HiChrome agar at 25°C for C speciation which were further processed on cornmeal agar for species confirmation. Identification of the C species was done by both conventional method and Vitek-2 ID system
- Antifungal susceptibility testing (AST) was performed by broth microdilution method with Vitek-2 AST system in cases of vaginal candidiasis

The collected data was analysed using SPSS software. Descriptive statistics such as frequencies, percentages, measures of central tendencies and chi-square analysis were used to analyse the data. A p value of <0.05 was considered as statistically significant at a 95% confidence interval (CI).

Approval from the Ethics Committee was obtained from TNMC and BYL Nair Charitable Hospital.

Findings

The mean age group was around 33 years. Majority of the patients presented with foul smelling white mucoid discharge associated with itching in 117/162 (72.2%) cases. The most common predisposing factor was use of contraceptives (OCP & IUCDs) (30%), followed by poor genital hygiene (23.4%) and diabetes mellitus (2%). The pH of vaginal secretions was <4.5 in a large proportion of examined cases which included women with vaginal candidiasis (VC) and other nonspecific vaginitis, but women with bacterial vaginosis (BV), the pH was >4.5. Whiff amine test was positive in 32 cases, all of them having BV.

Clinical diagnosis of nonspecific vaginitis was made in 81(50%) patients, BV in 21 (13%) patients, VCC in 58 (35.8%) patients, and no case of trichomoniasis. The etiological diagnosis of bacterial vaginosis was made in 19.7 % (32/162) of the cases based on wet mount, gram stain for Nugent scoring and presence of clue cells (Figure 1). Vulvovaginal candidiasis was diagnosed in 32.09% (52/162) cases by gram stain which showed presence of budding yeast cells with or without pseudo hyphae (Figure 2). No case of trichomoniasis was found in the study (Table 1).

Figure 1 Gram stain for BV showing clue cells

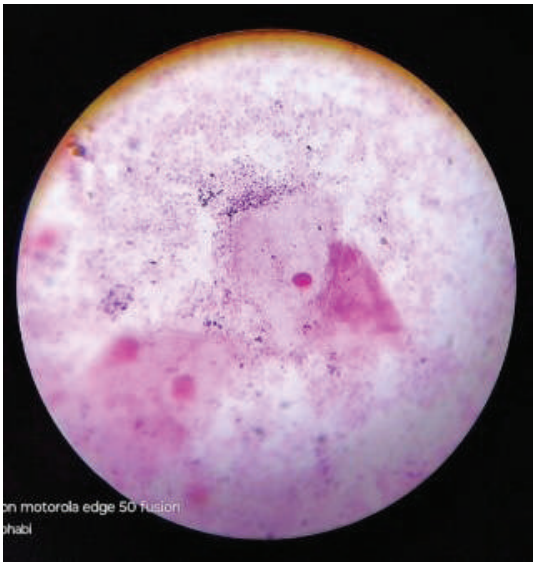


Figure 2 Gram stain showing budding yeast cell with pseudohyphae

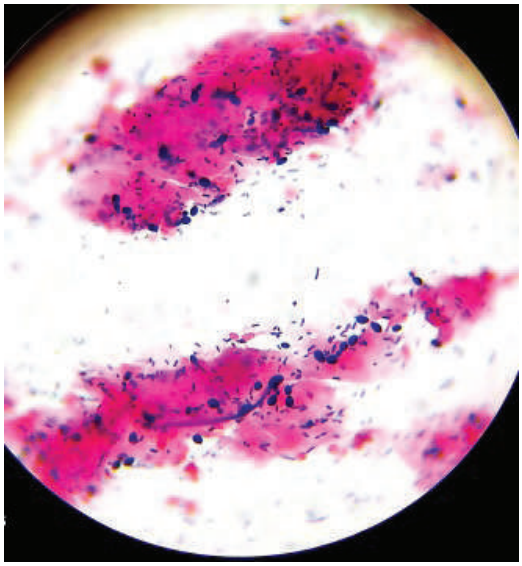


Table 1 Percentage of vulvovaginal candidiasis, bacterial vaginosis, and trichomoniasis through clinical suspicion, wet mount, Gram stain, and culture (n=162)

Type of vaginal infection		Etiological Diagnosis		
	Clinical diagnosis	Wet mount	Gram stain	Culture
Bacterial Vaginosis	21 (13%)	21 (13%)	32 (19.8%)	Not applicable
Vulvovaginal candidiasis	58 (35.8%)	40 (24.7%)	44 (27.1%)	52 (32.1%)
Trichomoniasis	0	0	0	0
Nonspecific vaginitis	83 (51.2%)	78 (48.1%)		

Candidiasis was found to be the most common cause of symptomatic vaginal discharge followed by bacterial vaginosis. Among candidial vaginosis, *C. Albicans* was the predominant species found in 32/52 (61.5%) cases and non albicans species (NAC) was found in 20/52 (38.5%) cases. The most common non albicans Candida species found was *C. Glabrata* 10/20 (75%) followed by *C. Dubliniensis* 2/10 (20%) and *C. Tropicalis* 1/10, *C. Krusei* 1/10 and *C. Parapsilosis* 1/10 (10% each). Speciation of Candida on HiCrome agar showed light green colonies of *C. Albicans*, dark blue green colonies of *C. Tropicalis,* pink colonies of *C. Glabrata*, pale colonies of *C. Parapsilosis* and pale pink centre with white edge rough, spreading colonies of C. *Krusei* (Figure 3).

Figure 3 HiChrome agar showing different species of Candida

Culture on corn meal agar showed terminal single chlamydospores of *C. Albicans* (Figure 4), absence of chlamydospores, hyphae, or pseudohyphae in case of *C. Glabrata* (Figure 5), sage bush/spider web appearance of *C. Parapsilosis*, sub/nonterminal chlamydospores of *C. Tropicalis* arranged in clusters or singly and match sticks appearance of *C. Krusei*.

Figure 4 Albicans on cornmeal agar showing terminal single chlamydospores

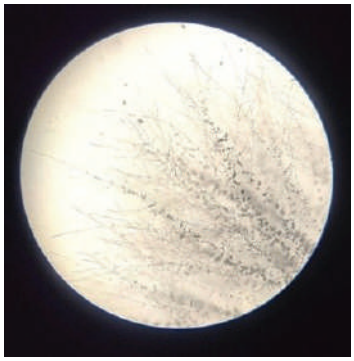
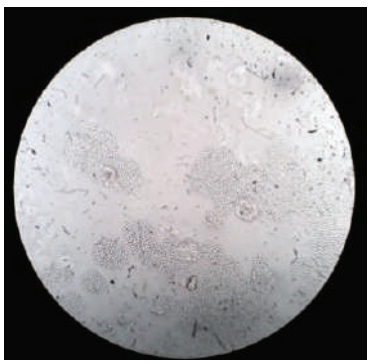


Figure 5 Glabrata on cornmeal agar seen by the absence of chlamydospores, hyphae, or pseudohyphae



Among *C. Albicans*, the resistance rate to fluconazole, voriconazole and amphotericin B was found to be 40%, 31.4% and 11.4% respectively. Among non-albicans C, all the isolates were 100% susceptible to all the drugs tested except for *C. Glabrata* and *C. Krusei* which is intrinsically resistant to fluconazole. The resistance rate to caspofungin and amphotericin B was found to be 10% and 50% respectively for *C. Glabrata*.

Conclusion

Simple microscopic examination like wet mount and Gram stain and culture are useful tools for rapid and precise etiological diagnosis which helps in institution of appropriate therapy thus reducing the costs, failure of therapy, injudicious use of antimicrobials and prolonged suffering and unfavourable outcome. The study demonstrates the importance of incorporating culture and antifungal susceptibility testing to ensure precise and effective treatment. Resistance to antifungal agents like fluconazole, voriconazole, and amphotericin B in C albicans and intrinsic resistance in non-albicans C species emphasise the urgency for antifungal stewardship.

Recommendations

Educational initiatives on the importance of genital hygiene and safe contraceptive practices among reproductive age group (19–35 years) should be done which include information on recognising early symptoms of vaginal infections and the importance of timely medical consultation. STI clinics should be utilised for combined prevention and management of vaginal infections and HIV.

Limitations

There were a limited number of samples which have been received during the study duration, due to which the findings cannot be generalised for larger population groups.

Acknowledgement

We are grateful to NACO/MDACS for sponsoring this OR project. We acknowledge the support from all the study participants.

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TARGETED INTERVENTIONS

Knowledge, attitude and practice among High-Risk Groups on HIV & STI prevention and control in East Siang district and Itanagar Capital Region, Arunachal Pradesh

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Introduction and rationale

In recent times, yearly rise in new HIV infections have been recorded in the North Eastern states of Tripura and Arunachal Pradesh which did not have a notable existence in the initial years of the epidemic (1). As of 31st March 2023, 1122, cases of HIV were recorded in Arunachal Pradesh out of which Papum Pare district alone reported 477 cases (2).

High-risk group (HRG) individuals include female sex workers (FSWs), men who have sex with men (MSM), and injecting drug users (IDU) (3). STIs including HIV, is largely preventable and controllable. Rapid spread of HIV and STI from HRGs to general population or vice versa occurs due to inadequate knowledge, negative attitudes and risky practices concerning HIV/AIDS. To sensitise HRGs regarding these diseases, it is essential to study their knowledge, attitudes and practices. There is also a paucity of studies addressing knowledge, attitudes and practices of HIV and STIs among HRGs especially in Arunachal Pradesh.

Objectives

- To assess the knowledge, attitudes and practices among HRGs of HIV on HIV and STI prevention and control in the study area
- To describe the socio-demographic characteristics of the HRGs of HIV in the study area

Methodology

Study design: A cross sectional study using quantitative research methods was conducted in Passighat, East Siang district and Itanagar Capital Region (ICR) of Arunachal Pradesh from November 2023 to May 2024 (6 months) among all HRGs of HIV (FSW, MSM and IDU) belonging to the study areas.

Inclusion criteria

All FSW, MSM and IDU individuals of the selected study areas were included in the study.

Exclusion criteria

- Three visits were made for a particular case and if after the 3rd visit the contact could not be traced, the case was excluded from the study.
- Individuals, who did not give consent or refused to participate, were excluded from the study.
- Individuals, who did not currently reside in the study area, were excluded.

Sample size: There is no report on similar kind of study in Arunachal Pradesh. Therefore, assuming the prevalence of knowledge on HIV to be 50%, with 95% CI, 5% relative precision and 10% non-response rate, the sample size was calculated to be 423.

Sampling technique: The sample was divided equally among FSWs, MSMs and IDUs. On the basis of HIV positive cases reported by APSACS, 141 respondents of each HRG were proportionally selected from the study areas using snowball sampling technique.

Sources of data: Primary data was collected from the selected individuals by direct personal interview method using pre-designed and pre-tested proformas devised for each HRG.

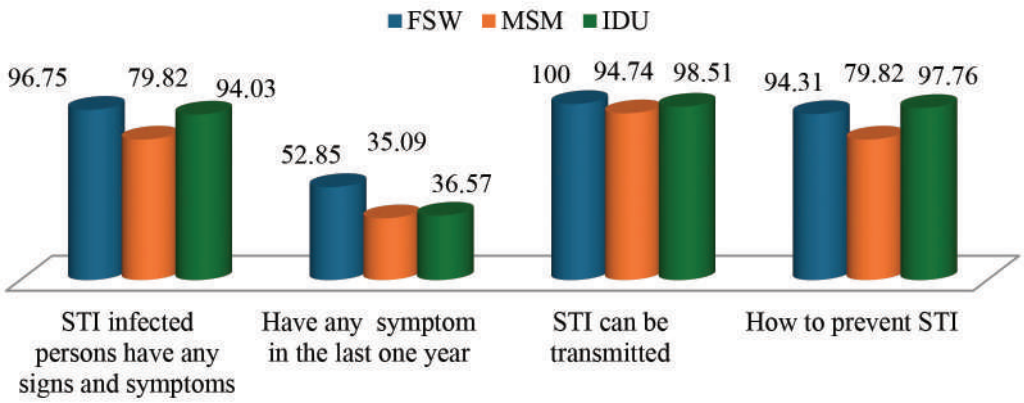
Ethical clearance was obtained from the Institutional Ethics Committee of Tomo Riba Institute of Health & Medical Sciences, Naharlagun, Arunachal Pradesh.

Findings

Socio-demographic profile: Most participants were of the age group 18-28 years. The median age of FSWs, MSMs and IDUs was found to be 24 (19-34), 24 (17-40) and 25 (17-54) years respectively. Most of the FSWs (73) and IDUs (50) were educated up to class 12 while most MSMs (70) were graduates. Tribal population dominated among all the key populations. Most FSWs (127) and MSMs (81) had a non-monogamous relationship (open) with a man while IDUs had diverse current relationship status. Median age at sex work debut of FSWs and MSMs were 21 (17-32) and 19 (16-30) years respectively and average duration in sex work was 3.06 (0.3-12) and 4.30 (0.2-12) years respectively. Median age at initiation and average duration of drug use among the IDUs was 19 (14-35) and 5.85 (1-28) years respectively.

Knowledge and awareness: Out of the 136 (96.5%) FSWs, 137 (97.2%) MSMs and 141 (100%) IDUs who had heard about HIV, 69.12% FSWs, 79.56% MSMs and 92.91% IDUs were aware that STI infected persons have any signs and symptoms, 95.59% FSWs, 86.86% MSMs and 98.58% IDUs knew that HIV can be transmitted from person-to-person. 90.44% FSWs, 86.13% MSMs and 97.16% IDUs had knowledge of prevention of HIV. 88.24% FSWs, 78.83% MSMs and 85.82% IDUs correctly responded that STIs increase the risk of acquiring HIV infection. Only 13.24% FSWs, 7.3% MSMs and 8.51% IDUs were aware about PEP. 66.91% FSWs, 83.94% MSMs and 98.58% IDUs were aware about HIV self-testing (HIVST) service. 123 (87.2%) FSWs, 114 (80.9%) MSMs and 134 (95.0%) IDUs had heard about STI. Figure 1 shows knowledge and awareness regarding STI among High-Risk Groups.

Figure 1 Knowledge and awareness about STI



Attitude: Among the HRGs who had heard about HIV/STI, 72.79% FSWs, 96.35% MSMs and 90.8% IDUs were willing to take care of a relative/friend with HIV/STI. 49.26% FSWs and 64.96% MSMs would continue to work with clients even after knowing their positive status (HIV/STI). 22.79% FSWs and 46.72% MSMs would work with clients while having genital lesions. 50.74% FSWs, 59.12% MSMs and 50.4% IDUs have the attitude that a HIV/STI positive person belonging to HRG be kept in isolation and treated separately. All IDUs admitted that they will never share syringe/ needle after knowing their own positive status (HIV/STI). However, 10.6% had the attitude of sharing syringe/ needle with their friend even after knowing their friend's positive status (HIV/STI).

Background information and practice: Table 1 provides a comprehensive overview of the background information of HRGs and their practices:

Table 1 Background information of HRGs and their practices

Characteristics		FSW (n=141)	MSM (n=141)	IDU (n=141)
Client volume per week	7 or less	33.3%	65.9%	NA
	8-10	52.5%	24.1%	NA
	> 10	14.2%	9.9%	NA
Have occasional client		80.1%	73.8%	NA
Have regular client		61%	29.8%	NA
Have non-paying partners		17.7%	72.3%	NA
Had sex with multiple partners in the past year		13.5%	56.7%	50.4%
Percentage of clients who use protection	< 25%	1.4%	22.1%	NA
	25-50%	31.9%	74.4%	NA
	> 50%	66.7%	3.5%	NA
Stop having sex when a condom bursts during sex		68.1%	44.7%	51.1%
Have sex when you are under the influence of alcohol/drugs		65.2%	87.2%	93.6%
Undergone a HIV test		95.7%	95.7%	97.2%
Know HIV status of self		92.2%	95%	97.9%
Use injectable drugs		0%	8.5%	100%
Share Syringe/needles with friends		NA	NA	44.7%

*Note: Some of the questions did not pertain to the said typology and have been presented as 'Not Applicable' (NA)

Table 2 shows some practices followed by FSWs and MSMs (who heard about HIV and STI) before and after each sexual act that they perform due to certain reasons that they believe.

Table 2 Practices among FSW and MSM following a sexual act

Characteristics		FSW (n=136)	MSM (n=137)
Wash genitalia before sex to prevent HIV/STI		43.38%	89.78%
Wash genitalia after sex to prevent HIV/STI		94.85%	97.81%
Wash private parts before/after sex because of	Fear of acquiring HIV/ STI	60.29%	73%
	Dirty feeling	91.91%	84.67%

Conclusions

Although the level of knowledge concerning HIV/STIs is good among the HRGs, it is mostly concentrated among the younger age groups. Majority HRGs have a compassionate attitude if their friends/relatives/peer are affected by HIV/STI. Percentage of clients using protection is less as revealed by most FSWs and MSMs. Vast majority of the FSWs and MSMs wash their genitalia before and after sex as a measure to prevent HIV/STI. Although very less percentage of IDUs have the attitude of sharing syringe/needle, however in practice, almost half of the IDUs share syringe/needles with their friends, which is an alarming finding.

Recommendations

Scale up programmes targeted at providing Social and Behavioural Change Communication along with health and awareness campaigns among HRGs, especially the older age groups, can further enhance their knowledge, attitude and practice. Safe sexual practice messages should not only target HRGs and PLHIVs, but also be intensified for circulation of such messages to common public/clients in order to make them aware of HIV AIDS and increase the usage of condoms.

Limitations

Due to limited resources, all districts of Arunachal Pradesh could not be covered.

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Pattern of Injecting Drug Use and its correlation with the rise in HIV Detection among People Who Inject Drugs of Cachar, Kamrup Metropolitan and Nagaon districts of Assam

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Introduction and rationale

Injecting drug use (IDU) has become a critical driver of the HIV epidemic in India and globally, posing significant public health challenges (1, 2). Although India has made notable progress in reducing HIV prevalence through targeted interventions, stigma reduction, and improved access to antiretroviral therapy (ART), new evidence shows an alarming increase in HIV detection among people who inject drugs (PWID), especially in north-eastern states (3, 4).

Assam, historically classified as a low-priority state for HIV interventions, has recently reported steep spikes in HIV cases among IDUs, particularly since 2021 (4). Districts like Cachar, Kamrup Metropolitan, and Nagaon—traditionally not considered high-burden—have witnessed a sudden rise in HIV positivity, with young males being most affected. The COVID-19 pandemic period also appears to have accelerated initiation into injecting practices, with peer influence, unemployment, mental stress, and drug market shifts fuelling the trend (1, 2). Unsafe practices such as needle sharing and lack of awareness further compound risks (1, 2, 5). This study investigates the patterns of IDU, socio-economic and gender disparities, rural–urban variations, and underlying causes of HIV transmission. Evidence from this study aims to inform programme strategies under the National AIDS Control Programme (NACP), emphasising prevention, harm reduction, and equitable healthcare access (4, 5).

Objectives

- To identify the pattern of injecting drug use in relation to HIV detection in Cachar, Kamrup (M) and Nagaon districts of Assam
- To study the difference between high and low socio-economic status concerning the rate of HIV detection
- To examine the rural–urban differences among IDUs concerning HIV detection
- To assess the triple interaction of socio-economic status and locality in relation to HIV detection
- To analyse the causes that might have led to injecting drug use among IDUs

Methodology

The study employed a cross-sectional design, using both quantitative and qualitative approaches to capture a holistic understanding of injecting drug use and its association with HIV detection. Data were collected from three districts of Assam—Cachar, Kamrup Metropolitan, and Nagaon—covering a total of 1,467 persons who inject drugs (PWID).

Among these, 907 were registered with Targeted Intervention (TI) NGOs and 560 were non-registered, representing hidden populations. Registered IDUs were sampled randomly, while non-registered IDUs were reached through snowball sampling.

Structured questionnaires were used to gather quantitative data on drug initiation patterns, modes of access, frequency, health complications, and HIV status, while qualitative data were collected through in-depth interviews with 14 key stakeholders, including ASACS officials, ART and OST counsellors, NGO staff, paddlers, and members of positive networks.

Descriptive statistics such as frequency distributions, percentages, and cross-tabulations were employed to identify key patterns. No inferential statistics were used, but narrative analysis of qualitative data supplemented quantitative findings.

Ethical approval was sought from Institutional Ethics Committee of Assam Don Bosco University and ethical protocols were strictly followed, with verbal consent obtained from adult participants and written assent plus guardian consent for respondents aged 15–17 years. The study adhered to NACO guidelines to ensure participant confidentiality and minimise psychological or social harm.

Findings

The demographic profile of the study respondents showed a clear male dominance (99.73%), with the majority aged between 15 and 35 years. Socio-economic analysis indicated that 97.96% belonged to low-income households. The sample was almost evenly split between rural (45.8%) and urban (54.2%) localities.

The study findings highlight trends in injecting drug use across the three districts. More than half (55.3%) of IDUs initiated injecting before 2019, but a sharp rise occurred post-2021 (28.1%), largely attributed to vulnerabilities such as unemployment, economic stress, and social isolation. Peer networks were the dominant channel of initiation (78.5%), followed by doorstep access (10.5%). Alarmingly, 42.3% reported that injection was their first route of drug use, indicating early exposure to high-risk practices. Among substances injected, heroin and opioids overwhelmingly dominated (95.6%), with minimal reporting of stimulants such as cocaine or methamphetamine. Dependency levels were extremely high, with 70.8% injecting daily or multiple times a day. Health complications were common: 50.7% reported infections or collapsed veins, while 43.1% were unaware of risks associated with IDU. Risk perception remained poor, with nearly half unaware of HIV or hepatitis risks. Injection practices revealed unsafe behaviours, including injections in unsafe sites such as the neck, groin, and palms. HIV prevalence was 23.4%, with an additional 14.8% unwilling to disclose status—suggesting a potential hidden epidemic.

Analysis by socio-economic status showed that almost all HIV-positive cases were concentrated among low-income respondents (97.9%). The significantly higher detection rate among the low SES group compared to the high SES group suggested correlation between socio-economic status and vulnerability to HIV infection. It was reported that financial instability was a major driver for high-risk behaviours, such as unprotected sex or unsafe work conditions (e.g., migration for labour, sex work, drug use) among respondents. In districts like Kamrup (M), reported with high migrant population, people from lower socio-economic backgrounds were engaging in high-risk activities due to economic pressures, increasing the rate of HIV infection.

Rural–urban variations indicated higher HIV detection in urban areas (54.1%) compared to rural (45.9%). All female IDUs (0.3% of total) were urban, highlighting gendered invisibility in rural areas. Registered IDUs reported higher detection rates, likely due to greater testing access, whereas non-registered groups reflected hidden prevalence due to underreporting and non-disclosure.

Stakeholder interviews underscored the influence of peer pressure, economic instability, and lack of awareness in fuelling initiation. Many noted that supply shortages or rising costs of non-injectable drugs pushed users toward injecting as a more cost-effective method.

It was reported that many users start injecting due to peer influence or the desire to fit into a group- *"Initially, they start injecting out of curiosity, but later it becomes a habit."*- (Counselor 1).

"Young people feel like if they don't do what their friends are doing, they might be tagged as 'uncool'." (Assistant Director, ASACS)

It was revealed that many users begin drug use orally (smoking or snorting) but later switch to injecting for a stronger effect. In this regard, one of the ART centre counsellors explained that *"After a particular time, sniffing cannot create that impact, so they prefer injecting the drugs which are very impactful."*

One of the officials, Prevention Division, SACS also mentioned that *"In the earlier days when people were into alcohol or ganja, they didn't easily switch to injecting. But when someone consumes drugs orally, they switch to injecting practices very soon, sometimes within 1-2 months."*

Factors such as stress, boredom, and trauma also played significant roles. Collectively, the findings emphasise the urgent need for targeted interventions addressing economic vulnerabilities, peer influence, and stigma while strengthening harm reduction services.

Conclusion

The study concludes that injecting drug use in Assam is accelerating, particularly among young, low-income males, and is closely tied to the rise in HIV detection. Unsafe practices, low awareness, and peer-driven initiation exacerbate risks. Urban centres remain hotspots, though rural areas also show increasing prevalence. Socio-economic disparities are strongly linked with vulnerability to infection. Female participation is minimal but warrants attention. Evidence underscores the urgent need for comprehensive, multi-sectoral interventions combining harm reduction, awareness, counselling, and stigma reduction to effectively contain HIV transmission among IDUs in the studied districts.

Recommendations

- Programme strategies may prioritise low-income and urban IDUs through peer-led awareness, safe injection campaigns, and expanded access to Opioid Substitution Therapy (OST) and clean needle distribution
- There must be rural outreach campaigns to identify hidden populations and link them to the Programme
- There is a need for gender-sensitive initiatives to reach out to female IDUs
- HIV testing and treatment services may be decentralised, stigma and discrimination to be reduced, and integration with mental health and livelihood support to be ensured
- Strengthening community-based interventions will be crucial for long-term impact

Limitations

The study faced limitations including reliance on self-reported data, which may be affected by recall bias or underreporting due to stigma. Female participation was extremely low (0.27%), limiting gender-based analysis. Recruitment of non-registered IDUs was challenging, and the achieved sample size fell slightly short against the proposed and approved sample size. Despite these constraints, the study maintained methodological rigor, and findings provided valuable insights for programme planning.

Acknowledgement

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Awareness of HIV/AIDS among Injecting Drug Users in two districts of Kashmir

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Introduction and rationale

Injecting drug use significantly contributes to the spread of the human immunodeficiency virus (HIV). On a global scale, IDUs contribute to 10% of new HIV infections each year. In India, IDUs play a major role in the HIV/AIDS epidemic, with a noted HIV positivity rate of 6.23% among this group (1, 2). A study from Kashmir revealed that 71% of IDUs shared needles and syringes, while 70% reported reusing them, a significant increase compared to the 14% needle-sharing rate found in a multicentric study from other Indian regions (3, 4).

In India, the HIV epidemic driven by IDUs remains a serious concern, even though the country's overall HIV prevalence is relatively low. Education, information, and communication (IEC) strategies are vital components for preventing HIV among high-risk groups. A study conducted among IDUs in China aimed at assessing knowledge and behaviour related to HIV/AIDS showed that participants had a good level of awareness about the virus. This finding was connected to their involvement in specific intervention programmes (5). However, there is a noticeable lack of available literature addressing knowledge and awareness of HIV/AIDS in India, especially among high-risk groups like IDUs.

The Kashmir region has seen an enormous increase in injecting drug use, alongside unsafe practices like needle sharing, which raise the risk of HIV transmission. However, there dearth of epidemiological literature regarding awareness, knowledge, and risk perception towards HIV transmission and prevention measures among IDUs in Kashmir. This study sought to bridge that gap and offer evidence-based recommendations aimed at strengthening HIV prevention initiatives particularly in Kashmir which faces unique challenges in its own context.

Objectives

- To assess HIV/AIDS transmission and prevention knowledge among IDUs in selected districts of Kashmir
- To determine injecting practices of injecting drug users
- To evaluate self-assessed HIV risk among IDUs

Methodology

A cross-sectional study aimed to evaluate the knowledge, behaviours, and practices related to HIV among injecting drug users (IDUs) in the districts of Srinagar and Baramulla, located in Jammu and Kashmir was conducted among the participants in the study were included from High-Risk Group (HRG) sentinel sites designated for IDUs under the Jammu and Kashmir AIDS Control Society (JKACS). These sites in Srinagar and Baramulla functioned as the main centers for recruiting participants and gathering data.

The study included 429 male IDUs who were registered with HRG-targeted intervention sites in the districts of Srinagar and Baramulla.

Participants qualified if they had used any substance for non-medical or recreational purposes at least once in the past three months. If they had engaged in drug injection during the three months leading up to the interview.

Trained investigators conducted face-to-face interviews using a structured questionnaire. To uphold confidentiality and reduce social desirability bias, interviews were held individually in private settings. The questionnaire was created following an extensive literature review and included information on socio-demographic characteristics, injection use practices, HIV knowledge and awareness, HIV risk behaviour, and sexual practices. Training, piloting the study tool, and regular monitoring was done to ensure quality.

Descriptive statistics summarised participants' socio-demographic characteristics, knowledge levels, and behavioural patterns. The chi-square test assessed associations between categorical variables, while Fisher's exact test was applied when Cochran's criteria were not met. A two-tailed p-value of less than 0.05 was deemed statistically significant. Ethical approval was sought from Institutional Review Board of Government Medical College, Srinagar

Findings

The study included a total of 429 participants, with almost equal numbers from Srinagar District (48.5%) and Baramulla District (51.5%). Most participants were young adults aged 18 to 24 years (49.4%). Educational backgrounds varied, with 25.2% having completed 10th and 12th grades, while 3.5% were illiterate. Most of the participants were unmarried (64.8%) and lived with their families (97.9%). The prevalence of HCV infection was noted at 54.3%, whereas HBV and HIV infections were reported at 8.9% and 0.7%, respectively, accompanied by significant gaps in screening awareness.

Out of 429 IDU, the 329 participants responded to have heard about HIV. Among the 329 IDUs, 66.9% confused HIV with AIDS, and 30.7% believed that AIDS is curable. Stigma was evident, with 80.2% linking HIV solely to high-risk groups. 88.1% acknowledged that condom use is preventive. Knowledge of blood testing was high (85.7%); however, misconceptions regarding diagnosis and treatment access persisted. A comprehensive understanding of HIV was reported among 74.2% of participants, indicating notable gaps that require targeted interventions.

Needle sharing was widespread, reported by 69.2% of participants. Among 329 participants aware of HIV, 39.5% considered themselves "somewhat likely" to contract the virus, 34.7% perceived their risk as low. More than half expressed occasional worries about HIV, yet 33.1% reported rarely or never thinking about it. Approximately 66% disagreed with the idea that they were immune to the virus, yet 34% felt at low risk. Despite their awareness, 36.1% rarely or never contemplated HIV. These findings highlight the pressing need for targeted education to improve risk perception and encourage preventive measures.

Participants from Srinagar displayed greater knowledge (80%) compared to Baramulla (68.3%, $p=0.008$). Education showed a strong positive correlation, with post-graduates (91.7%) demonstrating the highest knowledge levels, while illiterate individuals exhibited the lowest (44.4%, $p<0.001$). Education was determined to be the most significant predictor of comprehensive HIV knowledge ($p<0.001$), with elevated educational levels corresponding to enhanced awareness. Occupation also impacted knowledge, as those dependent on parents (81.8%) and drivers (83.3%) showed higher levels of awareness. Marital status, age, and income did not demonstrate a significant influence. These findings emphasize the need for targeted educational programmes to address knowledge gaps across different regions and among lower educational groups.

Conclusion

This study highlights the immediate need for harm reduction programmes tailored to the cultural context of injection drug users (IDUs) in Kashmir. Although 76.7% of participants were aware of HIV, there were many misconceptions—66.9% associated HIV with AIDS, 30.8% thought AIDS could be cured, and 46.8% believed that a healthy diet could prevent infection. Only 57% possessed comprehensive knowledge on the subject, and stigma was prevalent, with 80.2% viewing HIV as a condition exclusive to high-risk groups. Risky injection practices were common, with 68.3% reusing needles, 69.7% sharing them, and 83.8% employing ineffective cleaning methods. Unsafe sexual practices further heightened the risk of HIV, as indicated by low condom usage

(28%) and engagement in transactional sex (20.3%). Perceptions of risk varied, with 35.4% underestimating their vulnerability, emphasizing the requirement for focused educational and behavioural programmes.

Recommendations

The findings emphasise the need for culturally tailored interventions to mitigate the dual risks of unsafe injection practices and risky sexual behaviours among IDUs in Kashmir. Effective harm reduction measures, such as needle exchange programmes, community outreach, and peer education, have demonstrated success in similar contexts. Capitalising on the strong family structures observed in this population may enhance the effectiveness of these interventions by providing additional support for behaviour change and rehabilitation.

Limitations

The cross-sectional design restricts the ability to determine causal relationships between knowledge of HIV, behaviours, and practices. The reliance on participant-reported data introduces potential for bias.

Acknowledgement

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Understanding characteristics and factors associated with injecting drug use among youth in Manipur: A qualitative study

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Introduction and rationale

Injecting drug use is a major global public health problem. It is associated with many infectious diseases like HIV, Hepatitis B and C. Globally 13.2 million people were injecting drugs in 2021, according to UNODC World drug report 2023 (1). In India, an estimated number of 177,000 adults are injecting drug users (IDUs) (2). According to the Behaviour Surveillance Survey-Lite 2020, it was reported that 23.9% IDUs were below 25 years (3).

HIV prevalence among IDUs in Manipur is 8.8% (2020-22) according to HIV sentinel surveillance report. There has been a steady decline of HIV prevalence among IDUs in Manipur from 1994 (55.7%) to 2020-21 (8.8%) (4). Other than HIV, HCV seems to be a problem. According to a study by RS Karam et al in 2018, it was found that the prevalence of HCV among IDUs in Manipur was 43% (5). Despite the harm reduction strategies, epidemics of HIV and other blood-borne problems among IDUs still persist.

To have a deeper and better understanding of the characteristics of initiation of injecting drug use and their risk behaviour in injecting, a qualitative study was conducted as to provide information to further develop or improve the existing preventive, treatment and control strategies for IDUs.

Objectives

- To explore the characteristics of youths who are injecting drug users
- To explore the facilitators and barriers leading to initiation and stopping of injecting drugs among youths
- To explore the barriers and challenges faced by the youths in the uptake of TI services
- To explore the gaps and challenges in providing TI services

Methodology

A qualitative method was adopted. The study was conducted from July 2024 to December 2024 in the two valley districts Imphal East and Imphal West. The snowball sampling method was used to recruit IDUs. Thirty IDUs in the age group 15-29 years, who were not registered in any TI centre, were interviewed 15 each from Imphal East and Imphal West district respectively. For TI managers, there are a total of twenty-one (21) TI programme managers in both Imphal East and Imphal West, out of which 5 were selected using a purposive sampling method (3 from Imphal East, 2 from Imphal West). The in-depth interviews (IDIs) were conducted by field investigators who were trained in qualitative research methods. The duration of the IDI was about 30–40 minutes. Before initiating the IDI, the participants were explained about the purpose of the study in Manipuri. The procedures (including audio recording of the IDI) were explained and a written informed consent (in the language they are able to understand) was taken before starting the IDI.

The audio recordings of the IDIs were transcribed into Manipuri language, then translated into English and back translation to Manipuri. Thematic analysis of the translated data was done. First, specific ideas were coded

separately, inter-related or similar codes were grouped into categories. Summarisation of the codes was done and interpreted into suitable categories and thus a final conclusion was obtained. Ethical clearance was taken from Institutional Ethics Committee, JNIMS, before conducting the study. Informed written consent was taken from all the eligible participants. Assent was taken from participants below 18 years of age as well as written consent from the guardians or Legally Authorised Representative. Prior permission was taken for the audio recording of the interviews. Assurance was given that confidentiality would be strictly maintained.

Findings

The mean age of the IDUs was 21.17+2.914 years. Majority (86.7%) of them were unmarried. Around 30% of them were 12th standard, which was followed by 10th standard (23.3%). A maximum, 33.3% of them were daily wage earners, followed by students (30%) and the unemployed being 23.3%. Sources of money for drug use were mainly from family members (24), salary/wages (15), friends (9), stealing (6), and selling belongings (5). Among drugs/polydrugs currently used, Heroine was the most used drug (19), followed by alprazolam (16), Valium/Diazepam (10), Tramazac (9), Ganja (6), World is Yours (Methamphetamine and Caffeine) (5). Mean age of initiation of any drug use was 15.4+2.762 years, with the mean age of initiation of injecting drug use for the first time being 17.2+3.112 years. Friends were involved in initiating injecting drug use among the majority (83.4%) while 3.3% of them were initiated by relatives.

Syringes and needles were procured from the pharmacy, friends, a peddler and a paan shop. Only 20% of the IDUs did not share or reuse the needle syringe. Though all of them heard of HIV, Hepatitis B and C; 33.3% of them never tested for it. Around 20% of the IDUs verbally reported they were Hepatitis C positive, 3.3 % HIV positive and 36.7% were of unknown status. Majority, 63.3% of them had never heard about Targeted Interventions (TI).

Thematic analysis of in-depth interviews of IDUs

A. Facilitators of initiating injecting drug use among the youth

The main facilitators for starting or initiating injecting drug use were curiosity and influence from others like friends and brothers who are injecting drug users, depression and injecting being more effective and cheaper.

B. Barrier preventing drug user from stopping of injecting drug use

The IDUs were unable to stop injecting drugs as most of them were unable to avoid the urge to take drugs. They also feared the withdrawal symptoms and also used it as a means to gain confidence. Some reported that most of their friends were active users and resisting the temptation was difficult when surrounded by them. Lack of family support and social issues like discrimination, financial problems were other factors.

C. Barriers and challenges faced by youth in uptake of TI services

The majority of the IDUs didn't have any idea about TI and its services. Among those who knew, many of them were ashamed of going to the TI centre. They fear that family members and local people might know that they were taking drugs; they were also afraid that people would not treat them properly. It was also felt that TI service was not necessary.

D. Feedback by the youth to improve access to TI services

The IDUs wanted some form of awareness programme on TI services and on discrimination against people with HIV, Hepatitis, injecting drug users, on different platforms including social media; also to pharmacists on syringe provision to IDUs. They also wanted to be counselled about treatment when giving syringes, opioid substitution therapy. They wanted blood tests like HIV and treatment facilities to be available in TI centres and homes; home delivery of syringes and 24x7 service within 1 km of hotspot areas. The youth also wanted recruitment of TI staffs from among those recovered from drug addiction, as they presumed counselling would be better due to their experience.

Thematic analysis of in-depth interviews of TI Programme managers

A. Facilitators leading to initiation of injecting drugs among youths

TI managers cited drug addict partner, parents being drug users, easy availability and accessibility of the drugs, getting money easily from parents, influence of friends.

B. Barriers preventing drug users from stopping use

According to the TI managers, main barriers preventing drug users from stopping drug use were fear of withdrawal symptoms, lack of family support i.e., distrust and disbelief by the family members even after they stop using drug, to combat stress/family problems and also pressure from friends.

C. Challenges faced by the youths in uptake of TI services

Some of the challenges faced by the youth in uptake of TI services were fear by young drug users of abuse by TI staff, no knowledge about TI, not wanting counselling or coming to TI for syringes. Fear of the anti-drug organisation and fear of getting exposed to friends and family members by the TI staff.

D. Gaps and challenges faced in providing TI services

Among challenges faced in running TI services, finance was one of the main reasons. Lack of human resources, unstable law and order situation, need for rehabilitation facility, nutritional support, health check-up, free medicine, and lack of community participation were other challenges cited. Non-acceptance by society as people feel they are promoting IDUs by supplying syringes, was another challenge.

Conclusion

In this study, it was found that the facilitators for initiating injecting drug use were mainly due to curiosity, peer pressure and getting a higher kick at lower cost. These factors were also cited by the TI manager, including others like a drug addict partner/parents, easy access to drugs. Fear of withdrawal symptoms, peer pressure and lack of family support were the major barriers preventing drug users from quitting. More than half of the IDUs were not aware of the targeted intervention services. Among those who have heard about TI, they hesitate to go to the TI centre because of fear of being identified as drug user. Major challenges faced by TI managers in providing TI services included lack of resources and lack of community participation.

Recommendations

- Inclusion in the curriculum or conducting awareness programmes in schools by NACO
- Setting up of needle syringe vending machine in hotspot areas
- Need for awareness regarding the TI services among the IDUs
- Effective treatment of withdrawal symptoms and proper counselling to be made available for those wanting to quit drug use
- Counselling of not only the IDUs but also of the family members is required
- Recruiting past IDUs in TI centres for education and counselling services to the IDUs
- Setting up of TI and OST centres in far flung areas

Limitations

Female IDUs could not be included in the study.

Acknowledgement

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Knowledge, attitude and practices regarding HIV/AIDS, injecting drugs and sexual practices among truckers and allied population in East Jaiñtia Hills of Meghalaya

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Introduction and rationale

Human Immunodeficiency Virus (HIV) is an infection that attacks the body's immune system. Acquired Immuno Deficiency Syndrome (AIDS) is the most advanced stage of the disease (1). A CD4 count below 200 indicates AIDS, increasing susceptibility to infections and cancers (2, 3). Globally, 39 million people live with HIV, with India having the second-largest epidemic (4, 5). North-East India, including Meghalaya, faces alarming trends, particularly among high-risk groups such as injecting drug users. Truckers, due to high-risk behaviours, are a key population in HIV transmission (6).

Objectives

- To assess the knowledge, attitude and practices regarding HIV/AIDS and injecting drugs among truckers and allied population
- To examine the knowledge, attitude and sexual practices among truckers and allied population

Methodology

A cross-sectional study was conducted among East Jaiñtia Hills District, Meghalaya, a high HIV prevalent district. A total of 350 commercial drivers including truckers and their helpers residing in Meghalaya or those who have come from outside Meghalaya for the purpose of transporting goods were included in the study using systematic random sampling, where every third participant was approached.

Commercial driver was defined as a commercial vehicle driver who does this on daily basis and earns livelihood through it. Private vehicle drivers were excluded from the study.

Since the study population was a floating population, it was important to identify areas where such participants were found. Prior to data collection, the research team conducted a transect walk and were able to identify areas which had high concentration of trucks and commercial vehicles.

Data was collected through structured interviews using a validated questionnaire. After every interview, IEC materials on HIV/AIDS were provided to each participant.

The data was analysed using MS excel and descriptive analysis was also adopted to describe the socio demographic information of the respondents. To analyse the Knowledge, Attitude, and Practices with regard to HIV/AIDS, a scoring technique was adopted, and the scores were categorised between low, medium and high. The 'Knowledge section' consisted of 25 questions. Each correct response was attained a score of 1. Total scores ranging from 0 to 10, 11 to 15, and 16 to 25 denoted low, medium and high level of knowledge respectively. The 'Attitude section' had 14 statements on a five-point Likert scale ranging from strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree, with 1,2,3,4, and 5 scores accordingly. An average of the scores was calculated, where participants averaging between 1 and 2 were considered negative attitude, 3 was considered neutral attitude, and 4 and 5 were considered as positive attitude. The 'Practice scale' consisted of 8 questions. Out of 8 questions only 6 questions were calculated since the last two questions

were applicable for only one participant. Total score of practices was between 0-6, where a score of 0 to 2 were considered as low risk, 3 was considered as medium risk, and 4 to 6 were considered as high risk.

This study was approved by the Institutional Ethics Committee of the Indian Institute of Public Health Shillong.

Findings

A total of 350 participants were interviewed, with a mean age of 30 years (SD±9). Most were married and had no formal education. Of the participants, 51% were commercial drivers, and 33% were truckers. Most respondents were from Meghalaya, with 68% from the Pnar tribe. Details of the socio demographic profile is given in Table 1.

Table 1 Socio-demographic profile of respondents (n=350)

Characteristics	Frequency	Percentage
1. Age Group		
18-25	98	28.0%
26-33	143	40.9%
34-41	61	17.4%
42-49	29	8.3%
50-65	19	5.4%
2. Religion		
Christian	242	69%
Hindu	41	12%
Muslim	36	10%
Others	31	9%
3. Marital Status		
Ever Married	262	75%
Never married	88	25%
4. Educational Qualification		
No Formal Education	231	66%
Primary	69	20%
Secondary or Higher	50	14%
5. Type of Respondents/ Occupation status		
Commercial Driver	180	51%
Helper of Commercial driver	3	1%
Trucker	115	33%
Helper of trucker	52	15%
6. Duration of work as Commercial Driver/Helper of Commercial driver/ Trucker/ Helper of trucker		
Below 1 year	17	5%
1 to 5	138	39%
6 to 10	115	33%
>10	80	23%
7. No. of days in a month that they are staying at their residence		
Once after 3 to 6 months	6	1.7%
Once a month	24	6.9%
Twice a month	65	18.6%
Four days a month	15	4.3%
Seven days in a month	27	7.6%
More than ten days a month	24	6.9%
Everyday	189	54.0%

Level of knowledge about HIV/AIDS

Although 78% had heard of HIV/AIDS, only 9.43% had accurate knowledge. Comprehensive knowledge included incorrect beliefs about transmission through needles, mother-to-child transmission, mosquito bites, and shared food. Only 1% knew of an HIV helpline, and 84% had never tested for HIV. More than one third participants (143) were aged between 26-33 years, and about 43% who had no formal education had low knowledge about HIV/AIDS. Both truckers, helper of truckers and helper of commercial drivers were observed to have low knowledge about the disease, with 39% of participants for the trucker and 52% for the helper. The details of the level of knowledge in association with the demographic variables is given in Table 2.

Table 2 Level of knowledge about HIV/AIDS in association with socio-demographic profile of participants (n=350)

Age group (in years):	Low	Medium	High	Total
18-25	32 (33%)	62 (63%)	4 (4%)	98 (100%)
26-33	39 (27%)	88 (62%)	16 (11%)	143 (100%)
34-41	21 (34%)	32 (53%)	8 (13%)	61 (100%)
42-49	11 (38%)	16 (55%)	2 (7%)	29 (100%)
50-65	9 (47%)	7 (37%)	3 (16%)	19 (100%)
Religion	Low	Medium	High	Total
Christian	62 (26%)	156 (64%)	24 (10%)	242 (100%)
Hindu	18 (44%)	19 (46%)	4 (10%)	41 (100%)
Muslim	18 (50%)	15 (42%)	3 (8%)	36 (100%)
Others	14 (45%)	15 (48%)	2 (7%)	31 (100%)
Educational qualification	Low	Medium	High	Total
No formal school	98 (43%)	123 (53%)	10 (4%)	231 (100%)
Primary	8 (12%)	55 (80%)	6 (8%)	69 (100%)
Secondary or higher	6 (12%)	27 (54%)	17 (34%)	50 (100%)
Type of participants	Low	Medium	High	Total
Commercial driver	38 (21%)	123 (68%)	19 (11%)	180 (100%)
Helper of commercial driver	2 (67%)	1 (33%)	0 (0%)	3 (100%)
Helper of trucker	27 (52%)	20 (38%)	5 (10%)	52 (100%)
Trucker	45 (39%)	61 (53%)	9 (8%)	115 (100%)

Attitude about HIV/AIDS among commercial drivers

When asked about being afraid of catching HIV from casual contact, like hugging or shaking hands, 54% of the respondents neither agreed nor disagree, 52% did not know whether to allow or prohibit a person living with HIV from working in public places, 56% would not agree nor disagree to be in the same room with a person infected with HIV, 52% did not know whether to be-friend or avoid a friend infected with HIV. Surprisingly 66% of the study population said that people with HIV/AIDS should avoid being around other people, and they think that being around someone with HIV/AIDS would worry them.

However, in terms of their attitudes toward HIV positive persons, more than half (54%) agreed that people with HIV should not be looked down by others and 77% believed that infected person should not be deprived of any health care services. Another 77% participants' claim that they would not be afraid to care for family members with HIV/AIDS, and 76% agreed that people with HIV/AIDS should reveal their status to their family members or their near ones. About 15.7% and 5.4% of commercial drivers and truckers respectively had positive attitude towards HIV/AIDS.

Attitude towards sexual practices and injecting drug use

While assessing the practice of the study population regarding sexual activity and injecting drugs, it was found that 97% participants have a safe lifestyle. Only 3% of the participants have come in contact with people living with HIV/AIDS. Not a single participant has ever injected drugs nor shared needles with an infected person.

From 350 participants, 268 (77%) have ever had sex, and out of 268 only 59 (22%) uses condom while engaging in a sexual intercourse, and only 3 (1%) have had sex with a commercial sex worker. Only 1 participant was engaged in high-risk practices, such as having multiple sexual partners and engaging in unprotected sexual practices.

Conclusion

The knowledge about HIV/AIDS is very low in the study population. Most participants were unsure about the transmission modes and preventive measures with regard to the disease, which may often lead to unsafe practices. Therefore, constant effort is required to educate and sensitise truck drivers, their helpers, commercial drivers and their helpers. Although unsafe sexual practices and injecting drug use did not emerge as being very significant in this study, yet sensitisation regarding safe sexual practices and risks of injecting drug use can be strengthened.

Knowledge, attitudes and practices (KAPs) regarding HIV/AIDS serve as the cornerstone in the fight against HIV/AIDS. Proper education and adequate knowledge regarding HIV/AIDS are a powerful way to prevent the spread of the disease and of promoting positive attitudes as well as engaging in safe practices.

Recommendations

Sustained sensitisation on HIV/AIDS needs to be done among commercial drivers, truckers and their helpers. Commercial drivers and helper's unions can play an effective role in enhancing the awareness on HIV/AIDS and increase testing rates for HIV. Moreover, use of digital platforms can be explored as one third of the participants received information about HIV from digital platforms. The Village Health Councils have been established in Meghalaya with the purpose of initiating community action for health. MACS can work along with the VHCs to enhance the sensitization efforts at the community level.

Acknowledgement

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Effect of adverse childhood experiences on drug use behaviour among People Who Inject Drugs in Mizoram

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Introduction and rationale

Mizoram is one of the Indian states most susceptible to the issue and burden of illegal drug use and abuse due to its extensive international borders. Since the entry of heroin in Mizoram in the 1980s, injecting drug use has become a serious concern in the state especially among the youth (1), significantly contributing to the spread of HIV and other social and health problems.

Sarkar identified psychological causes as one of the main reasons for drug abuse in Mizoram (2). Current interventions primarily focus on behavioural aspects and harm reduction strategies, with limited attention to underlying causes. One critical area requiring more focus is adverse childhood experiences (ACEs), which include abuse, neglect, household substance use, and other forms of family dysfunction. Studies from other regions have shown a strong association between ACEs and an increased risk of developing substance use disorders, early initiation of drug use and greater severity of substance use problem (3, 4, 5). The persistence of drug use in Mizoram suggests a need to explore deeper psychological and developmental causes and this study seeks to examine the early life experiences of People Who Inject Drugs (PWID), focusing on the role of ACEs in shaping drug use behaviour.

Objectives

The present study aims to understand the effect of Adverse Childhood Experiences (ACEs) on drug use behaviour among PWID in Mizoram.

Methodology

This study was conducted among 370 Mizo male PWID across five districts in Mizoram – Aizawl (n=207), Champhai (n=32), Kolasib (n=44), Lunglei (n=51), and Mamit (n=36). The participants were between the age of 18 and 55 years and they were selected using the probability sampling method.

Data was collected at Targeted Intervention (TI) centers. A structured questionnaire was used to assess the level of childhood trauma and drug use among the participants. Childhood trauma was assessed using The Adverse Childhood Experiences Questionnaire (Felitte et al., 1998) and level of drug use was assessed using Drug Abuse Screening Test (Skinner, 1982). In addition, socio demographic information was collected. Informed consent was taken from all participants and confidentiality maintained. Ethical approval was sought from Zoram Medical College, Aizawl, Mizoram.

Data was analysed using SPSS and since it did not meet the assumptions for parametric test, non-parametric statistics was used for the analysis. Spearman's correlation analysis was done to assess the relationship between ACEs and Level of Drug Use (DAST). Kruskal Wallis test was also used to analyse mean rank differences in drug

use based on level of exposure to adverse childhood experiences. Reliability of the scales used was assessed using Cronbach's alpha and was found to be reliable for use in the present population. The ACEs Questionnaire and DAST have a reliability of 0.74 and 0.72 respectively.

Findings

Socio-demographic profile: The majority of participants were single (46.2%) and lived with their families (89.7%), with most of their parents being married (72.4%). The average household income was Rs. 31,079.19/-, and 38.9% reported having at least one immediate family member who used substances such as hard liquor, illicit or prescription drug, smoking marijuana. In terms of education, most had studied up to Secondary (37.8%) or Higher Secondary School (35.4%) and the most common occupations were daily labourers (41.6%) and the unemployed (25.1%).

The average age of first drug use was 20.89 years, ranging from 11 to 42 years. Nearly all participants (91.9%) had used drugs in the past three months. Among them, 59.4% used drugs multiple times a day, 20.9% used 1–4 times a month, 8.8% used multiple times a week, 7.6% had not used in the past one month, and 3.2% did not disclose their frequency of use.

Prevalence of ACEs and drug use: Among the participants, 78.9% had experienced some form of ACEs, with 32.4% reported at mild level, 24.6% at moderate, and 21.9% at severe levels. Only 21.1% reported no exposure. Regarding drug use, over half (51.6%) of the participants were in the severe category, followed by 38.1% in the substantial, 10% in the intermediate, and 0.3% in the low level.

Table 1 Level of ACEs and DAST

		Frequency	Percent
ACEs	No exposure	78	21.1
	Mild	120	32.4
	Moderate	91	24.6
	Severe	81	21.9
DAST	No drug use	0	0
	Low	1	0.3
	Intermediate	37	10.0
	Substantial	141	38.1
	Severe	191	51.6

Note: ACEs = Adverse Childhood experiences, DAST = Drug Abuse Screening Test

Relationship between ACEs and Drug use: Among the participants, there was a positive correlation between ACEs and level of drug use. This indicates that higher the experience of adverse childhood experiences, higher the level of drug use and vice versa.

Table 2 Spearman's Coefficient of Correlation between ACEs and DAST

	ACEs	DAST
ACEs	1	1.9**
DAST	1.9**	1

***p<.01; * p<.05 Note: ACEs= Adverse Childhood experiences; DAST= Drug Abuse Screening Test*

Effect of ACEs on Drug use behaviour: Exposure to ACEs significantly influences drug use behaviour, impacting both the severity of drug use (DAST) and the age of initiation. As shown in Table 3.2, individuals with higher exposure to ACEs tend to begin using drugs at a younger age and exhibit more severe use patterns. This suggests that childhood trauma may increase psychological distress, leading to early initiation and more severe patterns of drug use over time.

Table 3.1 Kruskal Wallis Test in Drug Use Behaviour

	Drug Abuse Screening Test	Frequency of drug use	Age at first drug use
Kruskal-Wallis H	18.81	5.11	12.15
df	3	3	3
Asymp. Sig.	.000	.164	.007
a. Kruskal Wallis Test			
b. Grouping Variable: ACEs			

Table 3.2. Mean Ranks of Drug Use Behaviour based on levels of Adverse Childhood Experiences (ACEs)

	ACEs	N	Mean Rank
DAST	No exposure	78	157.17
	Mild	120	174.97
	Moderate	91	187.06
	Severe	81	226.62
Frequency of drug use	No exposure	78	177.28
	Mild	120	181.96
	Moderate	91	176.96
	Severe	81	208.25
Age at first drug use	No exposure	77	203.22
	Mild	119	200.72
	Moderate	91	168.07
	Severe	80	158.75

Note: ACEs = Adverse Childhood experiences, DAST = Drug Abuse Screening Test

Conclusion

This study highlights the significant impact of adverse childhood experiences on drug use behaviour among male PWID in Mizoram. Experiencing trauma or adverse experiences during childhood significantly increases the risk of developing substance use disorder and early onset of substance use. Over 70% reported experiencing ACEs, and nearly half had severe drug use levels. This emphasises the importance of early intervention and support system to address childhood trauma, which may help prevent the initiation of substance use.

Recommendations

Early intervention programmes should focus on building emotional resilience in children and strengthening family support systems. Awareness on the impact of adverse childhood experiences and positive parenting should be promoted among young and middle-aged adults. Efforts should also be made to identify and support vulnerable youth to prevent early drug initiation and reduce long-term substance use risks.

Limitations

The study includes only Male PWID which limits the generalisability of the finding. Different genders of PWID might face different social, psychological or health-related issues which may not be reflected in this study. Future research should include diverse gender representations and uses both qualitative and quantitative methods to provide a more comprehensive understanding of the issues affecting all PWID.

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Use of sunflower drug among new young Injecting Drug Users in Kohima district in Nagaland

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Introduction and rationale

There is an increase recognition of the concern about the sunflower drug abuse among the young new IDUs in Nagaland particularly in Kohima District (1). But there is limited knowledge about how to help or where to begin to extend support to those already into sunflower drug addiction. This study aimed to gain a better understanding about the sunflower drug abuse amongst the young new IDUs who are already abusing the sunflower drug with the aim of creating awareness among the people of Nagaland and particularly in Kohima District.

Sunflower, also known as 'SF', is the most common drug used by youngsters in Nagaland, with its entry into the state before the COVID-19 pandemic. It initially attracted "old timers" before permeating a younger demographic (2). Sunflower drug use among young new Injecting Drug Users (IDUs) is increasing despite efforts by educators and health workers to educate about its harmful effects. The subtle nature of the drug makes it difficult for parents and educators to control its use. The most vulnerable group is new IDUs, as there are no proper rules or control systems in place. Research on Sunflower drug abuse in Kohima District, Nagaland, is at its early stage.

Objectives

- To identify the causes of use of Sunflower Drug among the new young Injecting Drug Users
- To identify the aftereffects of Sunflower drug among new young Injecting Drug users

Methodology

This study was focused on the issues of the use of Sunflower drug amongst the new young Injecting Drug Users in Kohima District, Nagaland. Hence, a mixed method study of sample design with an open, flexible and unstructured interview guides was used to collect the primary data on the emerging use of Sunflower drug amongst the young IDUs between the age of 18- 25 years.

The study collected 28 samples from 105 young IDUs in Kohima, representing approximately 26.6% of the total population using the purposive sampling method. This sample size, which represents over 25% of the total population of young IDUs with SF users registered in TI who were within the limit age of the study at the time of data collection, provided a robust basis for analysis despite the reduced sample size.

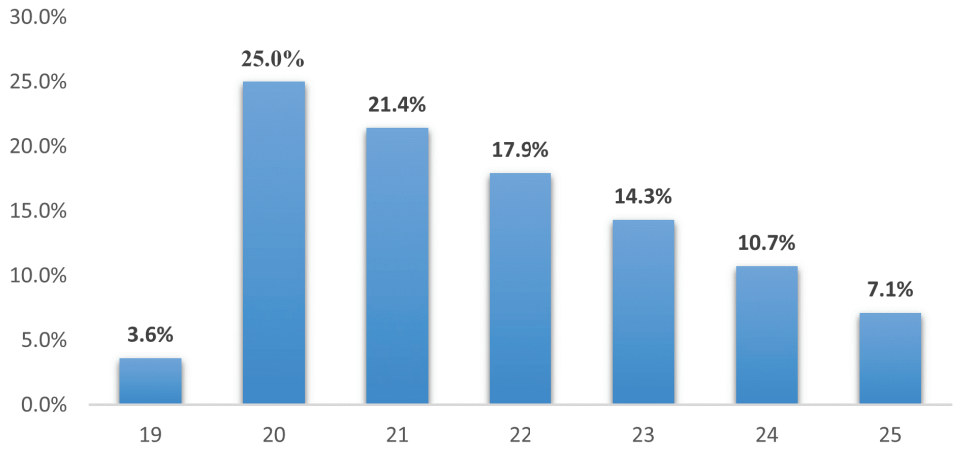
The study team approached TI/NGOs staff to recruit Sunflower drug users, maintaining anonymity. Quantitative data was processed using MS Office, with charts and tables presented. Interviews were conducted using the interview guide, focusing on socio-demographic profile, knowledge, perception, reasons for use, and suggestions for demand reduction.

Ethical approvals were sought from Ethical Review Board, St. Joseph's College (Autonomous) Jakhama. Prior to collection of the Data, the required consents were obtained from both the institutional heads as well as from the participants. Assurance was given that the data collected would be sorely for the research required by the Department of Health and Family Welfare, Government of Nagaland.

Findings

The study found that participants were predominantly male, with 28.6% aged 20 years and 21.4% aged 22 years. However, only one female participant was represented.

Figure 1 Age-wise distribution of respondents (n=28)



The study revealed that most participants have reached Class 12 (39.3%), followed by Class 10 (21.4%), Class 11 (17.9%), and the least were graduates (7.1%). However, many have dropped out or discontinued their studies.

The study found that most participants in age of 19 years (57.1%) and 20 years (17.9%) began using sunflower drug, highlighting the risk of teenage use, which can lead to health issues in adulthood or later life stages. The frequency of sunflower drug use varied, with the majority using it three times a day (50%). Consumption habits depended on financial resources and drug accessibility, with few taking it in the morning and evening.

The study revealed that family dynamics also influenced the users' behaviour, with parents and siblings potentially influencing their use of the sunflower drug. Sunflower drug users were influenced by their circle of friends, peer pressure, curiosity, pride, and social validation. Most (85.7%) were introduced to the drug through social gatherings, parties, or picnics.

The study also revealed that many users of the sunflower drug had limited knowledge about the drug itself. Sunflower drug, a powdered substance, is available in various colours, with the most common variety in Kohima being a mixture of orange and white. The drug is supplied by individual, financially wealthy suppliers and local distributors. Users in the study revealed that they have distributed the drug to acquaintances and friends.

The participants of the study revealed that there are three different ways in which the sunflower drug is consumed – inhalation (82.1%), mixed with warm water to drink (68.9%), injecting mixed with water (32.1%) and finally injecting mixed with blood (7.1%). This Sunflower drug is smuggled into Kohima via various routes, including Manipur, Dimapur, Wokha, Meluri, and Noklak.

The sunflower drug addiction had severe physical and mental consequences. Many users, who relied on their families for financial support, had resorted to theft to obtain money for the drug. They had dropped out of school or discontinued their studies due to their addiction. Family and societal influences also contributed to the development of the addiction. The impact of the drug on individuals' well-being and future prospects was significant, as it affected not only their physical and mental well-being but also their family and society as a whole. Interviews revealed frustration and hopelessness among sunflower drug users, who often failed to break free from their addiction, turning to TI/NGOs or other centres for help.

Conclusion

This study reveals the widespread presence of sunflower drug in Kohima. It is illegally obtained through cashless marketing and is concealed in various locations. The drug's frequency ranges from once a day to over four times a day, with most users using it three times a day. Users use the drug in various ways, including

inhalation, drinking, and injection. Reasons for using the drug include low cost, higher potency, and odourless, peer pressure, and the desire to fit into a group are significant factors besides its euphoretic experience for its use. To combat the spread of sunflower drug abuse requires collective action and cooperation from all members, focusing on fostering strong family values and positive peer relationships.

Recommendations

- Robust awareness programmes and seminars at educational or religious institutions targeted at the young, youths and families is imperative.
- With the involvement of the law enforcement personnel in the supply and use of the sunflower drug, it is imperative to conduct awareness sessions for these agencies.
- The Government or the concerned agency may need to devise an intelligent and robust system of identifying or detecting the transport of drugs that are freely flow to Kohima.
- Low-cost treatment facility or support mechanism like TI or OST can be expanded so that it is accessible to all levels of society.

Limitations

This study attempted to interview the female users of the sunflower drug, but due to their unwillingness and apprehension from participating, the researchers were unable to collect the equal data from both the genders especially from five female users.

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BASIC SERVICES

A mixed method study on barriers to HIV testing among partners of newly registered PLHIV at ART centre, Rajkot, Gujarat

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Introduction and rationale

HIV remains a major public health concern globally and in India, with significant morbidity and mortality despite widespread efforts. India reported 41,970 AIDS-related deaths in 2021, and NACO has implemented the 'Test and Treat' policy to ensure timely ART initiation (1). While ART registration and initiation rates are high in Gujarat, partner testing rates remain suboptimal, with only 45–50% reported at the Rajkot ART Centre. Barriers to HIV partner testing include stigma, fear of disclosure, gender dynamics, social discrimination, psychological concerns, and logistical challenges. NACO emphasises testing of all sexual partners and biological children of PLHIVs, but implementation gaps persist (2). This mixed-method study explores these barriers among newly registered PLHIV in Rajkot to understand why partners remain untested despite risk exposure. The findings aim to guide strategies for increasing partner testing, early diagnosis, and treatment, ultimately improving quality of life and limiting HIV transmission (3).

Objectives

- To determine barriers to HIV testing among partners of newly diagnosed PLHIV at the Rajkot ART Centre
- To estimate the proportion of partners not tested
- To assess awareness about HIV testing among PLHIV

Methodology

A mixed-method, cross-sectional study was conducted at the ART Centre of PDU Government Hospital, Rajkot. Forty newly diagnosed PLHIV were enrolled using take all strategy.

Quantitative data was collected using pre-tested semi structured questionnaire. All PLHIV registered at ART during months of October and November 2023 were interviewed for their own profile and they were also interviewed using predesigned semi structure questionnaire for their sexual partners and biological children. Seventy-two Index cases included all sexual partners (35 marital, 13 extra-marital) and 24 biological children.

Qualitative data were collected through 13 in-depth interviews (IDIs) of index cases of PLHIV registered during October-November 2023 while attending ART centre. As a part of qualitative research 7 key informant interviews (KIIs) with stake holders and service providers like medical officers of ART centre, ART counsellors, DAPCU, and TI project staff were conducted.

Quantitative data were analysed using Jamovi and Epi Info 7.2.5. Chi-square test determined statistical significance ($p<0.05$). Thematic analysis using open, axial, and selective coding was applied.

Ethics approval was obtained from Institutional Ethics Committee of PDU Medical College, Rajkot.

Findings

Quantitative analysis

It was found that 67.5% of PLHIV registered at ART centre during study period were male. Mean age of the PLHIV 42.6 years. Out of all PLHIV, 82.5% were having one or other type of high-risk behaviour. Among people having high risk behaviour, 27 (81.5%) were having heterosexual relationship with more than one partners, and five (15%) were MSM. Three cases (9%) had history of blood transfusion.

A total of 33 out of 40 participants (82.5%) declared their HIV positive status. Out of those who declared HIV positive status, 22 (66.7%) declared it to their spouse, followed by 16 (48.5%) who declared it to other family members.

Among the participants who did not disclose their status, four out of seven (57.1%) were fearful about social rejection. Same number of the people were found fearful about their marriage break-up. Two participants (28.6%) needed some more time to disclose the matter.

Table 1 Profile of HIV status disclosure and reasons for non-disclosure among newly registered PLHIV cases and reasons for non-disclosure

Indicators	n (%)
Disclosure status (n=40)	
Yes	33 (82.5)
No	7 (17.5)
HIV positive status disclosed to whom? (Multiple answers allowed)	
Spouse	22 (66.7)
Family members (other than spouse)	16 (48.5)
Others (e.g., Friends, colleagues)	1 (3%)
Reasons for non-disclosure (multiple answers allowed)	
Fear of marriage break-up	4 (57.1)
Fear of social rejection	4 (57.1)
Need some time to disclose	2 (28.6)
Feeling no need of disclosure	1 (14.3)
Living alone	1 (14.3)

On asking their opinion about index case testing, PLHIV cases of 45 (65.3%) index cases clearly replied that their index cases should also be tested for HIV infection, while 7 (9.7%) denied the need of any such testing. However, PLHIVs of 18 (25%) index cases couldn't answer as yes or no to this question. Study showed spouse testing rate of 65.6%; children testing rate of 37% whereas none of the non-marital partners were tested for HIV.

Index cases out of those who were tested 13 (43.3%) were tested positive and 17 (56.7%) tested negative for HIV infection. On chi square test significant associations found with partner's opinion on testing (p=0.0004), and type of partner (p=0.0185).

As per the opinion of PLHIVs about influencing factors and barriers for HIV testing among index clients, it was found that medical advice by counsellor, doctor or other medical professionals remained the major influencing factor encouraging 27 (90%) index cases to be tested. Social factors remained on top as hurdle factor restricting 14 (33.3%) index cases from being tested for HIV infection. Out of total non-tested subjects 13 (31%) index cases were not tested because they didn't feel need for such testing.

Qualitative

Based on analysis of the in-depth interviews and key informant interviews, six major themes emerged such as patient's perspective, spouse perspective, protective behaviour towards children, perspective towards non-spousal partner, system related barriers and socio-cultural factors.

It was reported that the fear of social rejection and stigma in the society was considered as a major reason for non-disclosure to family and other people. One of the medical officers mentioned that *"In majority cases, reason for not declaring is the fear of society and family, Patients fear that if my partner come to know my status, he / she will get separated from me. They fear getting social problems like people think that this is transmitted by sex only, nobody thinks there are other roots too. Patients fear that if my name is disclosed that people will see him with that way only. Society will think he has done some wrong things. Patients often fears for societal reactions and rejections."*

It was also observed that autonomy of decisions lied with the Male partner and female could not decide to get herself tested without the male partner's permission. If the male partner was HIV positive, the female was likely to suppress and not tell anyone. A nodal officer at ART centre mentioned that *"In majority cases, partners rarely resist for testing, but our social system is like that if female comes positive, then she has no right to decide for her partners testing. If wife comes positive and her husband needed to test, then lot of counselling sessions are required. Even then, in our male dominance system, especially in rural area, male resist for testing."*

Denial despite disclosure was also a factor found as a barrier from the perspective of spouse.

Parents were concerned about their children and fear of their future was one of the barriers towards non-testing of children of HIV positive parents. A counsellor stated that *"parents fear that what if our child comes positive? Their life will be finished. His future will be dark and unpredictable. So, they don't test them"*.

Based on the findings of the quantitative and qualitative data, overall acceptance of testing among partners and children of PLHIV patients was observed to be low.

Conclusion

Partner and children testing rates among newly registered PLHIV remain suboptimal in Rajkot. Fear of stigma, lack of awareness, emotional and economic constraints, and systemic inefficiencies are significant barriers. Notably, none of non-marital partners were tested. Triangulating qualitative insights with quantitative analysis reveals a complex web of personal, social, and structural factors affecting HIV partner testing uptake. PLHIV were in fear of child's future consequences if they come positive. Acceptance of testing among partners and children of PLHIV patients was low. Both individual and KII interviews have similar findings of barriers to test among PLHIV parent's children.

Recommendations

- Strengthen community education to reduce the stigma related to HIV
- Repeated counselling to encourage HIV status disclosure and benefits of partner testing for early initiation of ART to improve quality of life
- Introduction of partner tracing and anonymous notification systems, so that index case testing rate may be increased among non-marital sexual partners
- Incentivise and support partner testing at ART centres. Performance based incentives to counsellor may be included in strategy to motivate and encourage counsellors for index case testing
- Deploy additional staff with focused training for partner tracing and counselling activity
- Share success stories among PLHIV networks to motivate testing
- Improve counsellor-client communication and follow-up systems

Limitations

In this study, perspectives of the partners were inferred from PLHIV and not directly captured.

Acknowledgement

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To assess the awareness level among rural communities for HIV screening and prevention in Himachal Pradesh

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Introduction and rationale

HIV/AIDS epidemic in India has a high degree of heterogeneity that regulates the dynamics of population transmission and epidemiological burden of the disease. HIV risk is a function that combines adverse social determinants driving existing high-risk behaviour and poor awareness (1, 2).

Public awareness of HIV/AIDS should be the cornerstone of managing the AIDS epidemic in absence of curative treatment or vaccination. Previous studies have suggested that lack of accurate and complete knowledge of HIV, especially on the modes of the infection transmission, is a major driver of incident HIV infections. However, since knowledge alone cannot suffice to prevent infection, it must be accompanied by practice in order to achieve the desired results (3, 4).

In order to develop effective educational and awareness campaigns to combat this major public health problem, it is imperative to assess population knowledge and practice of HIV/AIDS. Previous investigations into the knowledge and attitude towards HIV/AIDS in the general and high-risk populations in India have suggested significant variability in responses, with nearly half of the studies conducted in the Southern Indian states (5, 6).

Therefore, this study was designed to determine the proportion and predictors of comprehensive knowledge and attitude of HIV/AIDS in the rural population through a survey assessing their awareness regarding HIV/AIDS.

Objectives

- To assess the awareness of HIV/AIDS screening and prevention among rural people in Himachal Pradesh
- To study the knowledge and attitude of rural people in the Himachal Pradesh towards HIV/AIDS

Methodology

A population based cross-sectional research was conducted among the rural population of Kangra, Una and Chamba districts of Himachal Pradesh. Six villages (2 from each district) were selected for the study, and from these 6 villages a total of 300 people (150 males and 150 females-25 each from every village) were selected randomly for this study.

All villages in each of the three districts were enlisted and probability proportional to size method was used to select the villages from each district. From the households in each village every alternate house was included in this study to select individuals from each village.

The questionnaire and interview technique were employed for data collection. In the selected houses, residents 18 years and above were included in this study. Individuals who were suffering from major mental or physical disorders, mental retardation and staying in the rural areas for less than 1 year were excluded from this study.

Data was entered in excel sheet and descriptive statistics were used for quantitative data. The results were summarised using frequency tables. Mean and standard deviation were used for quantitative data and student t test and chi-square were used to check for significance. P value < 0.05 was considered statistically significant.

Prior approval from Institutional Ethics Committee (IEC) was taken from Dr RP Government Medical College, Tanda before commencing the study.

Findings

The overall mean age of respondents was 43±14.8 years. The respondents were educated as only 5.7% were illiterate and more than 65% were educated more than matriculation. Only 7% respondents in Kangra district and 14% from Chamba said they had never heard about HIV/AIDS, while 27% respondents from Una district said they had never heard about HIV/AIDS. Overall, 84% (252 individuals) had heard about HIV/AIDS while remaining have not heard about it.

The source of information about HIV/AIDS as told by the respondents is depicted in Table-1. Television (31.7%), School (17.5%) and internet (12.7%) were mentioned as the top sources from where they had got information about HIV/AIDS.

Table 1 Source of Information about HIV/AIDS among those who have heard about HIV/AIDS

Source	Frequency	Percentage
Hospital	28	11.1
Internet	32	12.7
Newspaper	18	7.1
School	44	17.5
Television	80	31.7
Others	50	19.8
Total	**252**	**100**

About 6% respondents from district Kangra did not know whether HIV is communicable or not while, 22% from district Chamba and 33% from district Una were either wrong or did not know it. Although 88% knew about the sexual route of transmission of HIV, knowledge regarding all other routes of transmissions was less than 50% and around 5% to 6% responses believed that HIV can be transmitted through coughing, touching and sharing utensils or food.

Overall, 69% replied in affirmation to the question on whether the HIV infection is preventable and Kangra had the highest proportion of correct responders with 81%, while Una and Chamba had 62% and 64% proportion of correct responders respectively. Out of the total respondents mentioning that HIV infection can be prevented the top three responses on preventive measures were: using condoms, having a single faithful relationship and avoiding contact with blood, while very few had any knowledge about PPTCT or PEP/PrEP (Table 2).

Table 2 Responses to preventive measures against HIV/AIDS (n=300)

Preventive measure	Numbers
Using condoms	141
Sticking to one sex partner	118
Abstaining from sex	12
Avoiding contact with blood	63
Using drugs to prevent the mother giving the child HIV	15
Pre/post-exposure prophylaxis (PrEP/PEP)	11

About 87% said that health education was the best strategy for prevention and control of HIV/AIDS, while the responses were 9% each for treatment/cure and screening for early diagnosis. Overall, 68% replied in positive for whether test was available to detect HIV/AIDS and Kangra had the highest proportion for correct responders with 80%, while Una and Chamba had 63% and 61% correct responders respectively.

Eighty-one out of the 300 people reported that they had been tested for HIV/AIDS. Out of those, 41(50%) were tested during pregnancy and 28 were referred by health care providers for testing and 11 had other reasons for getting tested. Only 23% of the respondents said that the test for HIV/AIDS is available for free, and others were not aware about this. Fifty-five percent of total respondents said they were aware that tests for HIV/AIDS can be done at government hospital/laboratories, while 15% said that it was available at private hospital/laboratories and rest 30% were not aware about where tests for HIV/AIDS can be done.

The responses to the questions related to attitude of the respondents indicated that majority (>60%) had a judgmental and biased outlook towards PLHIV and HIV positivity, so there was a fear in general regarding HIV testing.

Conclusion

The study indicates that awareness regarding HIV/AIDS and its screening and prevention is low in the selected three districts of Himachal Pradesh. Kangra district has relatively higher level of awareness than the other two districts. Una and Chamba district had relatively lower levels of awareness regarding HIV/AIDS and its screening and prevention. The attitude of people towards PLHIV and HIV positivity was judgmental and indicative of stigma and fear towards the disease.

Recommendations

- The community awareness programmes for HIV/AIDS and its prevention can be further improved especially in district Una and district Chamba
- The responses indicate that information is better conveyed if displayed on Television, social media and schools. These platforms may be used more efficiently for IEC activities to target maximum people across age groups
- Increased awareness regarding HIV/AIDS and its prevention will also be helpful to improve the attitude of the rural community towards PLHIV and HIV positivity

Acknowledgement

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Study on effectiveness of counselling services in ICTC/PPTCT for newly detected HIV positives to prevent HIV transmission in Jharkhand

AUTHORS

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Introduction and rationale

Prevention of Human Immuno Deficiency Viruses (HIV) transmission has been at the forefront of global HIV prevention activities. Majority of the HIV infections among different high-risk groups can be prevented through an effective package of ICTC (Integrated Counselling and Testing Centres) and PPTCT (Prevention of Parent to Child Transmission) services (1, 2).

Evaluation of counseling, testing, and referral services increase the effectiveness, efficiency, and quality of services delivered by providers and improves the availability, accessibility, and acceptability of testing and counseling services. Periodical evaluation of counseling, testing, and referral services is mandatory to find out any existing deficits and barriers of all functions of ICTCs (3).

Objectives

- To evaluate the effectiveness of counselling services at ICTC/PPTCT for prevention of HIV
- To identify the factors responsible for gaps in counselling services in ICTC/PPTCT

Methodology

The study was conducted by the Department of community medicine, Sheikh Bhikhari Medical College, Hazaribag in collaboration with Jharkhand State AIDS Control Society (JSACS).

Place of study: Selected ICTC/PPTCT centres and ART Centre of Hazaribag district in Jharkhand. Selected centres were located in Sadar, Barhi, Bishnugarh, Chauparan, Ichak, and Katkamsandi blocks of Hazaribag district.

Design of study: It was a mixed method study i.e. both quantitative and qualitative methods was adopted.

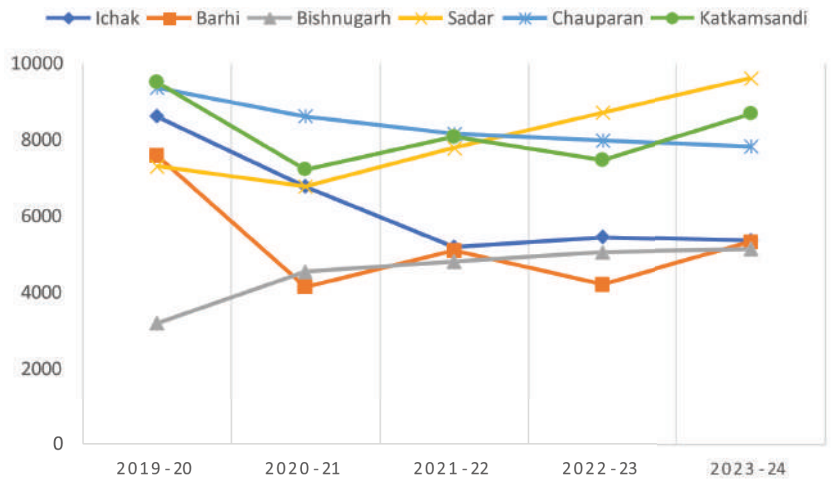
Method of data collection: All the ICTC/PPTCT centres as well as ART Centre of Hazaribag district were selected for this study. For quantitative component, relevant data was collected from available records at the ICTC/PPTCT Centres for the last five years. ART Centre was also taken for this study because after testing positive a client is linked to ART Centre for initiation of therapy.

For qualitative component, in-depth interview with a predesigned checklist was conducted. In depth interview of the following groups at ICTC/PPTCT and ART centres were done: (i) ICTC/PPTCT counsellors and the laboratory technicians (ii) newly positive clients (who came out to be HIV positive within 12 months). Total 50 new HIV positive patients were interviewed considering the time and resource limitation. A checklist was prepared in accordance with Operational Guidelines for Integrated Counselling and Testing Centres, NACO (2007).

Findings

It was found that there was in general increase in HIV testing and counselling in most of ICTCs except ICTC Sadar which observed gradual decline for same. It was also observed that there was no loss between pretest counselling and testing for HIV. Similarly, no loss of client was found between testing and post-test counselling.

Figure 1 Trend of HIV counselling and testing at ICTCs in last five year



Interviews from the counsellors and lab technicians showed that that effective counselling services had played an important role in prevention of HIV transmission and the quantitative data also shows that due to effective counselling the number of clients for pre-test counselling, testing and post-test counselling are same. All the ICTC reported that whoever came for pretest counselling, underwent testing for HIV/AIDS as well as underwent post-test counselling. This could be possible only through effective counselling technique.

It was evident from the interview from the lab technicians that effective counselling services had played an important role in prevention of HIV transmission. This is in line with the quantitative data which shows that the no of clients for pretest counselling, testing and post-test counselling are same. And almost all the positive clients were linked to ART centres. This is only possible through effective counselling.

Table 1 Major findings of In-depth interview with newly HIV positive clients

Themes	Major findings
Overall facilities at ICTC/PPTCT Centre	• Clients were satisfied • Waiting areas were provided • Waiting time for counselling and testing activities was not too much
Pre-counselling services at ICTC/ PPTCT Centres	• Almost every client was satisfied • Adequate information was received • All clients were able to tell about the causes, spread and prevention from HIV/AIDS irrespective of their literacy status
Post counselling services at ICTC/ PPTCT centre	• Post-test counselling was effective • Test results and their doubts were clarified at the centres • Adequate time were given during post-test counselling • Timely referral to ART centres

Role of counselling services in prevention of HIV transmission	• Counselling services are an effective tool in prevention of HIV transmission • People became aware regarding its method of spread • People know how they can prevent this disease to spread to their spouse and children • Adhere to the drug regimen due to effective counselling
Suggestions to make ICTC/PPTCT more effective	• Medicines should be available at their block • As they have to travel to a large distance the services should be available to their nearest health facility • Discrimination in the society should be minimised

Conclusion

Human resources were not available as per guidelines in some of the ICTCs. Counsellor post was vacant in two ICTC while lab technician post was vacant in one ICTC. The quantitative data shows that counselling and testing has increased in last five years in all the ICTC. The study shows that there is more awareness among clients nowadays hence the challenges faced by counsellors in motivating them for testing is seen on a decline.

Clients were satisfied with services available at ICTCs. They were also satisfied with time taken for testing and result declaration. Both the counsellors as well as HIV positive cases said that HIV counselling at ICTCs are very effective means of controlling HIV transmission from new cases to some other people.

Clients have to come from long distance to take medicine. It takes their complete day for this activity and leads to their wage loss also. Out of pocket expenditure increased during visit to ART centres which are located very far away and sometimes in another districts.

Recommendations

- For effective functioning of ICTCs, filling of vacant post like counsellor and lab technicians in different ICTCs should be considered and done at the earliest.
- Regular training of counsellors and lab technicians which will motivate them to work effectively.
- More ICTC centre should be available at nearest PHCs so clients can avail ICTC services easily.
- To promote voluntary testing awareness activities should be increased in schools and community.
- Availability of drugs (ART) should be at local health facilities, as many clients have to cover 50-100 km to take benefit from ART centres. This will reduce out of pocket expenditure and time saving by the clients. Some districts do not even have their ART facilities. ART centres should be created in these districts.

Acknowledgement

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Study on linkage loss from ICTC to ART Centre in border areas of Uttarakhand

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Introduction and rationale

India has the world's third highest and Asia's highest HIV burden, with an expected 2.5 million people living with Human Immuno Deficiency Virus (HIV) in 2023 (1). The national HIV prevalence among (15- 49 years) is 0.20% while in State of Uttarakhand it is 0.13% (2).

Linkage to care is described as the process put in place to ensure that HIV-positive individuals are successfully entered into HIV diagnosis, medical care, psychological and social services (3). As per data provided by Uttarakhand State AIDS Control Society, 1250 HIV- positive individuals were found in the ICTCs in 2022-2023, but only 1172 of them made it to an ART center, indicating a high number, 78 of linkage loss.

The situation of HIV is more complex among residents living in border areas due to factors such as migration, unsafe sexual practices, and opioid use. Psycho-social, economic, and health system–related issues were the most frequently cited barriers in PLHIV (4, 5). Study aims to explore socio-epidemiological and systemic factors influencing linkage loss from ICTC to ART in Uttarakhand. While linkage loss is more evident in border areas affected by migration and drug trafficking, it is not confined to specific geographies, highlighting the need for broader programmematic focus.

Objective

To identify socio-epidemiological and systemic factors/situations negatively influencing the linkage affecting programme outcome in the border areas of Uttarakhand

Methodology

The study was an observational, cross-sectional, mixed-method design. Universal sampling approach was used to enlist clients attending selected ICTCs and their linked ART centres across Uttarakhand. All adult PLHIV registered at ICTCs who failed to attend ART centres and consented to participate were included. A convenient sample of service providers from sampled facilities was also selected for in-depth interviews. The study was conducted over four months in two regions of Uttarakhand—Garhwal (Dehradun) and Kumaon (Nainital and Udham Singh Nagar). Selected ICTCs included Doon Medical College, Sub District Hospital Rishikesh, and Shri Mahant Indresh Hospital Dehradun, while corresponding ART centres were Coronation District Hospital Dehradun, Mahant Indresh Hospital, Dehradun, Sub. District. Roorkee (Haridwar), and Dr. S.T.G.H. Haldwani (Nainital).

Sample size

As per Uttarakhand State AIDS Control Society, (2022–23), 484 HIV-positive clients were registered at ICTCs, with 351 linked to ART centres, showing a 27% linkage loss (133 clients). Based on this, a sample size of 119 was calculated at 95% confidence and 8% precision; 124 clients were ultimately enrolled.

Quantitative component

Pre-tested semi-structured questionnaire was used to collect numerical data on socio-demographic details, health-seeking behaviour, and service utilisation.

Qualitative component

Qualitative data was collected through in-depth interviews with clients, counselors and programme personnel, responses were thematically analysed, coded, and subsequently transformed into numerical categories for integration with quantitative analysis.

Findings

A total of 124 PLHIV were enrolled from four ART centres across Uttarakhand, with the highest participation from Dr. Sushila Tiwari Government Hospital, Haldwani (40.3%), followed by Indresh Hospital, Dehradun (25%), Coronation District Hospital, Dehradun (20.2%), and Sub District Hospital, Roorkee (Haridwar) (14.5%). Most participants (70.2%) were aged 21–40 years, and males predominated (76.6%). Nearly one-fourth were illiterate (24.2%), and a similar proportion had completed secondary education (25.8%). Occupation-wise, unskilled labourers (22.6%) and those in service (17.7%) formed major groups, while 16.9% were unemployed. Over half (52.4%) depended on family income, and the majority (79.8%) belonged to the upper socio-economic class. More than half were married (52.4%).

Heterosexual contact with a regular partner (46.8%) was the most common mode of HIV exposure, followed by intravenous drug use (24.2%). The majority underwent HIV testing due to suspected exposure (65.3%).

Statistically significant differences in median duration of loss to follow-up (LTFU) were observed across age ($p=0.008$), education ($p=0.004$), occupation ($p=0.033$), addiction type ($p=0.012$), mode of exposure ($p=0.045$), TB status ($p=0.003$), and baseline CD4 count ($p<0.05$). Longer durations of LTFU were found among intravenous drug users, those with lower education, lower CD4 counts, and skilled labourers, indicating socioeconomic and clinical vulnerabilities influencing ART linkage continuity.

Table 1: Determinants of Loss to Follow-Up among study participants

Reasons for loss to follow up	Frequency (n=124)	Percentage
Accessibility to health care	38	30.6
Distance to Healthcare Services	34	27.4
Financial Barriers to Healthcare	34	27.4
Out-of-Pocket Expenditure on Healthcare	9	7.3
Loss of Wages due to Clinic Visits	39	31.5
Work-related barriers to healthcare	15	12.1
Childcare challenges during treatment	2	1.6
Social responsibilities affecting clinic visits	9	7.3
Family-related barriers to healthcare	10	8.1
Stigma-related barriers to healthcare	14	11.3
Family support or barriers to healthcare	16	12.9
Community-related barriers to healthcare	12	9.7
Discrimination as a barrier to healthcare	15	12.1
Location-related barriers to healthcare	8	6.5
Physical limitations affecting treatment access	12	9.7
Clinic-related barriers to care	1	0.8
Perceived mismatch between report and health	5	4

About one-third of respondents (38; 30.6%) reported accessibility barriers as a major reason for loss to follow-up, mainly due to lack of timely transportation, inconvenient clinic timings, or poor connectivity -"परिवहन सेवा का समय पर न मिल पाना", "परिवार को दवाई का न मिल पाना", "एक ट्रक ड्राइवर होने के नाते समय पर क्लिनिक जाना मुश्किल हो जाता है".

Another 34 participants (27.4%) cited distance-related challenges, such as long travel distances, hilly terrain, or weather-related difficulties - "क्लिनिक की दूरी 60 किमी का होना", "बारिश में बहुत दिक्कत हो जाती है". A few (6.5%) mentioned location-related issues, like repeated travel difficulties.

Economic constraints were among the most common barriers: 39 participants (31.5%) reported loss of wages, while 34 (27.4%) faced financial hardships such as high travel costs or unaffordable expenses - "गाड़ी का किराया महंगा होना", "सरकारी बस छूट जाए तो मुश्किल हो जाती है". Additionally, 9 participants (7.3%) mentioned out-of-pocket costs, and 15 (12.1%) faced work-related barriers like inability to get leave -"क्लिनिक जाने के लिए काम से छुट्टी न मिल पाना".

Systemic Factors Contributing to Loss to Follow-Up

- Limited accessibility of ART services - long distances, inadequate transport, and lack of decentralised facilities
- Inconvenient clinic timings - rigid schedules not aligned with patients' work or livelihood needs
- Frequent visit requirements - short drug dispensation duration increasing the treatment burden
- Clinic-related inefficiencies - long waiting times, limited patient-friendly services, and inadequate counselling
- Weak follow-up and tracking mechanisms - absence of robust systems to identify and re-engage patients who miss appointments

Conclusion

The study underscores that the phenomenon of linkage loss from ICTCs to ART centres is not merely a clinical or procedural gap but a multifaceted outcome of intersecting social, economic, and systemic determinants. Financial constraints, wage loss associated with repeated clinic visits, and the geographical inaccessibility of health facilities constitute critical economic and structural impediments. Simultaneously, limited familial and community support, compounded by pervasive stigma and discrimination, exacerbate disengagement from care. Co-morbid conditions such as tuberculosis and adverse drug reactions further intensify these vulnerabilities, contributing to delays or discontinuities in treatment initiation.

Moreover, qualitative insights from counsellors and medical officers highlight the influence of transient migration, sociocultural obligations such as festivals, and seasonal livelihood patterns as additional contextual disruptors of consistent care linkage. Collectively, these findings reveal that linkage loss transcends the biomedical paradigm, necessitating an integrated, multisectoral response that concurrently addresses structural inequities, socio-behavioural determinants, and health system inefficiencies to ensure sustained engagement across the HIV care continuum.

Recommendations

- Retention Strategies: Flexible ART timings, extended drug dispensation, and peer-led follow-up to improve adherence and reduce LTFU.
- Financial & Social Support: Provide transport/nutrition allowances, pensions for PLHIV, and NGO linkages for holistic care.
- Stigma Reduction & Awareness: Promote community sensitisation, family counselling, and support groups to normalise HIV care.
- Region-Specific Approaches: Mobile units, telemedicine, and livelihood-sensitive ART scheduling for remote areas of Uttarakhand.

Limitations

Incomplete data and records were observed in some ART centers, particularly in Roorkee. The study also faced incorrect contact numbers of clients. A communication gap existed between clients and ART centers, especially in the case of jail clients, as seen in ART Roorkee. Around 17 (15.7%) client's baseline CD4 count was not available.

Acknowledgement

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CARE, SUPPORT AND TREATMENT

Determinants of adherence to TLD regimen among People living with HIV in Andaman and Nicobar Islands

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Introduction and rationale

HIV/AIDS continues to present significant health challenges globally, with an expected 2.5 million people living with Human Immuno Deficiency Virus (HIV) in 2023. In regions like the Andaman and Nicobar Islands, unique barriers to antiretroviral therapy (ART) adherence exist due to geographical isolation, cultural diversity, and limited healthcare infrastructure. Antiretroviral therapy (ART) has been transformative in reducing HIV-related mortality and improving the quality of life for people living with HIV (PLHIV). ART not only suppresses viral load, thereby reducing HIV transmission, but also enhances immune function, allowing PLHIV to lead healthier lives (2). The year 2024 also marks two decades to starting of free anti-retroviral therapy for PLHIV in India and celebrates unique initiatives like 'Treat All' policy for ensuring access to medications is not a hindrance to achieving healthier lives. Adherence factors can be related to four dimensions: the patient, the disease, the patient-physician relationship, and treatment management. The introduction of the Tenofovir- Lamivudine-Dolutegravir (TLD) regimen, recommended by the National AIDS Control Programme (NACP), has offered enhanced efficacy and reduced side effects, promising to improve ART adherence (2, 3). However, adherence remains influenced by a range of factors including socio- demographic, psychological, and economic factors (4). This study aimed to assess the factors impacting ART adherence among PLHIV in the Andaman and Nicobar Islands and to provide tailored recommendations for enhancing adherence in this unique setting.

Objectives

- To determine ART adherence levels to TLD regimen in PLHIV and its determinants in Andaman and Nicobar Islands
- To monitor any adverse drug reactions of the TLD regimen in PLHIV of Andaman and Nicobar Islands

Methodology

A cross-sectional, hospital-based study was conducted at the FI-ART centre of G B Pant Hospital, Sri Vijaya Puram (formerly Port Blair), which serves as the primary ART centre in the Andaman and Nicobar Islands. A total of 185 adult people living with HIV (PLHIV) registered at this centre were enrolled in this study through simple random sampling.

The data was collected through structured interviews and validated adherence assessment tools, including the Medication Adherence Rating Scale (MARS) and the AIDS Clinical Trials Group (ACTG) 4-day follow-up adherence questionnaire. The study examined adherence rates and associated factors, categorising adherence into high, moderate, and low based on MARS scores. Socio-demographic variables (such as age, gender, education, occupation, and socio- economic status), psychological and behavioural factors (such as stigma, mental health conditions, and alcohol use), and structural factors (such as distance from ART centres and travel time) were analysed. Additional variables included knowledge of ART, awareness of special instructions, and management of ART-related adverse effects.

Descriptive statistics were used to analyse adherence levels, and associations (using Chi-square test) was assessed between adherence and the identified factors. This multi-faceted approach allowed for a comprehensive understanding of the interplay between personal, socio-economic, and healthcare-related variables in influencing ART adherence.

The study was conducted after obtaining approval from Institutional Ethics Committee (IEC) ANIIMS (F-No. 1-366/ANIIMS/IEC/2024 dated 15/04/2024), at the FI-ART Centre attached to G B Pant Hospital, ANIIMS Port Blair, the only referral and tertiary care hospital in Andaman & and Nicobar Islands.

Findings

The participants consisted of residents from south, north and middle Andamans, and Nicobar Islands with South Andaman having highest cluster of PLHIVs (87%). The mean age of participants was 41.15 ±12.44 years, with about 58.4% being males. There were residents from urban (52.4%), rural (44.3%) as well as tribal (3.2%) areas. Majority of the study subjects were educated up to senior secondary education (25.9%), followed by those with high school education (21.1%) and middle school education (18.4%). Homemakers (27.6%) were the largest group, followed by daily wage workers at 25.9%. Among the study subjects a significant majority are married (60.5%), whereas 20.5% , were unmarried,16.8% were widowed and while remaining were separated. As per Modified B G Prasad Socio-economic status scale 2024, 39.5% fall into Class I (Upper Class), while 35.7% are categorised as Class II (Upper Middle Class).

Table 1 Distribution of study participants based on Modified B G Prasad Socio-economic status scale 2024 (N=185)

Socio-Economic Class	Frequency (%)
Class-I (>9130): Upper Class	73 (39.5)
Class II (4565-9129): Upper Middle Class	66 (35.7)
Class III (2739-4564): Middle Class	4 (2.2)
Class IV (1369-2738) Lower Middle Class	6 (3.2)
Class V (< 1369) Lower Class	0 (0)
Total	**185**

The study provides valuable insights into adherence patterns, particularly through the application of the ACTG scale and the MARS questionnaire. These tools not only quantified adherence but also revealed associated factors, categorising adherence into high, moderate, and low based on MARS scores demographic comparisons (age, gender, geography), socio-economic and educational factors, occupational impact, behavioural and psychosocial variables (alcohol consumption, stigma) and adverse effects and co-morbidities.

The study also revealed that 85% of participants demonstrated high adherence (MARS score 7– 10), with slightly higher adherence rates observed among females (53.2%). High adherence was also observed in participants aged 59-69 years (58.8%), those in joint family set-up (64.9%), or those with graduation as educational levels (46.2%).

Marital status was found to show statistically significant association with adherence (p= 0.001). Association of other socio-demographic factors like age (p=0.203), gender (p= 0.092), education (p= 0.093), occupation (p= 0.111), type of family (0.0005), socioeconomic status (p=0.438) and distance from ART centre (p= 0.580) with adherence was assessed however, no significant association was observed.

Approximately 68.6% of participants whether non-adherent or adherent reported experiencing stigma or discrimination, which is an important factor related to adherence.

Table 2 Existence of experience of stigma and discrimination reported by study participants (n=185)

Stigma	Not Adhered	Adhered	Total
Yes	71 (38.4%)	56 (30.2%)	127 (68.6%)
No	27 (14.6%)	31 (16.8%)	58 (31.4%)
Total	**98 (53%)**	**87 (47%)**	**185 (100%)**

Fatigue (36.2%), nausea (12.1%), and dizziness (22.2%) were the most common adverse effects reported, influencing adherence among those who experienced these symptoms more severely. Psychological conditions such as depressive symptoms (7.6%) and anxiety (7%) have been reported by a subset of the patients as well.

The study identified key reasons for non-adherence, which included both structural and behavioural factors. Forgetfulness was the most common cause, affecting 11.4% of participants, followed by being busy (5.9%) and disruptions in routine (7.6%). Travel-related challenges (14.1%) were particularly significant for those living far from the ART centre.

Travel distance was also a considerably important factor since patients from remote and tribal areas often had to accommodate for higher travel costs and longer distances to access ART services, leading to challenges in consistent adherence.

Conclusion

The study provides valuable insights into adherence patterns, particularly through the application of the ACTG scale and the MARS questionnaire. These tools not only quantified adherence but also revealed associated factors, categorising adherence into high, moderate, and low based on MARS scores demographic comparisons (age, gender, and geography), socio-economic and educational factors, occupational impact, behavioural and psychosocial variables (alcohol consumption, stigma) and adverse effects and co-Morbidities. The study also identifies the key reasons for non-adherence which included both structural and behavioural factors. Forgetfulness was the most common cause, affecting majority of participants, followed by being busy and disruptions in routine. Travel-related challenges were particularly significant for those living far from the ART centre. Adverse effects drugs reactions, while generally minimal, played a role in adherence challenges for some participants. Fatigue or loss of energy was the most commonly reported symptom, significantly bothering a quarter of participants.

Recommendations

- To improve ART adherence among PLHIV in the Andaman and Nicobar Islands, a multi-pronged strategy is essential, addressing key barriers such as travel, stigma, side effects, and psychosocial challenges
- Implementing mobile health units regularly, developing a mechanism for digital adherence reminders, re-enforcing side effect management counselling at ART Centre, developing community-based peer support networks, integrating mental health services into ART Care, enhancing health literacy through tailored educational programme are recommended
- Developing gender-sensitive support programme, incorporating alcohol reduction and counselling services, enhancing engagement with family members in support programme, expanding financial assistance for low-income patients, and conducting community-level anti-stigma campaigns may be encouraged
- Provision of personalised adherence counselling based on individual barriers, implementing a robust monitoring system for adherence and engaging local community leaders and NGOs in ART Education is essential
- Flexible clinic hours and family-centred approaches are recommended to address occupational and familial barriers, while stigma reduction and psychosocial support remain critical for sustaining long-term adherence

Limitations

The possibility of recall bias and social desirability bias cannot be ruled out. Role of unmeasured confounders such as mental health and substance use are not fully captured in this study.

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Knowledge, attitude and practices about HIV/AIDS among sero-discordant couples registered at ART Centres in Goa

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Introduction and rationale

HIV discordant couples are those in which one of the partners is HIV- positive and the other one is HIV-negative despite repeated unprotected sexual intercourse between them. Though it is an established fact that sexual mode is the most common mode of HIV transmission, why some couples remain discordant is a matter worthy of investigation (1, 2). However, given the fact that though the most common mode of transmission, sexual contact may not be the most effective mode- the need for repeated HIV testing in HIV negative spouse of an HIV positive partner cannot be undermined. This calls for sustained commitment on the part of the discordant couple which is largely related to their knowledge and attitude towards HIV and HIV positivity (1, 3-5). Innumerable studies have been conducted till date eliciting knowledge, attitude and practices regarding HIV/AIDS among adolescents, pregnant women or general community and few studies are conducted to explore these aspects among people living with HIV, however, studies to assess KAP among HIV discordant couples are rarely conducted (4). In Goa, there is a dearth of studies among sero-discordant couples, therefore, the current study is proposed among such couples registered at ART Centres in selected Medical Colleges & Hospitals in Goa to elicit knowledge and attitude of discordant couples about HIV and HIV positivity, and to explore the practices followed by discordant couples to stop HIV transmission.

Methodology

A cross-sectional descriptive study was undertaken among 198 randomly selected discordant couples registered at ART Centres in Goa Medical College in North Goa and South Goa District Hospital during the period 1st April 2024 to 15th June 2024.

All the sero-discordant couples alive on ART in which one partner is HIV positive (sero-positive spouse) and the other HIV negative (sero-negative spouse) were included, while excluding those whose spouses were deceased or divorced or, those not living together. The list of sero-discordant couples was obtained from the Goa State AIDS Control Society.

Data collection was done by the investigators and trained data collectors, using a data collection tool through a semi-structured interview. Details pertaining to baseline socio-demographic status, clinical staging and compliance with ART were obtained from the records at the ART Centre, while the data pertaining to knowledge, attitude and practices regarding HIV/AIDS and its transmission was obtained in a face-to-face interview. The study participants were explained the purpose and the scope of the study. Interviews were conducted only among the respondents who consented to participate in the study.

Approval was obtained from Institutional Ethics Committee as well as the Research Advisory Committee of Goa Medical College.

Findings

Of the 198 couples eligible for the interview, 140 (70.7%) were registered at the North Goa Medical College ART Centre (NARTC) and 58 (29.3%) at the South Goa ART Centre (SARTC) at South Goa District Hospital. Mean ages

in the two groups were, respectively, 47.87 years (SD 11.004) and 44.94 years (SD 10.438). HIV-positive males were on an average 4.42 years older than their sero-negative spouses, while HIV-negative males were on an average 3.54 years older than their HIV-positive spouses.

More than 80% of the discordant couples were aware of the chronic, non-curable and lifelong nature of the disease, and its transmission through sexual route. However, just 6.6% of the couples were aware that being infected with HIV is not same as having the disease- AIDS. Regarding the knowledge on the transmission through routes other than sexual route, the proportion of responses among sero-discordant couples was 38.4% for bloodborne route, 23.7% for transmission through used needles, and 14.1% through vertical transmission. In most instances, awareness among sero-positive spouses (HIV-positive members among the sero-discordant couple) was significantly better as compared to that among sero-negative spouses (HIV-negative members among the sero-discordant couple). Education had a positive impact on the awareness, with those educated to more than tenth standard level of education had a better awareness, except that among sero-negative couples at SARTC.

Attitudes and practices in regard of prevention of HIV transmission through sexual route were favourable among the discordant couples. No extra-marital intimate relationship was reported by any of the 396 spouses partaking the study; almost 65% of the discordant couples abstained sex, 33% used condoms and 32% also reported of practicing non-penetrative sexual intercourse. With regards to the use of condom, male partners of sero-positive females were more common as compared to the sero-positive males themselves. Education seemed to have a good influence on the attitude favouring prevention of transmission of HIV in discordant married relationship.

Only 28.8% of the discordant couples were aware (both the spouses aware) of the biannual sero-testing of the sero-negative spouse. Among the sero-positive spouses, the awareness was present among 50.5%, while among the sero-negative spouses it was 39.9%. Less than one-fourth (24.1%) of the HIV-negative spouse at the South Goa ART Centre were aware of biannual sero-testing of sero-negative spouse. Attitude of the discordant couples towards such a testing was not favourable in almost 60% of the sero-negative spouses in NARTC and 95% in SARTC, and it sprung from the understanding that the baseline reports were negative and there has been no unprotected intimate relationship thereafter. Fear of stigma associated with repeated visits to ART also deferred the sero-negative spouses from such a testing at the ART Centre, and 36.4% of the spouses from NARTC and 31% from SARTC preferred to get tested in a private laboratory.

HIV-TB co-infection was detected among 12.9% of the sero-positive spouses at NARTC and 3.4% of those at SARTC. Awareness of the HIV-TB co-infection was to the tune of, respectively, 80% and 60% in the spouses registered at NARTC and SARTC; and only 32.9% of the discordant couples at NARTC and 5.2% of those at SARTC were aware. Less than 1% of the positive spouses were aware of all the four screening symptoms of TB, and 4.5% were aware of any three TB symptoms. Awareness regarding any two symptoms of TB was seen in 36.4% of the positive spouses, and 25.8% were unaware of any symptom of TB.

Use of tobacco and alcohol was scarcely reported in the sero-positive subjects, with 98.9% (196) of the HIV positive spouses reporting that they do not smoke, 99.5% (197) reporting no current use of smokeless tobacco; and 93.9% (186) reporting no current use of alcohol. This highlights their serious attitude and their commitment towards their treatment. Only 5.1% (10/198) of seropositive spouses reported that their spouse always accompanied them to the ART centre, the most common reason for which was that the spouse had already tested negative and there was no on-going risk of transmission. None of the 396 respondents (198 discordant couples) reported of having received a formal recommendation or even a suggestion from their ART Centre that they should come over for follow-up as a couple, and not as an individual. Though only a few followed up at the ART Centre as a couple, but none of sero-negative spouses were involved in the treatment process at the centre. However, treatment outcomes were better among the latter group compared to those where the sero-positive patient was not accompanied by the spouse.

Conclusion

This study was carried out among the sero-discordant couples alive on ART register in Goa. While the knowledge about sexual transmission of HIV as well as attitudes and practices pertaining to the same in married

relationship was favourable, knowledge about transmission through the other routes, HIV-TB co-infection, bi-annual screening of sero-negative partner could have been better. The couples seemed to be concerned about the kind of attention received by sero-negative couples, and also the lack of empathy among the counsellors.

Recommendations

- The programme should emphasise on customised couple centric counselling rather than a generic counselling of HIV-positive patients
- Qualitative assessment of the counselling sessions would generate more evidence to recommend interventions in the counselling process

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Factors associated with poor adherence of ARV drugs among People living with HIV in Gujarat

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Introduction and rationale

HIV/AIDS continues to pose a substantial global public health challenge, with an estimated 40.8 million individuals living with HIV (PLHIV) worldwide (1). In India, a resource-constrained setting, the estimated HIV prevalence stood at 0.21% by the end of 2021 (2). Effective control of the HIV epidemic hinges significantly on sustained adherence to antiretroviral therapy (ART) by PLHIV (3). However, suboptimal adherence remains a major barrier to achieving favourable clinical outcomes, reducing viral load, and preventing drug resistance.

Identifying and understanding the multifactorial reasons for poor ART adherence is therefore crucial. Prior research has showed a range of contributing factors, including socio-demographic variables, psychosocial influences, health system inefficiencies, and medication-related challenges (4-6). Additional barriers may include limited-service access, poor awareness about the illness and treatment, stigma, cultural resistance, adverse drug effects, fear of disclosure, and uncertainty regarding the disease trajectory.

Despite the long-standing implementation of ART services in India, adherence rates remain inadequate, particularly in regions like South Gujarat. Notably, no localised study has been done to explore the determinants of ART non-adherence in this area. Addressing this evidence gap through a mixed-method approach is essential for effective and context-specific interventions for local focal issues.

Objectives

Aim: To comprehensively investigate the factors associated with poor drug adherence among People Living with HIV (PLHIV) in order to enhance treatment outcomes and improve the overall quality of care by continuum of care for PLHIV at ART Centre, New Civil Hospital, Surat.

- To identify demographic and socio-economic factors associated with poor drug adherence among PLHIV at ART Centre, New Civil Hospital, Surat
- To explore healthcare access-related factors influencing drug adherence among PLHIV at ART Centre, New Civil Hospital, Surat
- To investigate psycho-social factors, including stigma and social support, contributing to poor drug adherence among PLHIV at ART Centre, New Civil Hospital, Surat
- To examine medication-related factors, such as regimen complexity and side effects, in relation to poor drug adherence among PLHIV at ART Centre, New Civil Hospital, Surat
- To understand the experiences, perceptions, and contextual factors influencing drug adherence among a subset of PLHIV

Methodology

This study adopted a sequential explanatory mixed-methods design, beginning with a quantitative cross-sectional survey followed by a qualitative component involving in-depth interviews.

Study Setting and Population: The research was done at the ART Centre, New Civil Hospital, Surat. The study focused on PLHIV receiving ART services, with attention to those having poor drug adherence.

Sample Size and Sampling Strategy: Using an estimated prevalence of poor adherence (16.7%) based on Khede et al. (7), the sample size was calculated to be 213.76, which was adjusted to 240 to account for non-response. A convenience sampling method was used to recruit participants for the quantitative phase.

Inclusion and Exclusion Criteria: PLHIV aged ≥18 years with <95% ART adherence in the past month (as per NACO guidelines) were included. Those with cognitive impairments or unable to communicate in Hindi, Gujarati, or English were excluded.

Data Collection Tools and Process: Data were gathered via semi-structured interviews using validated tools such as MMAS-8 for medication adherence (8), PHQ-9 for depression (9), GAD-7 for anxiety (10) and OSSS-3 for social support assessment (11).

Drug adherence was verified using pill counts and ART centre records. A pilot study (n=10) was done to validate tools. Trained personnel conducted face-to-face interviews.

Statistical Analysis: Data were entered in MS Excel and analysed using SPSS v25. Descriptive statistics were calculated for all variables. Appropriate statistical test was applied for statistical analysis with p value considering <0.05 as level of significance.

Qualitative Phase: Purposive sampling was used to select 20 participants (10 with good and 10 with poor adherence) for in-depth interviews. Data were analysed using thematic analysis to explore contextual and experiential dimensions of adherence.

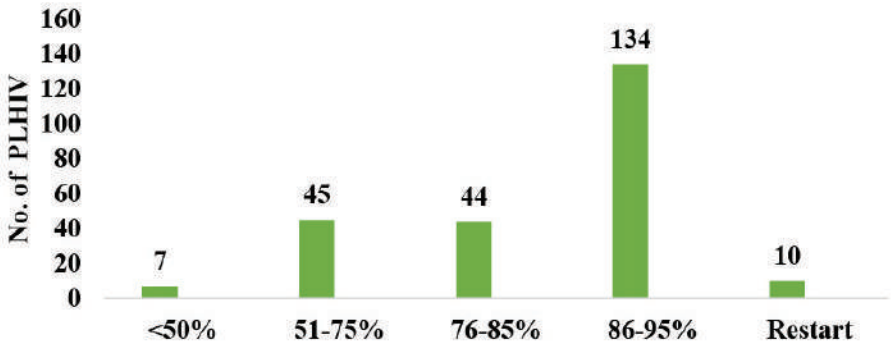
Ethical approval was obtained from Kiran Hospital Ethics Committee Biomedical & Health Research.

Findings

Quantitative Phase Findings

Among 240 PLHIV, 55.8% had 86–95% adherence to ART, while 18.8% and 18.3% had adherence 51–75% and 76–85%, respectively. Only 2.9% had adherence below 50%, and 4.2% had restarted treatment after a significant gap.

Figure 1: Status of adherence among study participants (n=240)



Drug adherence was not significantly associated with age (p=0.81), gender (p=0.493), marital status (p=0.97), or literacy (p=0.999), though slightly higher adherence was seen in older adults and literate individuals. Mean adherence level among males was 77.7% and females 79.9%, while those aged >65 years had the highest adherence (91.7%).

Participants with comorbidities (p=0.009) and those experiencing side effects (p=0.039) had significantly lower adherence. Lower adherence level also corresponded with significantly higher viral load counts (p<0.001) and reduced CD4 counts (p=0.006) collected at the time of the interview. Social support (OSSS score) positively correlated with CD4 count (r=0.203, p=0.002), however adherence rate it was statistically insignificant.

Adherence strategies included habitual timing (75%), family reminders (8.8%), and alarms (2.5%). Forgetfulness and travel expenses were major reasons for missed doses.

Significant negative correlation was seen between adherence and updated PLHIV viral load (r=-0.319, p=0.025), showing that poor adherence adversely affects viral suppression.

Qualitative Phase Findings

In the qualitative phase, 20 participants (10 each with good and poor adherence) were purposively sampled from the ART Centre for in-depth interviews. Participants' mean age was 39.95 years; 65% were male. Majority were literate (80%) and married (50%), with 75% on first-line treatment.

Barriers to adherence included long travel time, work commitments, and missed doses during travel or events. One of the participants said, "3 घंटे लग जाते हे गांव से आने में, इसी लिए दवाई लेने की तारीख निकल जाती है." (It takes me 3 hours to come from the village, which is why I miss my medication appointments). Forgetfulness, lack of access, false sense of secularity about HIV [e.g., "कोरोना में नहीं ली, कुछ नहीं हुआ" (Did not take medicines during Corona, nothing happened)], and work emergencies were other reasons. Some reported fear of side effect for skipping medicine.

Despite challenges, many felt responsible towards the family and realised the value of ART. "अगर मुझे कुछ हो गया, तो परिवार का क्या होगा (If something happens to me, what will happen to my family?)," shared one participant, showing strong motivation. One participant expressed hopefulness: "दवा लेने के बाद सुधार हुआ." (There was improvement after taking the medicine). Positive interactions with healthcare staff and reminders from ART centres helped improve adherence, though some faced language barriers or lack of empathy.

Social stigma and discrimination were commonly present in society, but changing perceptions and family support helped to create positive environment. Participants also suggested improved access (e.g., home delivery), longer-duration refills, financial aid, and marriage support for PLHIV. Their finding shows the importance of personalised care and sustained system-level support.

Conclusion

This study shows the multi-factorial nature of drug adherence among PLHIV at the ART Centre, New Civil Hospital, Surat. Healthcare access barriers like transport issues and long waiting times also affected adherence, while supportive staff interactions promoted it. Psycho-social factors, especially stigma and family dynamics, played an important role both positively and negatively. While medication regimen complexity was not a major concern, side effects discouraged adherence. These findings show the need for targeted, holistic interventions addressing demographic, healthcare system strengthening, psycho-social, and treatment-related challenges to improve ART adherence.

Recommendations

- There is need to strengthen adherence through age-specific counselling, peer support, and stigma reduction via positive speaker.
- There is a need to improve HIV care by ensuring timely ART delivery during hospital admissions and deploying multi-disciplinary residents to ART centres.
- Addressing transport barriers via mobile and differentiated delivery ART services could also be considered.
- Promoting social support through GSNP+ networks is important.
- Focus should also be on conducting family and couple counselling sessions to support for disclosure of status.

- ART staff needs to be trained for screening for mental health issues and manage burnout.
- Advocacy for policy-level implementation of smart ART cards nationwide may also be considered.

Limitations

The study was subject to recall bias in the qualitative phase. Additionally, the results were specific to the selected study sites and may not be generalisable to all PLHIV populations.

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Verbal autopsy of deaths of People living with HIV at ART centre in Haryana

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Introduction and rationale

The global HIV/AIDS epidemic continues to pose a significant public health challenge, particularly in resource-limited settings where access to comprehensive medical care may be constrained. On the national front, the India HIV Estimations 2023 report highlights that over 2.5 million people are living with HIV in India. Within this national context, Haryana, a northern state, has been identified as a region experiencing a rising prevalence of HIV. This upward trend underscores the critical need for localised studies to understand the specific dynamics of mortality among PLHIV in this area.

In environments where medical certification of death is often lacking or incomplete, verbal autopsy (VA) emerges as an invaluable tool for determining causes of death using ICD-10 (1-3). This method involves conducting structured interviews with the relatives of deceased individuals to gather detailed information about the symptoms, circumstances, and events leading to death. Such data are crucial for informing targeted public health interventions and for accurately assessing disease burden (4). A review of existing literature revealed a significant scarcity of information on the causes of death among PLHIV receiving Antiretroviral Treatment (ART) in India (5). Notably, no prior verbal autopsy studies focusing on PLHIV deaths at ART centres in any Indian state were identified. This absence of specific, localised data highlights a critical void in the understanding of mortality patterns in this vulnerable population, positioning the current research as foundational for future public health strategies within India's National AIDS Control Programme (NACP).

Objectives

This study was designed with two primary objectives: first, to assess the prevalence of mortality among PLHIV subjects registered at the ART center in Rohtak, Haryana; and second, to elucidate the specific causes of death in these subjects through structured interviews with their family members.

Methodology

This investigation was conducted as a verbal autopsy research project, employing a systematic approach that integrated both quantitative and qualitative methodologies for data collection and analysis. This study was conducted at the ART Centre of PGIMS Rohtak, a tertiary care facility accounting for 67% of PLHIV deaths in Haryana. The study analysed mortality data from 1st October 2020 to 30th September 2023. Using systematic random sampling, 54 deceased PLHIV were selected from a total of 320 deaths.

Verbal autopsies were conducted with the next of kin using the WHO 2022 VA tool, translated into the local language. Detailed information on signs, symptoms, health-seeking behaviour, treatment adherence, and events preceding death was captured. In-depth interviews were conducted at the household level by trained investigators. Interviews were transcribed, translated, and analysed using Graneheim & Lundman's qualitative content analysis method. Quantitative data were analysed using SPSS v24.

The primary tools included ART centre records, treatment cards, and a structured VA questionnaire. Clinical records were reviewed to extract details of ART initiation, visit frequency, CD4 count, viral load (when available), and co-morbid conditions.

The causes of death were coded using ICD-10 in consultation with clinicians. Quality assurance was maintained by regular supervision and triangulation of data from clinical notes, caregiver narratives, and physician insights.

Ethical clearance was obtained from O/o Institutional Ethical Committee SHKM, Nuh vide letter number SHKM/IEC/2024/21 Dated 26.03.2024.

Findings

Over three years, 2,399 PLHIV were registered at ARTC Rohtak, with 320 deaths (227 on-ART and 93 pre-ART deaths) reported—reflecting an overall mortality rate of 13.3%. The majority of deceased (on-ART PLHIV deaths) were males (80.18%) and aged 31–45 years (40.53%).

Verbal autopsy interviews, conducted among 54 living household relatives of deceased individuals, revealed that 55.5% of deaths occurred at home, 37.1% in medical colleges, and the remainder elsewhere. A majority had less than 5 ART visits and short survival after ART initiation. Antiretroviral therapy (ART) discontinuation was observed in 34.6% of cases and when asked from the family members the reason for discontinuation, the major reasons reported was that the patient did not go to the ART centre as per the scheduled clinical visits. Among those whose CD4 data were available, the last counts were low in most cases; viral load data were universally unavailable. Mental health challenges, including depression and anxiety, were identified as significant contributors to mortality among PLHIV. Symptoms like cough, fever, weight loss, and weakness predominated, and co-morbidities like tuberculosis (most common), hepatitis B/C, malignancies, and asthma were frequently noted.

Qualitative analysis revealed four major causes of death

- Natural progression of HIV – reflected in advanced disease or AIDS-related wasting, one of the household members shared

"*Doctors told us he had AIDS. He was having fever for 2-3 months. He was also having cough for about 1-2 months. But his condition worsened. He used to remain ill regularly due to some health problem. Sometimes vomiting, sometimes diarrhoea. Then he expired. "*

- Co-infections – especially TB, pneumonia, and secondary bacterial infections, one the household members shared "*Doctor told him that he is having Kala Peeliya. He used to take injections. His fever did not improve. Doctors said that he had AIDS as well.*"

- Co-morbidities – including hepatitis, malignancies, and renal disease, one of the household members shared "*Doctors found out that she had TB and HIV. She kept getting worse and eventually her memory became too weak*."

- Discontinuation of ART – due to denial, substance abuse, or psychological distress, one of the household members shared "*Doctors at PGI found out that he has TB and HIV. So, he took medicines from there. We also took care of him. He started to feel better but later he stopped taking medicines and started taking alcohol*."

ICD-10 coding highlighted B20.0, B20.6, B22.2, and B18.2 as the most common classifications. Psycho-social issues, stigma, and lack of family support were contributing factors.

The qualitative data from household relatives provided rich narratives affirming medical and behavioural barriers to continued care. The conceptual framework developed highlights interaction between patient-level, provider-level, and system-level determinants of mortality.

Conclusion

The study highlights a multifactorial causation of mortality among PLHIV at ARTC Rohtak, with significant roles played by co-infections, ART discontinuation, and systemic healthcare gaps. Findings reveal a rising mortality trend, disproportionate impact on males, and failure of timely diagnosis and retention in care. Addressing these issues through integrated interventions, improved monitoring, and psycho-social support systems is essential to reducing preventable deaths among PLHIV in Haryana. Qualitative data unfolded various medical and behavioural barriers to continued care apart from patient-level, provider-level, and system-level determinants of mortality. Thus, this operational research highlights some specific gaps in service delivery that needs to be plugged.

Recommendations

To improve health outcomes for PLHIV in Haryana, it is recommended that:

- **Enhance ART Adherence:** Implement community-based programmes to address stigma and promote adherence through counselling and peer support groups.
- **Integrate TB and HIV Services:** Strengthen co-management of TB and HIV at ART centres with rapid diagnostic tools and treatment protocols.
- **Gender-Sensitive Interventions:** Develop targeted outreach programmes to address the higher vulnerability of male PLHIV to mortality.
- **Psychosocial Support:** Integrate mental health services into HIV care to address substance abuse and depression.
- **Policy Revisions:** Revise programmematic guidelines to prioritise comprehensive data capture, including viral load monitoring.
- **Enhanced Training:** Healthcare providers receive training on managing co-morbidities.
- **Community Engagement:** Initiatives aimed to ensure timely access to ART and other necessary healthcare services.
- **Access to Care:** Strategies must be implemented to ensure timely access to ART and other necessary healthcare services.
- **Regular Monitoring:** Continuous monitoring of mortality trends among PLHIV should be established to inform future interventions.

Limitations

Study subjects were taken from ARTC Rohtak site which is located at tertiary care referral centre receiving serious cases, this might have been the reason for reflection of higher mortality rate. Study based on secondary data received from ARTC Rohtak and quality of data in terms of the completeness was poor. Clinical details and biomarkers were missing in many cases. This possibly could have affected the study outcome. Recall bias specially in the older cases may have also affected some of the results of the study. Many of the contacts of the selected subjects could not be reached and few of the relatives of the households refused to talk to the research team due to the social stigma.

Acknowledgement

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Comparative study of viral load failure assessment of People Living with HIV who put on TLD with other regimens in Karnataka

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Introduction and rationale

In consideration of the WHO guidelines and based on recommendations of NACO Technical Resource Group, it was decided to include DTG-containing regimens as the preferred firstline treatment for HIV-positive adults, adolescents and children (weighing more than 20 kg/age more than 6 years) under the NACP since July 2020 (1). With India's goal to end AIDS by 2030 and the UNAIDS 95-95-95 strategy (1), evaluating virologic suppression outcomes is critical. Evidence on TLD's effectiveness versus the previously used Tenofovir, Lamivudine, and Efavirenz (TLE) in Indian settings is limited (2, 3). This study was initiated to compare virologic failure (VF) between PLHIV on TLD and TLE in Karnataka and understand associated factors. Karnataka, a high HIV burden state, was selected for its geographical diversity and representative ART centers. Findings are intended to guide programme strategies on regimen choice for improved outcomes.

Objectives

- To compare the virologic failure among PLHIV who were put on TLD with other TLE regimen in Karnataka
- To determine the factors influencing virologic failure among PLHIV who were put on TLD and other (TLE) regimen in Karnataka

Methodology

This explanatory mixed-methods study was conducted from April to October 2024 in Karnataka. Four ART centers (Bengaluru, Karwar, Davangere, Belagavi) were selected representing each geographical zone and PLHIV load. A retrospective data cohort of total of 1316 PLHIV was sampled (658 on TLD, 658 on TLE) using proportional and simple random sampling. The inclusion criteria were to include data of PLHIV more than or equal to 18 years of age, ART-naive at initiation, and started on TLD or TLE between July 2019–2023 with more than or equal to 6 months of ART. Secondary Data were extracted from White Cards and entered into SPSS v16. Additionally, In-depth interviews (n=25) were conducted among those with VF across regimens and centers, coded using inductive thematic analysis to explore socio-clinical factors influencing failure.

Virologic failure was defined as VL >1000 copies/mL at 12 months. Statistical tests included Chi-square, Z-test, and binary logistic regression. CD4 counts, clinical staging, IPT use, OI history, functional status, TB co-infection, and co-morbidities were also analysed.

Ethical approval for the study was sought from Institutional Ethics Board of Karwar Institute of Medical Sciences.

Findings

Among 1316 participants, virologic data were available for 512 (TLD) and 426 (TLE). VF was significantly lower in TLD group (5.3%) vs. TLE (14.6%) (p<0.0001). Virologic suppression (<1000 copies/mL) was higher in TLD (94.7%) than TLE (85.4%).

Table 1 Comparison of Virological failure among PLHIV on TLD and TLE regimen

Viral Load	TLD (N=512) *		TLE (N=426) *		Z-test	p-value
	At 12 months		At 12 months			
	n	%	n	%		
<1000/mL	485	94.7	364	85.4	4.829	< 0.0001*
>1000/mL	27	5.3	62	14.6		

**Significant, Z-test for difference in proportions used for testing. *PLHIV who had VL test results.*

Median CD4 count at 12 months was also higher in TLD (315 cells/μL) than TLE (267 cells/μL) (p=0.018), reflecting better immune recovery. At ART initiation, both groups had similar baseline characteristics; however, post-treatment, the TLD group demonstrated superior clinical improvement, with 81.3% reaching WHO Stage 1 versus 90.8% in TLE. Functional status at 12 months showed >95% walking independently in both groups. IPT coverage was better in TLD (57.6%) than TLE (30.9%). TB was more prevalent among TLE (103) vs TLD (53); mortality due to TB and related complications was higher in TLE (14.3%) vs TLD (2.4%). Drug usage for opportunistic infections revealed similar coverage, though more TLE participants lacked any preventive prescriptions. Regression showed poor adherence and low CD4 count at ART initiation as independent VF predictors.

Nine themes emerged from 25 in-depth interviews with PLHIV who experienced virological failure on TLD or TLE regimens. Participants described the emotional, social, and systemic factors shaping their treatment journeys.

Theme 1: Initial reactions to diagnosis included shock and fear. *"When the doctor said I had HIV, I felt shocked. I couldn't think of anything and my mind went blank!"* (IDI P7).

Theme 2: Many perceived TLD positively. *"Switching to new (TLD) was smooth. I felt healthier than before."* (IDI P21).

Theme 3: Lack of understanding of virological failure caused anxiety. *"Honestly… I didn't know what virological failure meant… it sounded scary."* (IDI P7).

Theme 4: Missed doses and alternative medicine contributed to failure. *"I stopped the medicines for a while to try Ayurveda treatment. I thought they might cure me."* (IDI P22).

Theme 5: Support systems influenced adherence. *"My spouse reminds me to take my medicine daily, which really helps."* (IDI P15).

Theme 6: Mental distress was common. *"I worry about my health all the time. It's like a shadow over my life."* (IDI P19).

Theme 7: Stigma shaped secrecy and isolation. *"I hide my tablets while taking… I don't want anyone to know about my status."* (IDI P1).

Theme 8: Communication quality varied. *"He takes time to answer all my questions, and that reassures me."* (IDI P8).

Theme 9: Participants wanted shared decision-making. *"I wish I had a say in choosing my treatment. It feels like the decisions are made for me."* (IDI P1).

These narratives emphasise that beyond drug efficacy, psychosocial and systemic enablers are crucial for sustaining viral suppression.

Conclusion

The study confirms that TLD-based first-line ART is significantly more effective in viral suppression and immune recovery compared to TLE in Karnataka. PLHIV on TLD had lower VF, better CD4 recovery, fewer TB co-infections, and reduced mortality. Socio-cultural and health system factors impact adherence and outcomes. These findings advocate wider implementation of TLD and need for enhanced counselling and support services to reduce VF risk and improve quality of life.

Recommendations

The programme may scale up the use of the TLD regimen for first-line ART in all eligible PLHIV, strengthen routine viral load (VL) monitoring and adherence counselling, and improve IPT uptake and TB preventive measures. It is also essential to address psycho-social barriers through integrated mental health support and enhance record-keeping systems, such as SOCH, for better tracking and programme efficiency.

Limitations

The study faced certain limitations, including incomplete viral load data due to gaps in the SOCH system, potential recall bias in qualitative interviews, and a limited TLE cohort as most PLHIV were transitioned to the TLD regimen post-2020.

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Status and determinants of cross referral between National Tuberculosis Elimination Programme and National AIDS Control Programme in Puducherry

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Introduction and rationale

TB remains the leading opportunistic infection among PLHIV and a major cause of death (1). In 2022, WHO reported more than 10 million people continue to fall ill with TB every year (1). India contributes around 26% of global TB cases and faced considerable TB-HIV deaths (1, 2). TB–HIV deaths (1, 2). The dual epidemic poses challenges of overlapping symptoms, delayed diagnosis, poor adherence, and fragmented services (3). Despite bi-directional screening mandates (4), weak cross-referrals hinder early diagnosis (5). In Puducherry, only 44.6% of presumptive TB clients reached ICTCs after referral (6). Given these gaps, strengthening cross-referral between the National Tuberculosis Elimination Programme (NTEP) and the National AIDS Control Programme (NACP) is critical for achieving national and global targets for TB elimination and HIV control aligned with NACO's 95-95-95 goals.

Objectives

- Status of referral of HIV suspects (with any symptoms of TB) from the Integrated Counselling and Testing Centre (ICTC) to the Designated Microscopic Centre (DMC)
- Status of referral of cases of presumptive TB from the Designated Microscopic Centre (DMC) to the Integrated Counselling and Testing Centre (ICTC)
- To explore the various determinants of cross referral (facilitators and barriers/ bottlenecks) between NTEP and NACP from the perspective of stakeholders (provider and recipient) in Puducherry

Methodology

A Sequential Explanatory Mixed-Methods design was adopted, comprising two phases. Phase I (Quantitative) was a descriptive cross-sectional analysis of secondary data from January–December 2023. Phase II (Qualitative) involved in-depth interviews with purposively selected stakeholders—programme managers, healthcare providers (medical officers, counsellors, lab technicians), and beneficiaries—to explore facilitators and barriers to cross-referral until data saturation.

Eligibility criteria for selection of facilities: Five key facilities in Puducherry were included to represent different levels of care and governance: JIPMER (central tertiary), IGGGH & PGI (state tertiary), IGMC & RI (UT medical college), CHC Karikalampakkam (with DMC), and PHC Mudhaliarpet (without DMC). These sites were chosen to capture diversity in workload, administrative structure, and referral linkages under both central and state systems.

Inclusion criteria

- Clients registered with ICTC: Adults (≥18 years) with any WHO-defined 4S symptoms (cough > 2 weeks, fever > 2 weeks, weight loss, night sweats) and Referred for TB screening irrespective of HIV status.

- Clients registered with DMC: Adults (≥18 years) with presumptive TB and Referred for HIV testing irrespective of TB diagnosis.

For qualitative interviews: Stakeholders were selected purposively across hierarchical levels—programme managers, supervisory, and frontline staff—following a shared-leadership framework of NTEP and NACP. Beneficiaries were chosen based on registration status, type of service accessed, and willingness to participate. Interviews were conducted privately at convenient locations, ensuring confidentiality.

Exclusion criteria: Stakeholders unwilling or unable to provide informed consent were excluded.

Study population and sampling

The study included (i) HIV-suspect clients attending ICTCs and (ii) presumptive TB clients attending DMCs. Assuming 50% referral completion, 5% precision, and 95% confidence, the minimum sample size was 400 per group. Systematic random sampling identified presumptive TB clients referred to ICTCs.

Data collection and analysis

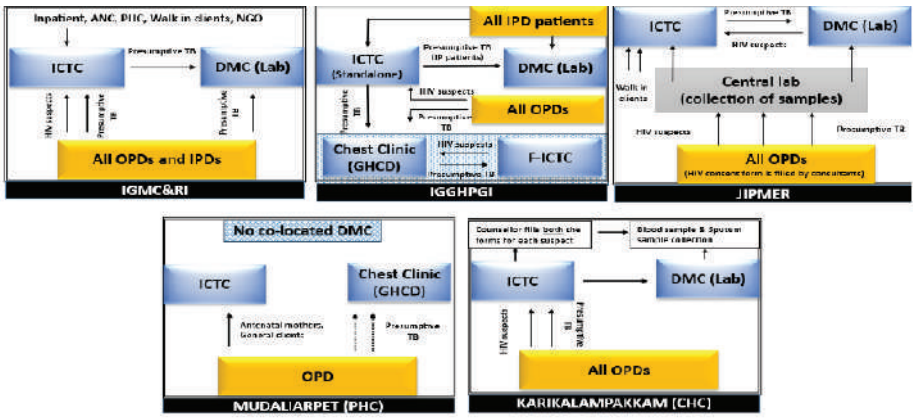
Line-listed data on socio-demographics, test results, and referral outcomes were extracted from facility registers. Indicators such as referral, reach, dropout, and positivity rates were computed as per the National Framework for Joint TB-HIV Collaborative Activities. Quantitative data were analysed using JAMOVI, with descriptive statistics and significance at $p < 0.05$; "Number Needed to Screen" (NNS) was calculated. Qualitative transcripts were thematically coded and analysed.

Findings

Analysis of the Current (existing) Cross referral Mechanism in the selected facilities:

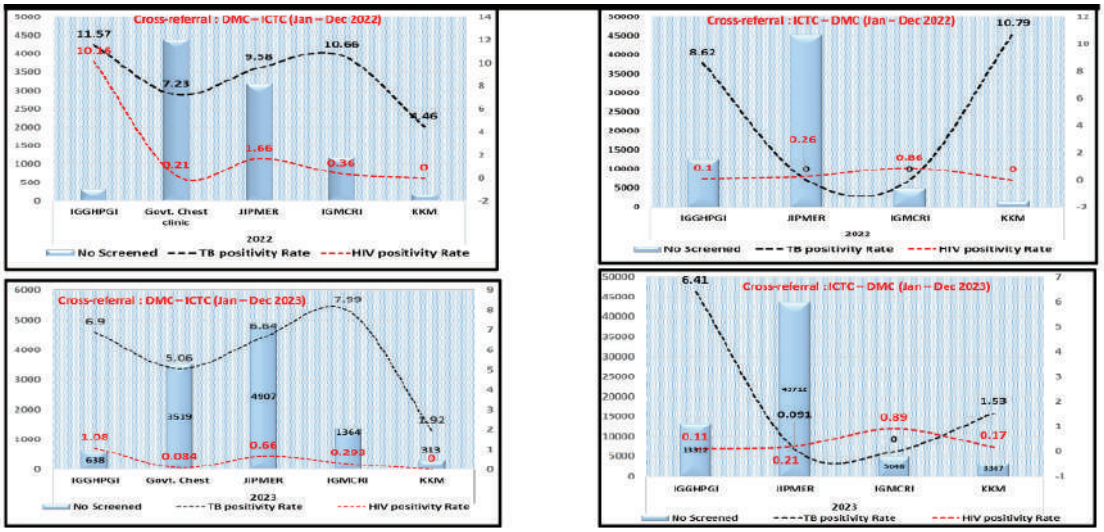
The existing framework of cross referral mechanism between the NACP and NTEP in the UT of Puducherry was an organised two-way referral system being executed through different pathways in the central and state government run DMCs and ICTCs. Collaboration being the cornerstone of effective referral mechanism, it was crucial to observe each process in the network to assess how each centre streamlined its individual cross referral strategy. The collaborative models adopted by each of the chosen health facility (study sample) was different from each other to provide integrated service for TB and HIV in Figure 1.

Figure 1 Structural and operational models of TB-HIV referral in selected health facilities



Quantitative findings: A total of 463 HIV-suspect clients with WHO-defined 4S symptoms were registered at ICTCs and 460 presumptive TB cases at DMCs (January–December 2023). Most ICTC clients were younger than 45 years (68%), whereas 71% of presumptive TB clients were aged 45 years or above. Females constituted 57% of ICTC clients, while 53% of DMC clients were male. From DMC to ICTC, the facility reach rate was highest at CHC Karikalampakkam (90.4%) and lowest at IGMC&RI (25%). JIPMER and the Government Chest Clinic showed moderate reach rates (45.7% and 58.3%, respectively). In contrast, referrals from ICTC to DMC showed very low completion rates, ranging from 2.5% (JIPMER) to 11.5% (CHC Karikalampakkam), indicating considerable patient dropouts (Figure 2).

Figure 2 Trend (2022–2023) of 'Client Drop Out' and 'Drop out rates' From DMC to ICTC among the Registered Clients at the Selected Facilities of UT of Puducherry

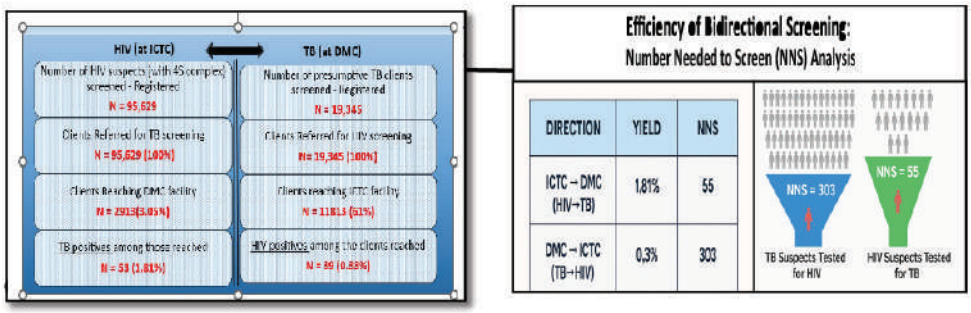


Positivity rates: Among 10,741 presumptive TB clients in the selected facilities, 663 were confirmed TB-positive, yielding an overall TB positivity rate of 6.17%. HIV testing among these presumptive TB clients (n=5,610) identified 22 HIV-positive cases (0.39%). Of 65,449 individuals screened for HIV, 158 were HIV-positive (0.24%). TB screening of HIV-suspect clients (n=2,099) detected 38 TB cases (1.81%). These results reflect a higher yield of TB among presumptive cases and low HIV detection among TB patients.

Efficiency of bi-directional screening (Number needed to Screen (NNS) Analysis)

HIV suspects screened for TB yielded 1.81% positivity with an NNS of 55. In contrast, TB suspects screened for HIV had a lower yield (0.33%) with an NNS of 303 : Figure 3 suggesting lower efficiency but continued importance, as even few HIV cases detected among TB patients significantly impact outcomes and mortality.

Figure 3 The 'Cross Referral Indicators' and the NNT Analysis for UT of Puducherry



Qualitative findings: Within the qualitative landscape, In-depth interviews yielded rich insights into the facilitators and barriers shaping the referral interface. Facilitators encompassed proactive provider-initiated testing, co-located facilities that eased travel and logistical constraints, and NGO/CBO engagement in mobilising high-risk populations. Conversely, stigma, fear of discrimination, limited manpower, inconsistent counselling, and weak referral tracking emerged as recurrent themes under potential barriers.

This mixed-methods study identified significant gaps in bi-directional referral between NTEP and NACP in Puducherry. While TB positivity among presumptive cases was 6.17%, HIV detection among TB patients was only 0.39%, indicating missed opportunities for integrated screening. In contrast, TB detection among HIV-suspect clients was higher (1.81%) with an efficient NNS of 55 (Fig 3). Referral completion from ICTCs to DMCs remained low (2.5–11.5%), and DMC-to-ICTC referrals, though better (25–90.4%), showed wide inter-facility variation. Co-located services, provider-initiated testing, and NGO engagement facilitated referrals, while stigma, workforce limitations, and poor tracking hindered follow-up. Strengthening data interoperability between Nikshay and SOCH, joint review mechanisms, and stigma-reduction efforts are essential to enhance referral efficiency and achieve TB elimination and HIV 95-95-95 targets.

Recommendations

To improve TB-HIV cross-referral efficiency, a real-time digital tracking system should be implemented to monitor referrals and reduce dropouts. Capacity-building programmes for healthcare providers are essential to enhance counselling and referral practices. Integration of services through co-located testing and streamlined workflows will reduce logistical barriers. Partnering with NGOs and community-based organisations can improve client mobilisation and follow-up. Additionally, stigma-reduction campaigns should be prioritised to encourage timely testing and treatment-seeking behaviour among high-risk populations.

Limitations

This study relied on secondary data from facility records, which may have inconsistencies or incomplete entries affecting accuracy. As data were drawn from selected facilities, findings may not be fully generalisable to other regions. The cross-sectional design limits the ability to establish causality between identified factors and referral outcomes. Social desirability bias may have influenced responses during qualitative interviews. Finally, lack of long-term follow-up data restricted assessment of treatment outcomes and sustained referral compliance.

Acknowledgement

We extend our profound gratitude to the National AIDS Control Organisation and the Pondicherry AIDS Control Society for their invaluable support and funding. We deeply appreciate the guidance of Dr. Chitra Devi, former Project Director; Dr. A. Arulvisagan, Project Director; Dr. I. Volantine Prabhakaran, Joint Director (BSD); and Mr. T. Balamurugan, Deputy Director (SI). Our sincere thanks to the State TB Cell, Puducherry, Dr. C. Venkatesh, State TB Control Officer, and Dr. R. Chandrasekaran, State TB-HIV Coordinator, as well as healthcare providers, NGO partners, clients, and our research team for their unwavering dedication

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Factors contributing to linkage loss among clients diagnosed positive for HIV and their linkage to Anti-Retroviral Therapy Centres in Punjab

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Introduction and rationale

HIV/AIDS continues to be a major public health challenge in India, with Punjab emerging as a high-priority state due to its HIV prevalence (0.42%) being double the national average (0.20%) (1). Despite significant progress in reducing new infections, a critical gap persists in retaining patients on antiretroviral therapy (ART) (2). Lost-to-follow-up (LFU) rates remain alarmingly high, driven by complex factors such as stigma, migration, systemic inefficiencies, and socio-economic barriers (3). Not only has this, but the state also still had a long way to go as far as the progress on 95-95-95 targets for 2030 is concerned. As against the national statistics of 79%, 86%, and 93%, the respective figures for Punjab were 87%, 86%, and 90% in 2022-23 (4).

This study, conducted across Punjab's high-burden districts, seeks to identify the key determinants of LFU and develop actionable strategies to improve retention. Given Punjab's unique challenges—including high seropositivity among vulnerable population (1.17% vs. 0.47% nationally) and low partner testing rates—this study provides a localised evidence base to strengthen HIV programme delivery (4).

Objectives

- To identify factors (both qualitative and quantitative) that have an impact on the probability of a patient on anti-viral therapy (ART) being lost to follow-up (LFU)
- To develop a predictive tool based on significant factors that can identify possible patients who might be LFU during ART
- To suggest a context-specific policy prescription tool, both at micro- and macro-economic levels, to understand key cost and risk drivers

Methodology

This mixed-methods study employed a convergent parallel design, combining retrospective cohort analysis (quantitative) with ethnographic approaches (qualitative). The retrospective data about the adult HIV/AIDS patients (both on ART and those who are LFU), registered at the selected ART centres from May 2017 up to the time of data collection for the present study (May to July 2024), were extracted from the medical records. A primary limitation of this type of design is that the available dataset may be incomplete, inaccurate, or the type of data measurements undertaken at the facilities may not match the research question (5). Consequently, out of 86205 registered patients on ART (2115 being LFU), only 85457 (1367 being LFU) could be included, and these too had complete data about only ten variables, which were selected as probable predictors from literature review and expert opinion.

The study was conducted across five high-burden ART centres in Punjab (Amritsar, Ludhiana, Jalandhar, Patiala, and Bathinda), selected based on LFU rates and patient volume. The combination of multiple data sources (medical records from ART centres, semi-structured interviews, non-participant observations, and focused group discussions), referred to as "triangulation," provided a comprehensive understanding of the issue of loss

of linkage to ART (6). The methodology and findings of this qualitative research are presented by the standards for reporting qualitative research (SRQR) (7). For the quantitative analysis, the data collected included: demographics (age, sex, typology), clinical markers (CD4 count, viral load, TB co-infection), adherence status, and Isoniazid Preventive Therapy (IPT) records. Binary logistic regression was used to identify predictors of LFU.

For the qualitative component, data were collected through 25 in-depth interviews (IDIs) with LFU patients. 5 focus group discussions (FGDs) with ART staff (doctors, counsellors, outreach workers), non-participant observations at ART centres, and Telephonic tracking of 10% of LFU patients at each ART centre (systematic random sampling). Thematic analysis (inductive coding) was done to identify barriers to linkage with ART. Triangulation of quantitative and qualitative findings was integrated to validate predictors (e.g., IDU status, poor adherence) and contextualise systemic gaps.

Ethical approval from the Institutional Ethics Committee of Panjab University was taken before the commencement of the study (Vide letter no EC-D-2401/256, dated 14.01.24). Informed consent was obtained from study participants, and each was assigned a unique identification code. Anonymity and privacy were maintained at every step as no personal identifiers were used or recorded at any time during the study.

Findings

The study revealed that lost-to-follow-up (LFU) in Punjab's ART programme is driven by interconnected clinical, behavioural, and systemic factors. While quantitative analysis identified high-risk groups (e.g., young male IDUs, poor adherers), qualitative insights exposed deeper challenges: stigma eroded trust in healthcare systems, drug stockouts disrupted treatment continuity, and invalid contact details rendered telephonic tracking ineffective. The key predictors identified through quantitative analysis included: younger age (OR=0.97, $p < 0.0001$), males (OR=1.54, p=0.001), and IDU typology (OR=1.87, $p < 0.0001$), Poor adherence (<80%: OR=3.74, $p < 0.0001$), Having no TB co-infection (OR=0.54, p=0.015), Not being on Isoniazid prophylaxis therapy (OR=0.54, $p < 0.0001$).

To apply the logistic regression model, stratified sampling based on ART Centre, Sex, and Age was performed to select a subset of the control group (On ART) in a manner that ensured balance with the case group (LFU) while ensuring proper representation. After stratification and removal of all rows with missing or inconsistent data, a total of 1049 cases and 1164 controls were included, resulting in an approximately 1:1 ratio between the two groups. This approach was used to build the logistic model with improved predictive power.

To develop an efficient model for predicting the probability of Loss to Follow-Up (LFU), we utilised stepwise model selection based on the Akaike Information Criterion (AIC). Out of the 12 independent variables, only 6 variables were found to be significant (p-value less than 0.05) after applying forward stepwise (likelihood) binary logistic regression analysis. (Age, Sex, Typology, TB Diagnosis, treatment adherence, and IPT status). The model performance shown by area under the curve (AUC) came out to be 0.76 (moderate discrimination) with a sensitivity of 65.2% and specificity of 74%.

The qualitative insights revealed that stigma and fear of lack of confidentiality (*"People judge my character every day. I changed my number to avoid calls."* (IDI, Ludhiana)) came out as a major barrier to linkage with ART. FGDs revealed that 35% of LFU patients deliberately avoided follow-up due to fear of disclosure. Systemic barriers, including drug stock-outs (*"Last time I came, medicines weren't available. I didn't return."* (IDI, Patiala)), and staff shortages (counsellors handled 200+ patients/day, limiting personalised care) compounded the already fragile linkage eco-system. Telephonic tracking of a sample of LFUs further revealed that almost 70–85% of LFU contact numbers were invalid (switched off/wrong). Only 6.5% of reached patients agreed to resume ART.

Conclusion

In conclusion, the current logistic regression model can bring a discernible change in the incidence of LFU patients in the treatment spectrum of HIV/AIDS patients registered at the ART centres, as it may indeed facilitate the prediction of a future LFU status at ART initiation itself. A mandatory checklist system must be initiated to identify such individuals who are at a high risk of being LFU (in the presence of predictors). Once identified, strict monitoring of their adherence status, spouse testing status, ambulatory status, provision of information, education, and Communication (IEC) materials in vernacular languages, and counselling status should be done. This, along with the remedial measures suggested for infrastructure upgradation, the recruitment of appropriate human resources, and rigorous behavioural and counselling training for the staff, would bring about significant improvement.

Recommendations

Urgent recruitment of staff at all levels of care delivery has to be initiated. Optimal use of the SOCH portal for data management across all districts should be ensured. Serious effort has to be made to bring in value-based changes in the ART process, including 3-month prescriptions and community pick-up points. Financial aid schemes for PLHIV on ART can be initiated, in line with already running pension schemes in neighbouring states of Himachal Pradesh and Haryana.

Limitations

While offering a robust triangulated analysis, this study has its limitations. The use of a retrospective cohort design necessitated the extraction of data from existing ART centre records. This led to significant inconsistencies in how variables were recorded across centres, introducing potential bias and limiting standardisation.

Key data such as adherence levels, 4S status, TB co-infection, IPT initiation, and patient typology were missing in a substantial number of cases. These gaps reduced the precision and statistical power of the logistic regression model. The findings are also geographically limited to five high-burden districts in Punjab, which may affect their generalisability to other regions with different structural and socio-cultural contexts.

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Drug adherence and quality of life among People Living with HIV/AIDS receiving Antiretroviral Therapy at ART centers in Western Rajasthan

AUTHORS

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Introduction and rationale

The human immunodeficiency virus (HIV) infection remains a significant public health impacting the Quality of Life (1). However, the development of highly active antiretroviral therapy (HAART) has revolutionised HIV management, transforming it into a chronic yet manageable condition (2). Consequently, the focus has shifted from mere survival to enhancing the quality of life for People Living with HIV (PLHIV). They face severe challenges in terms of the medical management of their disease, stigma, discrimination, psychosocial issues associated with HIV infection (3). These factors severely hamper the quality of life and affects the adherence to therapy and potentially increases their risk of transmission (4). There is literature available on HIV infections, mortality, and treatment in India (5). Few studies are done on QoL among PLHIV in India, but there is huge variation in each domain. Further, it is seen that the consistent adherence to ART medication is related to good quality of life (6). There is lack of studies assessing the level of drug adherence and impact on quality of life among PLHIV in Rajasthan.

Objectives

- To assess the level of ART adherence among PLHIV receiving Antiretroviral therapy at ART centers in Western Rajasthan
- To understand the barriers and facilitators for ART Adherence among PLHIV
- To measure the Quality of Life among People living with HIV
- To assess the association of ART adherence with the QoL

Methodology

The study was a mixed-method, cross-sectional study aimed to assess drug adherence and quality of life among PLHIV receiving Antiretroviral therapy at ART centres in Jodhpur and Pali. A sample of 710 PLHIV was enrolled using consecutive sampling. PLHIV, aged 18 years & above, on ART for more than 6 months were included. Patients not providing written informed consent were excluded.

Drug adherence data was collected using the Adult AIDS Clinical Trials Group (AACTG) questionnaire. The Quality of life was assessed using the WHO QOL HIV BREF scale, covering six domains: physical well-being, psychological state, level of independence, social relationships, environment and spirituality. Each item was rated on a 5-point Likert scale, with scores ranging from 31 to 155.

Qualitative component: In-depth interviews (IDIs) with 35 participants (5% of the sample) and key informant interviews (KIIs) with ART centre staff were conducted to explore barriers and facilitators of drug adherence.

The study received clearance from the Institutional Ethics Committee (Ref. No. AIIMS/IEC/2023/4879).

Data was analysed using SPSS v.23. Descriptive statistics (frequency, percentages, mean, median) and inferential statistics (unpaired t-test, Mann-Whitney U test, ANOVA, chi-square test) were applied. A p-value of <0.05 was considered statistically significant.

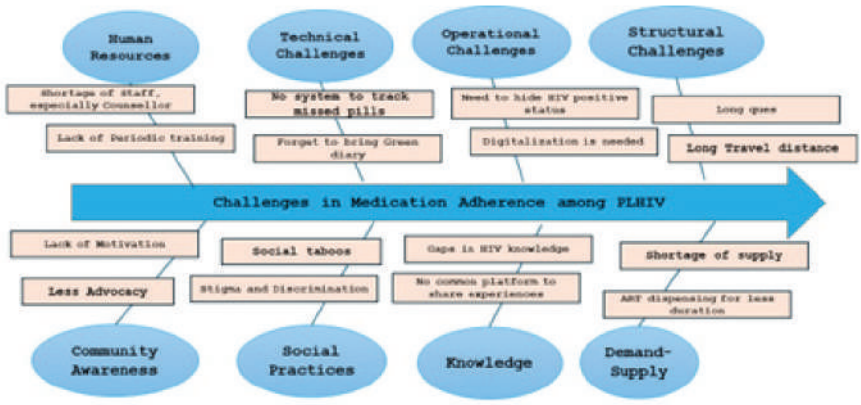
Findings

In the study, half of the participants were males, with one identifying as transgender. The average age was 45.45 years (± 10.35). Most participants (98.2%) belonged to the "General clients", with minimal representation from other groups like IDU, H/TG, and migrants. Marital status showed 61.6% married, 32.9% divorced/separated/ widowed, and 6% unmarried, while 31.3% were illiterate and 30% were unemployed.

In this study, the level of adherence to antiretroviral therapy (ART) among participants is notably high, with 96.2% reporting adherence rates exceeding 95%. Only a small fraction, constituting 3.8% of the participants, reported adherence levels below 95%. The most common reason for non-adherence to ARV drugs being away from home (46.8%), being busy with other things (43.6%), simply forgetting (25.5%) and ran out of pills (24.4%).

From In-depth interviews, the themes representing the challenges were operational, technical, and structural as well as the lack of human resources. Lack of awareness among the community and social and cultural taboos was one of the main issues in the themes related to the community level. Further, the majority of the participants reported a gap in the supply of the medicines.

Figure 1 Fishbone diagram depicting challenges in ARV Medication Adherence



The psychological domain of QoL had the highest mean score (22.9±3.51), whereas the environmental domain had the lowest (13.9±1.89).

Despite 94.5% reporting positive mobility and physical health outcomes, a significant proportion of participants (89.5%) experienced negative feelings. Satisfaction was high in areas like relationships (91.4%), sex life (79.2%), and social support (91.4%). Nearly half of the participants (54.8%) were unaffected by stigma, and 82.4% reported minimal fear about the future. A higher percentage of adherent individuals report a good or better quality of life compared to non-adherent individuals.

Conclusion

The research provides a better understanding of the levels of adherence to anti-retroviral therapy among the People living with HIV as well as the quality of life. The adherence to medications has improved a lot owing to the changes in the National treatment guidelines for HIV/AIDS. The improvement has been impacted a lot by the "One pill, one-day" initiative by NACO, as higher drug adherence was shown by people on fixed drug combinations of TLD. One of the major issues among the participants with lower adherence was the difficulty in access to ART centers. The assessment has shown that majority of the people have better quality owing to good adherence to medications. Lack of support from the community and the non-acceptance among the family members is one of the major challenges.

Recommendations

The psychosocial domain of QoL scored the lowest, underscoring the persistent impact of stigma and discrimination highlighting the need for focused interventions. The patient load in the ART centres could be reduced by the allocation of new ART centers in the areas requiring the services. Addressing operational and community-level barriers could further improve ART adherence and enhance the overall well-being of people living with HIV in this region. Drug adherence can be maintained through constant support from counselors and caretakers. The quality of life among the participants could be improved by creating awareness among the family members as well as the community.

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Study on quality of counselling at ART centers of West Bengal

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Introduction and rationale

People at increased risk of acquiring HIV should seek comprehensive and effective HIV prevention, testing and treatment services. HIV infection can be diagnosed using simple and affordable rapid diagnostic tests, as well as self-tests. It is important that HIV testing services follow the 5Cs: consent, confidentiality, counselling, correct results and connection with treatment and other services. People diagnosed with HIV should be offered counselling and linked to antiretroviral treatment (ART) as soon as possible following diagnosis and periodically monitored using clinical and laboratory parameters, including viral load testing.

Retention in antiretroviral therapy (ART) care is a key indicator of HIV treatment success as it improves adherence, stops the chain of transmission, is critical for better treatment outcomes and prevention of drug resistance (1, 2). NACP provides a range of counselling services to the population at risk as well as to those who are affected by HIV. Counselling is the most important aspect for adherence and follow up. Poor adherence is the most common cause of therapeutic failure. India's NACP considers an optimum adherence of ≥95% to ART in last 3 months.

The study looked at assessing the quality of counselling from the perspective of both the client and the service provider as well as understand facilitators and barriers for the same. Qualitative research techniques esp. Focus Group Discussions (FGDs) were used that would help elicit needs, expectations, behaviours and barriers to health care services (3-5).

Objectives

- To assess quality of counselling among PLHIV and service providers
- To understand the facilitator and barriers in counselling among PLHIV

Methodology

A mixed method study with explanatory sequential design was conducted at ART centre of Medical College, Kolkata, MR Bangur Hospital, North Bengal Medical College, Murshidabad Medical College and Midnapore Medical College. Descriptive cross-sectional design was applied for exit interview of participants. Interview of counselors were also conducted pre-designed pre-tested semi structured questionnaire. A total of 5 FGDs were conducted (1 in each ART centre). Each FGD was with 6-8 participants. FGDs carried out at the ART centre after the clinic timings. At the end of the FGD, a summary of the discussion was made and presented to the study participants. Corrections and clarifications were accordingly made to the summary. The author (PI) was the moderator in the FGDs conducted, while the Postgraduate trainee and counsellor posted at the ART centre took notes. Topics discussed in the FGDs were those pertaining to the perceived quality of counselling and satisfaction among PLHIVs attending ART centres. The order in which topics were discussed was flexible, starting from the general issues and gradually flowing into more specific ones. The participants were assured of maintaining confidentiality. FGD participants were excluded in the quantitative component.

The study included those PLHIV and key populations, who are registered in ARTCs/TIs in West Bengal in last 5 years from the date of interview. The study participants were only those who are 18 years old or above and who gave written consent for the study.

Confidentiality was ensured at every step of data collection, compilation, analysis and storage. Ethical clearance was obtained from an Institutional Ethics Committee. A written informed consent in local language of choice of the participant was collected. In all stages, anonymity was maintained.

Findings

Mean age of beneficiaries was 37 years. (SD 12.080). Around 459 beneficiaries were interviewed and among them 303 (68%) were male, 150 (32.7%) were female and 6 (1.3%) were transgender. Most of them (305, 66.4%) resided in rural areas and 261 (56.9%) were currently married. Only 107 (22.3%) participants were illiterate. Employment reported was diverse- agriculture or unskilled labor, and a notable portion being homemakers or employed in service roles.

Most individuals (71.7%) found out about the ART center via government health facilities. Around 13.1% were referred by private doctors. When it comes to treatment duration, 30.5% patients reported receiving treatment for 6 months to 1 year. Around 28.8% have been in treatment for over 2 years, while 24.8% have been in treatment for 1 to 2 years. A smaller fraction (15.9%) has been in treatment for less than 6 months. Most beneficiaries (93%) didn't face any problems during registration at ART centre but some faced problem regarding locating the centre in the hospital.

Table 1 Source of information, duration of treatment

Variable	Number (%)
Source of information about ART centre	
Referred by Counsellor	7 (1.5)
Referred by private practitioner	60 (13.1)
Referred by NGO	18 (3.9)
Information from hoardings/TV/Newspaper	3 (0.7)
Govt. health facility	329 (71.7)
Referred by others	42 (9.2)
Duration of treatment	
Less than 6 Month	73 (15.9)
6 Month to 1 year	140 (30.5)
1-2 year	114 (24.8)
More than 2 year	132 (28.8)
Facing problem in registration	
Yes	32 (7)
No	427 (93)
Meet Counsellor each visit	
Yes	442 (96.2)
No	17 (3.7)
Meet Doctor in each visit	
Yes	343 (74.3)
No	116 (25.3)
Meet with Healthcare Provider	
Doctor first, then Counsellor	48 (10.5)
Counsellor first, then Doctor	411 (89.5)

The results revealed that the majority (83.9%) are well aware about their treatment being lifelong. However, 75.6% are not aware of potential side effects of ART. Encouragingly, most (88.7%) recognises the importance of taking their ART medication daily, though a few (11.3%) were unsure. A majority of patients (72.5%) understood the consequences of missing a dose, while more than one-fifth (27.5%) do not. When it comes to receiving information about adherence, around 63% were guided by both counsellor and doctor consultations, although some relied solely on doctors (25.3%), and few by counsellors only (11.8%).

In terms of follow-up and testing, 78.4% attend monthly follow-up visits, while others were advised for a three-month schedule (16.5%) while still others told about variable schedule (1.5%). Regarding sample collection, nearly half (49%) had both CD4 and viral load samples collected, whereas 43.1% only had CD4, and 3.5% focused solely on viral load. Before testing CD4 and viral load, 60.1% received counselling at the time of testing, though 39.9% reporting not receiving the same. On the counselling and support front, a majority of patients received nutritional counselling (71.2%), general hygiene counselling (73.9%), and cough hygiene advice (79.7%). Visual aids like charts or flip books were seldom used (12.9%), leaving the majority of patients (87.1%) without such demonstrations. Around 63.6% have had their partners tested and less than half have had their children tested (44.4%). Social support also reflects a gap, as most are not informed about social welfare schemes (65.4%). Only one third are benefiting from social welfare schemes (34.6%). About 95% patients feeling that their problems were well listened to by the counsellors. Concerns about discrimination or stigma appear minimal (96.3%). Condom use was not demonstrated to everyone (43%), and just under half currently use them (47.1%). Concerning knowledge about medication, very few individuals (5.9%) are aware of the name of their ART medication. When asked about prescribed drugs for Opportunistic Infections (OI), 9.1% responded with an affirmative, while the majority (90.8%) said no. All patients received ART drug from ART centre.

Qualitative analysis shows lack of awareness on side effects and common drug and food interaction. Loss of wages and long waiting time in ART centre was another concern for patients. Patients felt that they were not counselled enough about the available social welfare schemes. Travelling from long distance to ART centre was also a concern reported. Stigma and fear of disclosure is still there as the patients were not comfortable showing green book at local health care centre, and they also concealed ART medicine from friends and family members. To prevent loss of wages, patients preferred doing routine blood test outside. There was a lack of clarity about disposal of condom and necessity of condom usage if both partners were on ART. The patients also reported need for support if condoms rupture during intercourse and post-exposure prophylaxis to the negative partner, while also highlighting the need for telemedicine services regarding ART.

Effectiveness of counselling was 55.9%, which was calculated through a composite score. For each variable, cumulative percentage was calculated (if it was more than 80 %, a score of 2 was given, for 50-79%, a score of 1 was given and for less than 50%, 0 score was given. Only 50 percent of interviewed counsellors used chart, flip book and correctly did the pill count. Most of the counsellors interviewed under the study reported job satisfaction.

Conclusion

A recent evaluation of counseling services revealed some gaps in key areas. Many people lacked awareness about missed doses, ART side effects, and the importance of nutrition. Diet, drug interactions, and exercise were not discussed in detail, and some patients did not see a doctor during every visit. A significant number were not counseled before CD4 and viral load testing. Social welfare schemes were not discussed often. Condom use was not demonstrated, and proper disposal was not explained. Long wait times, lack of space, and missing amenities were barriers. Despite some community stigma, the availability of counselors and medicines were some of the positives.

Recommendations

To improve HIV care, counseling should focus on managing side effects, missed doses, giving information on nutrition and social welfare schemes, with visual aids and condom use education. Condom usage demonstration, disposal of condom should be included in counselling. Staff should be trained to foster better coordination. Group counseling for high-risk groups can be considered. Better waiting areas, availability of free toilets, and privacy are essential. Streamline queue systems and use scheduling software to reduce patient load in a single day.

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STRATEGIC INFORMATION

Stigma and discrimination among People Living with HIV and Key Population in Andaman & Nicobar Islands

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Introduction and rationale

HIV-related stigma and discrimination remain formidable barriers to prevention, care and treatment worldwide, disproportionately affecting People Living with HIV (PLHIV) and key populations (KP) such as female sex workers, men who have sex with men and transgender individuals (1). These attitudes not only compromise healthcare-seeking behaviours but also perpetuate psychological distress, social exclusion and poor treatment adherence, thereby fuelling the epidemic (2, 3).

India's diverse socio-cultural landscape shapes unique patterns of stigma and discrimination (4). While the National AIDS Control Organisation (NACO) has implemented multiple interventions to address these challenges, the Andaman & Nicobar Islands present distinct complexities due to geographical isolation, cultural diversity and limited healthcare access.

Evidence from this region remains scarce, impeding context-specific policymaking. This study was undertaken to bridge this knowledge gap by systematically assessing the knowledge gaps in transmission of HIV and prevalence of stigma and discrimination among PLHIV and KPs in the islands. The findings aim to inform targeted strategies to foster inclusive healthcare environments and enhance quality of life for marginalised communities.

Charles et al. (2012) conducted a community-based cross-sectional study among 400 PLHIV in Tamil Nadu revealing that 27% of PLHIV experienced severe overall stigma with high rates of severe personalised stigma (28.8%), negative self-image (30.3%), perceived public attitude stigma (18.2%) and disclosure concerns (26%). The study found 12% had severe depression and 34% reported poor overall quality of life (QOL), particularly in social (51.2%), physical (42.5%), psychological (40%), and environmental (34%) domains. Stigma also tripled the risk of severe depression (OR: 3.4, 95% CI: 1.6–7.0) while negative self-image doubled it (OR: 2.1, 95% CI: 1.0–4.1). Severe depression itself increased poor QOL likelihood by 2.7-fold (OR: 2.7, 95% CI: 1.1–7.7). Paradoxically, ART access correlated with severe stigma (OR: 2.2, 95% CI: 1.2–4.1) and poor QOL (OR: 2.1, 95% CI: 1.1–4.1) whereas high social support significantly improved QOL outcomes.

Objectives

- To understand the level of stigma and discrimination among PLHIV and Key Population
- Identify the determinants of stigma and discrimination

Methodology

A cross-sectional study involving quantitative research methods was conducted, across all three districts of the Andaman & Nicobar Islands after obtaining approval from the Institutional Ethics Committee (ANIIMS/IEC/2023-24/01).

The study population comprised:

- PLHIV registered at the FI-ART Centre, GB Pant Hospital, Sri Vijaya Puram
- Key populations (MSM, TG, FSW) enrolled through TI-NGOs
- Additionally, in this study, adult family members who regularly accompanied PLHIV for HIV-related services to healthcare facilities were also recruited

Universal sampling was applied for PLHIV, systematic random sampling for KPs and simple random sampling for family members. A total of 316 participants were enrolled i.e., PLHIV (n=115), family members (n=119), FSW (n=57), MSM (n=21) and TG (n=4).

Data collection employed NACO developed stigma and discrimination questionnaire covering socio-demographics, HIV knowledge, disclosure experiences, healthcare access, mental health, and social support. For KPs, interviews were facilitated through the support of TI-NGOs to ensure confidentiality and trust.

Data were entered in MS Excel and analysed using SPSS version 28. Descriptive statistics summarised quantitative variables while Chi-square, Fisher's exact test and Z tests assessed associations. A p-value <0.05 was considered statistically significant.

Quality assurance measures included standardised tools, training of data collectors, and strict adherence to ethical protocols including informed consent, confidentiality safeguards and voluntary participation.

Findings

People Living with HIV

The study of 115 PLHIV revealed a mean age of 40.5 years with a majority (75.7%) in the economically productive 30-60 age bracket. Most (89.6%) resided in South Andaman with significant economic vulnerability as 30.4% reported no income. While 78.2% knew condom use prevents transmission and 84.3% were aware that having one uninfected, faithful sexual partner reduces the risk. Notably, 14.8% held misconceptions about transmission via casual contact. Disclosure was low, with only 33% disclosing their status beyond healthcare providers. Enacted stigma was notable as 7.8% reported that a healthcare worker publicly disclosed their status. 49.6% saw equal career opportunities while 27% perceived inequality. More than 80% were unaware of workplace policies however 53% advocated for them. Almost three-fifth (59.1%) of participants experienced sadness/ hopelessness and 53.9% felt anxiety about others' reactions. A significant 20% interrupted medication due to disclosure concerns, and only 8.7% utilised support services despite 53% acknowledging their availability. Males and participants with higher education demonstrated significantly better knowledge.

Table 1 PHIV Knowledge and Awareness Assessment

Questions	Yes	No	Don't Know
Can HIV be transmitted through casual contact (e.g., hugging, shaking hands, having food together and living in the same household)?	17 (14.8)	89 (77.4)	9 (7.8)
Can HIV be transmitted through Mosquito bites?	17 (14.8)	90 (78.2)	8 (7)
Is it possible to reduce the risk of HIV transmission through regular condom use?	90 (78.2)	14 (12.2)	11 (9.6)
Is it possible to reduce the chances of getting HIV/ AIDS through having just one uninfected faithful sexual partner?	97 (84.3)	7 (6.1)	11 (9.6)

Can a healthy-looking person have HIV/AIDS?	85 (73.9)	20 (17.4)	10 (8.7)
Have you participated in any HIV AIDS awareness campaigns in the last 12 months?	23 (20)	87 (75.7)	5 (4.3)
Do you feel that these campaigns have been effective in reducing stigma?	65 (56.5)	34 (29.6)	16 (13.9)

Experience of Disclosure

Out of 115 participants, only 38 (33%) disclosed their HIV status to individuals outside healthcare providers, while 77 (67%) chose not to disclose. Among those who had disclosed their HIV status, the participants received mixed responses. The majority of participants reported receiving support from children, family members, friends, spouses or their community. On the other hand, a small subset reported being met with fear, criticism and anger. One participant shared that a sibling reacted negatively and even resorted to physical aggression.

Table 2 Experience of Disclosure

Experience of Disclosure	Yes	No
Have you disclosed your HIV status to anyone outside of healthcare providers?	38 (33)	77 (67)

Key Populations

The 82 KPs (57 FSWs, 21 MSM, 4 TGs) were predominantly young with most FSWs (66.7%) and all TGs aged under 30 years. Knowledge gaps were severe as only 30.4% knew that condoms reduce transmission risk and 57.3% denied a healthy-looking person could have HIV. A staggering 37.8% reported their KP identity was disclosed by a healthcare worker. Healthcare avoidance was extreme with over 93% skipping visits to various facilities due to identity disclosure fears. Internalised stigma was reported a 74.3% experienced sadness/hopelessness and 59.7% reported that their self-esteem was affected. Social isolation was intense with 85.3% experiencing rejection from close relations. Almost three-fifth (59.7%) of participants sought support from groups but 68.2% felt insufficient services were available for key populations.

Table 3 Marital status, spouse HIV testing, children and sexual partner information by Key Population

Variables	Categories	FSW	MSM	TG
Current marital status	Currently Married	44 (77.19)	5 (23.81)	1 (25)
	Never Married	13 (22.81)	16 (76.19)	3 (75)
Has your Spouse ever tested for HIV (if currently married)	Don't know	13 (22.81)	16 (76.19)	3 (75)
	No	42 (73.68)	5 (23.81)	1 (25)
	Yes	2 (3.51)	0 (0)	0 (0)
What is HIV status of your spouse (if currently married & tested for HIV)	Positive	0 (0)	0(0)	0 (0)
	Negative	2(3.51)	0 (0)	0 (0)
Number of children (biological children)	No	25 (56.82)	5 (100)	1 (100)
	Yes	19 (43.18)	0 (0)	0 (0)
If yes, please specify, the number of your children	1	7 (36.84)	0 (0)	0 (0)
	2	9 (47.37)	0 (0)	0 (0)
	3	3 (15.79)	0 (0)	0 (0)

Do you have any sexual partner (other than spouse if married)	Don't want to share	29 (50.88)	0 (0)	4 (100)
	Yes	28 (49.12)	21 (100)	0 (0)
What is HIV status of your sexual partner (other than spouse)	Don't want to share	4 (14.29)	15 (71.43)	0 (0)
	Negative	0 (0)	1 (4.76)	0 (0)
	Positive	2 (7.14)	5 (23.81)	0 (0)
	Unknown	22 (78.57)	0 (0)	0 (0)

Disclosure among KP

Table 4 revealed that a significant majority (87.4%) of participants had not disclosed their KP identity status to anyone outside of healthcare settings. Among those who did disclose their identity (12.6%), the experiences varied from reporting fear (5.9%) or being shocked (4.2%) while others found the response supportive (6.7%). The high percentage of non-disclosure suggests a potential concern or stigma associated with revealing their identity outside of professional healthcare contexts.

Table 4 Disclosure of KP identity status and experiences of disclosure among participants

Question	Response	Frequency (%)
Have you disclosed your KP identity status to anyone outside of healthcare?	No	104 (87.39)
	Yes	15 (12.61)

Family members of PLHIV

Family members were primary caregivers who frequently accompanied PLHIV to healthcare facilities. Among 119 family members, 80.6% were currently married and 71.9% of their spouses had been tested for HIV, with 49.3% testing positive. Knowledge was relatively better as over 77% correctly rejected myths about casual contact and mosquito bites. However, non-disclosure of their relation to a PLHIV was extremely high (87.3%), driven by fear of judgment. While most reported no overt discrimination in healthcare settings, 13.4% had their identity disclosed by a worker.

Conclusion

The study revealed that internalised stigma and fear of disclosure were the predominant barriers faced by PLHIV with 20% skipping ART, 18.3% delaying care and 9.6% avoiding disclosure due to anticipated discrimination. While overt denial of services was rare, 7.8% reported public disclosure of their HIV status by healthcare workers. Knowledge gaps were striking among KPs with only 30.4% aware of condom protection and 20.7% aware of asymptomatic transmission. Family members experienced secondary stigma including 14.8% discrimination in education and 7.8% at workplaces underscoring the need for targeted, multi-level interventions.

Recommendations

- In Nicobar district and tribal areas, involvement of Tribal Captains in HIV campaigns to address stigma at the community level.
- Mandate frequent sensitivity training for healthcare workers at ART centers every 3 months to address confidentiality breaches (reported by 7.8%) and refusal of physical contact (2.6%).
- Integrate mental health screening into routine HIV care for PLHIV and KPs as 59.1% experienced sadness and 53.9% experienced anxiety due to their status.
- Partnership with the Department of Social Welfare, Andaman & Nicobar Islands for linkages to financial aid, livelihood support and social protection schemes targeting the 69.5% of PLHIV with no income or earnings below ₹25,000/month.

Limitations

The study faced significant recruitment challenges resulting in sample shortfalls (especially among TGs (n=4) and MSM), potentially limiting generalisability. Data, being self-reported, was susceptible to social desirability and recall biases.

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Stigma and discrimination among People Living with HIV and Key Population in Andhra Pradesh

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Introduction and rationale

India is committed to ending the AIDS epidemic as a public health threat by 2030 in line with the Sustainable Development Goal (SDG) target 3.3, which is difficult to achieve without addressing the needs of People Living with HIV (PLHIV) and the Key Populations (KP) such as Female Sex Workers (FSW), Men having Sex with Men (MSM), Injecting Drug Users (IDU) and Transgender (TG) (1, 2).

Global new HIV infections reduced from 3.3 million in 1995 to 1.3 million in 2024 (3). This represents a decreasing burden of the infection. As per National AIDS Control Organisation (NACO), Andhra Pradesh ranks second nationally in PLHIV prevalence and also has higher HIV related stigma in general population than national average (4, 5). To effectively mitigate the stigma, evidence on the level, trends and determinants of HIV/AIDS related stigma and discrimination in community, workplace, educational institutes, and health care is needed (6). In lines with the SDG-3.3.1 and NACP-V, the magnitude, directions and why of stigma and discrimination is to be identified. The present study aimed at understanding the level and determinants of stigma and discrimination among People Living with HIV and among Key Population in Andhra Pradesh.

Objectives

- To understand the level of stigma and discrimination among PLHIV & Key population
- To identify the determinants of stigma and discrimination among PLHIV &Key population

Methodology

The present cross-sectional study was conducted in 12 districts of Andhra Pradesh to assess the stigma and discrimination among People Living with Human Immunodeficiency Virus (PLHIV) and Key population (KP). The Key Populations include Transgender (TGs), Men having Sex with Men (MSM), Female Sex Workers (FSWs) and Injecting Drug Users (IDUs). Geographical representation was ensured by the division of zones (North, Central and South Andhra). High load Anti-Retroviral Therapy Centres (ARTC) and Targeted Interventions Non-Government Organisations (TI-NGOs) were selected by multi-stage systematic random sampling. Study sample selection at each site followed Probability Proportional to Size (PPS) Sampling method and total of 800 (400 PLHIV and 400 KP) were included through systematic random sampling as per the study protocol.

Pilot study was performed utilising the NACO Stigma and Discrimination Tool. Data was entered in MS Excel and analysis was done using SPSS version 24. The analysis included descriptive statistics, means, standard deviations, and percentages.

Study was approved by the Institutional Ethics Committee of Rangaraya Medical College. Prior permissions were taken from District Leprosy AIDS and TB Officers (DLATOs), District Programme Manager (DPMs), Programme Managers of the respective TI-NGOs and Medical Officers of ART Centres through APSACS. After obtaining

written informed consent, the participant was interviewed in a confidential manner. All participant data were kept confidential.

Findings

Background information

The mean years of registration among PLHIV and KP were 8.4 ± 4.8 years and 5.16+4.03 years respectively. The PLHIV and KP comprised 51.6 % & 25% females, 49% & 50% males respectively. Transgender were 25%. The mean age among PLHIV was 43.98± 10.2 years and for KP 31±7.4 years. Majority PLHIV had up to secondary education (48.7%) and 36% KP had education beyond secondary school.

Marital status and HIV status of spouse

PLHIV who were currently married constitute 59.8%. Among them 92.5% were tested for HIV and 63.3% were tested positive. KP who were currently married were 155 (38.8%) and never married were 214 (53.4%). Among currently married 80.6% were tested for HIV and 1.6% were found to be positives. Currently married among FSW were 75, IDU were 31, MSM were 36 and TG were 13. Among the currently married, majority (91%) of the spouse of FSW got tested for HIV followed by TG (77%) and IDU (74.2%). Among MSM, only two-thirds of their spouse got tested for HIV. All the spouse of IDU and 99% spouse of TG were negative for HIV.

General health status

Among the PLHIV, diabetics and hypertensive were 9.7% and 5.5% respectively and 2% had a history of tuberculosis. Among the KP, 87.2% had no co-morbidities, 14 (5%) had diabetes (FSW-1, 7.1%; MSM-7, 50%; TG-6, 42.8%), 2% had hypothyroidism (FSW-5, 62.5%; TG-3, 37.5%), 1.5% had hypertension (IDU-2, 33.3%; MSM-3, 50%; TG-1, 16.7%), and 15 (3.7%) KP reported other co-morbidities.

Experience of disclosure to other than health care provider

An equal proportion of PLHIV and KP revealed their HIV status and KP identity (178, 44.5 %). PLHIV experiences after disclosure were accepted by family, friends and relatives among 55.6% (99), family felt sad and shocked-20.8% (37) and 5.1% (9) faced rejection. KP experience after disclosure was rejection among 46.1% (82), out of which FSW-8.5%, IDU-31.7%, MSM-26.8% and TG-32.9%. Family support was 16.3% among FSW, IDU-30.9%, MSM-14.5% and TG-38.1%.

HIV knowledge and awareness

Responses from the PLHIV and KP regarding HIV Knowledge and Awareness are presented in Table 1. Half of the PLHIV (201, 50.3%) and 372 (93%) KP (FSW-95; IDU-93; MSM-92; TG-92) knew that regular condom use reduces HIV transmission. Non-transmission of HIV by casual contact was known to 74% (296) PLHIV and 93.3% (373) KP (FSW 92, IDU 98, MSM 95 and TG 88). Majority of KP (337, 84.2%) and 51 PLHIV (12.8%) participated in awareness campaigns. They were considered effective by 85% (340) KP and 49.3% (197) PLHIV.

Table 1 HIV Knowledge and awareness assessment among PLHIV and KP

S.N.	Awareness related questions	Responses	PLHIV		Key Populations	
			Frequency	%	Frequency	%
1	Can HIV be transmitted through casual contact	Yes	17	4.3	21	5.3
		No	296	74.0	373	93.3
		Don't Know	87	21.7	6	1.5
		Total	400	100	400	100

S.N.	Awareness related questions	Responses	PLHIV		Key Populations	
			Frequency	%	Frequency	%
2	Can HIV be transmitted through mosquito bites	Yes	46	11.5	30	7.5
		No	251	62.8	351	87.7
		Don't Know	103	25.7	19	4.8
		Total	400	100	400	100
3	Regular condom use reduces the risk of HIV transmission	Yes	201	50.3	372	93.0
		No	31	7.9	21	5.2
		Don't Know	168	42.0	7	11.8
		Total	400	100	400	100
4	Having just one uninfected faithful sexual partner reduces the chances of getting HIV/AIDS	Yes	254	63.5	13	3.25
		No	37	9.3	51	12.75
		Don't Know	109	27.2	336	84
		Total	400	100	400	100
5	Can a healthy-looking person have HIV/AIDS	Yes	223	55.8	276	69
		No	54	13.5	49	12
		Don't Know	123	30.7	75	19
		Total	400	100	400	100
6	Have you participated in any HIV/AIDS awareness campaigns in the last 12 months	Yes	51	12.8	337	84.2
		No	306	76.5	57	14.3
		Don't Know	43	10.7	6	1.5
		Total	400	100	400	100
7	Do you feel these campaigns have been effective in reducing stigma	Yes	197	49.3	340	85
		No	83	20.7	44	11
		Don't Know	120	30.0	16	4
		Total	400	100	400	100

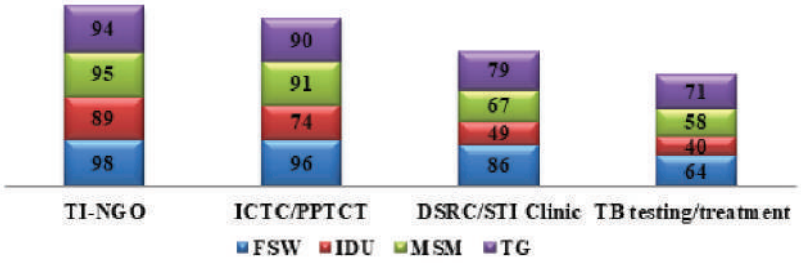
Enacted stigma assessment

Majority (98.2%) of PLHIV and KP (92.9%) did not experience stigma at health facilities. KP utilised services more from TI/NGO (94%) and ICTC/PPTCT (87.8%), when compared with DSRC and TB facility.

Receipt of services and experience at healthcare facilities

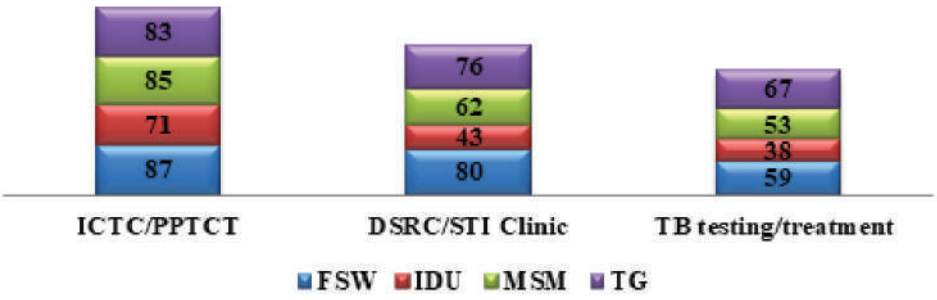
KP received services from TI-NGO were 94% and at ICTC/PPTCT 87.5%. Services received at DSRC 70.3% and TB facilities were low 58.3%. Visits to the facilities were found to be lowest among IDU (63%) (Figure 2).

Figure 2 Received services from the health facilities among KP groups



Non-denial of services at TB facility was 38% among IDU, 59% FSW, 53% MSM and 67% of TG. At DSRC/STI clinic, 43% among IDU, 80% among FSW, 62% among MSM and 74% among TG. At ICTC/PPTCT it was 71% among IDU, 87% among FSW, 85% among MSM and 83% among TG (Figure 3).

Figure 3 Non-denial of services at the health facilities among KP groups



Self-stigma assessment

In terms of self stigma, 59% PLHIV never felt the need to avoid visiting people outside their house due to their HIV status. However, 33.7% reported that a few times, they felt ashamed or embarrassed because of their HIV status, and around 26.7% felt a few times that they brought shame on their family due to their HIV status. Additionally, 31.8% reported that a few times they have thought that they are paying for their sins and 43.2% frequently avoided disclosing their HIV status to others due to fear of judgement. This showed a diverse opinion of the PLHIV on the internal stigma. In terms of the feeling of self-stigma among the KP groups, majority of them reported "never" for the questions pertaining to self-stigma, indicating low incidences of self-stigma among them. However, it was also observed that around 29.5% KP reported to have felt a few times that they brought shame to their family and 29.2% felt embarrassed a few times because of their KP identity. Around 42.3% PLHIV and 75.8% of KP (73%-FSW, 89%-MSM, 77%-IDU and 64%-TG) felt role of educational institutes in reducing stigma. Job challenges were felt by 51.5% of PLHIV and 62.5% of KP. PLHIV (94%) and KP (68.5%) were unaware of workplace policies on stigma and discrimination.

Access to healthcare and support services

Access to health care services was 79.9% among PLHIV and 82% among KP. Discrimination during admission into hospital was experienced by 12.5%. HIV prevention services were skipped by 7.3% KP, least among TG (3%) and highest among FSW 10%.

Mental health impact due to stigma

Mental health concerns were reported by PLHIVs, with feelings of hopelessness (74.5%) and anxiousness (66.8%) being the most common. Among the KP, was 68.8% and 58.8 % respectively.

Social support and social networks

Around 24.3% of the PLHIV experienced rejection and lack of support from close family or friends. Around 41.5% KP reported experiencing rejections. The support system for KP was mainly through the Outreach Workers (ORW) and Peer Educators (PE).

Coping mechanism

Majority of PLHIV (39.5%) did not know or could not recommend any coping mechanisms during the study. Around 28.5% of PLHIV and 44.3% % of KP opined that stigma can be reduced by creating awareness.

Conclusion

Most PLHIV had a low level of educational status. Majority didn't reveal their HIV status to others for fear of discrimination. Overall access to healthcare services was good. Incidence of enacted stigma were reported by 0.5% of the PLHIV at ART centre on denial of services. Sadness and hopelessness were the majorly expressed mental health conditions. FSW had lower level of education. Undergoing HIV test by almost all KP indicates a good service provision. Rejection was experienced more by TG, IDU and MSM. Enacted stigma experienced were reported once or twice in terms of denial of services at ICTC, DSRC and TB testing centres by 3.4%, 5.7% and 5.6% KP respectively. NGOs are playing a good to key role in providing support services to KP.

Recommendations

Public education programmes should aim to reduce all forms of stigma and discrimination. Health workers and ASHA can be involved in carrying out the awareness campaigns. Awareness regarding HIV/AIDS and gender identity should be intensified after posters. Training of health care providers regarding The HIV/AIDS Prevention & Control Act, 2017, which addresses the stigma and discrimination against HIV/AIDS be ensured.

Acknowledgements

We gratefully acknowledge the support extended by National AIDS Control Organisation (NACO), Andhra Pradesh State AIDS Control Society (APSACS), District Leprosy AIDS TB Officers, District Programme Managers, Programme Managers of NGOs and other personnel who helped us in designing, planning and conducting this state-wide study. We are also indebted to the PLHIV and KP who volunteered to reveal their opinions and experiences about stigma and discrimination, without which this study would have been incomplete.

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Stigma and discrimination among People living with HIV and Key Population in Arunachal Pradesh

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Introduction and rationale

HIV stigma and discrimination in Arunachal Pradesh are sparsely documented in the research literature. The incidence of stigma and discrimination among the key populations and the PLHIV population is high in northeast India. As well as the HIV cases, are also increasing in the state (1).

The factors that contribute to HIV stigma and discrimination in this region are due to misinformation and lack of education, fear of transmission, fear of severe Infection, disclosure concerns, and stereotyping (2). C. Bage (2016) wrote about how people are still lagging in implementing their knowledge and keeping themselves safe, due to fear of contagion and social isolation (3).

HIV stigma and discrimination have adversely impacted the health and well-being of the Key population and People living with HIV, including delaying or avoiding HIV testing, treatment and care, experiencing psychological distress, depression and anxiety, facing discrimination in education, employment and healthcare settings, losing social support and family relationships, and facing violence and harassment (4).

Objective

- To understand the level of stigma and discrimination among PLHIV and KPs
- To understand the determinants of stigma and discrimination among PLHIV and KPs
- To provide valuable suggestions and recommendations to the implementing agency and other stakeholders, combating stigma and discrimination

Methodology

This study is a cross-sectional study using quantitative research method. The study areas include Itanagar Capital Region (ICR) (Papum Pare District), Pasighat (East Siang District), Namsai (Namsai District), and Bhalukpong (West Kameng District). The study focuses on the Key Populations covered by the TI NGO's in the areas above and PLHIVS who are registered at the ART Centres of TRIHMS, Naharlagun, and the District Hospital, Namsai.

The total sample size consisted of 400 PLHIV registered at the two ART Centres of TRHIMS, Naharalgun, and District Hospital, Namsai. Systematic random sampling was used to select 100 respondents from each typology for the study accordingly, with a total sample size of the Key Population (TG, MSM, FSW, IDU). IRB approval sought from the Department of Research Advisory Committee (DRAC) Rajiv Gandhi University, Rono Hills Doimukh, Arunachal Pradesh

The data were collected from the prepared questionnaires developed by NACO. The collected raw data were fed into excel based data entry template provided by NACO and analysis undertaken accordingly.

Findings

A total of 400 PLHIV respondents were studied, comprising 227 (56.7%) from Namsai District and 173 (43.3%) from Papum Pare District. The higher number in Namsai reflects greater rehabilitation engagement and social challenges such as substance abuse. The majority of respondents were aged 24–30 years, with a decline observed among those aged 35 and above. The gender distribution reveals a high male dominance (90.5%), with females comprising only 9.5%, indicating a significant gender disparity. In terms of education, most respondents held secondary (25.8%) or graduate-level qualifications (25%), indicating moderate educational attainment. Marital status data show 60% never married, 36.25% married, and 3.8% separated or divorced, reflecting a largely unmarried and economically constrained population, with marked socio-demographic vulnerabilities influencing their health and social well-being.

Findings reveal varying degrees of stigma and discrimination faced by PLHIV. Around 12.5% occasionally and 11.5% once or twice avoided visits, showing social hesitation rooted in stigma, discrimination, or self-perception, while 8% often limited interactions due to such fears or health concerns. Regarding unfair treatment, 8.8% reported experiencing it a few times, 6.5% once or twice, and 3.5% frequently, reflecting ongoing discrimination. Additionally, 5.3% refrained from responding, possibly due to the sensitivity of the issue. When blamed for their condition, 25.5% were frequently blamed, 13% a few times, and 10.8% once or twice indicating that nearly 24% occasionally faced blame, underscoring persistent stigma. A notably high 35.5% of respondents frequently avoided disclosing their HIV status, revealing strong fears of discrimination, social rejection, and workplace bias—highlighting the continued impact of HIV-related stigma on social interactions and self-disclosure.

The 400 respondents from Key Populations included 100 each from Transgender (TG), Female Sex Worker (FSW), Men who have Sex with Men (MSM), and Injecting Drug User (IDU) groups. Occupationally, 34% TG and 60% MSM were students, while 61% of FSWs and 35% of IDUs were self-employed or in informal work. Service access disparities were striking — 55% of TGs never visited ICTC/PPTCT centres, 45% never accessed STI clinics, and 64% and 94% of respondents across typologies reported non-utilisation of essential health at ICTC and DSRC respectively. MSM reported 19% mistreatment at ICTC and 13% at TB centres, while 17% of FSWs and 11% of IDUs experienced service denial or mistreatment once or twice. Mental health concerns were significant — 65% of MSM reported anxiety and 49%, low self-esteem. Overall, stigma, discrimination, and socio-economic collectively limit healthcare access and well-being across all key populations.

Conclusions

Many IDUs avoid healthcare, including HIV services, due to fear of judgment, and workplace discrimination hampers their employment and reintegration. The data shows that Female Sex Workers (FSWs) face intense stigma and discrimination, resulting in severe mental health issues. Mental well-being is compromised among MSM, as 65% feel anxious and 49% suffer from low self-esteem. Rejection from family and friends (41%) increases their sense of isolation. TG individuals also delay or avoid seeking healthcare out of fear of being mistreated. Many PLHIV reported experiencing self-stigma, which drives them to create a form of mental isolation due to their HIV status. This internal struggle is significant, as it can hinder individuals from seeking necessary support and care.

Recommendations

- All testing facility centres should have a feedback system, both online and manual (Complaint box), to obtain first-hand information. The redressal officer is to verify the input and take action. The feedback system aims to reduce the constraints and issues related to denial of service and mistreatment by healthcare workers
- Stigma and Discrimination in healthcare settings and other workplaces should prominently display patient rights and grievance redressal mechanisms

Acknowledgement

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A study on stigma and discrimination faced by People Living with HIV and Key Population in Assam

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Introduction and rationale

According to the India HIV Factsheet 2021, there are around 24 lakh People living with HIV in India, including 25,073 in Assam (1). Despite medical progress, stigma and discrimination continue to hinder prevention, diagnosis, and care. Key populations—female sex workers (FSWs), men who have sex with men (MSM), injecting drug users (IDUs), and transgender persons (TGs)—face layered stigma from both identity and HIV status, limiting access to health and social services. Studies identify key stigma domains such as social distancing, disclosure fears, and internalised shame, which contribute to poor adherence and mental distress (2-4).

Literature showcased that around 45% of PLHIV visit ART centre in Kolkata from various areas faced discrimination from the families (5). However, limited research exists on stigma among Assam's key populations. This study aims to assess the forms, extent, and impacts of stigma among PLHIV and KP in Assam and recommend strategies for inclusive, stigma-free healthcare and social support.

Objectives

- To understand the level of stigma & discrimination among PLHIV and KP
- To identify the determinants of stigma & discrimination among PLHIV and KP

Methodology

The study adopted a quantitative, cross-sectional design across four regions of Assam—Lower Assam, Middle Assam, Upper Assam, and Barak Valley—covering four major ART centres (Kamrup Metro, Nagaon, Dibrugarh, Silchar) and associated TI NGOs selected using stratified sampling.

Using systematic random sampling, a total of 800 respondents were targeted (comprising 400 PLHIV and 400 Key Population members-MSM, FSW, IDU, TG—100 each), however, after removing incomplete responses, the final valid sample of 786 (386 PLHIV and 400 KP) was considered for analysis.

Data was collected using the NACO-designed structured interview schedules for PLHIV and KP administered by trained investigators. Field investigators underwent a pre-survey orientation on ethics, confidentiality, and stigma-sensitive engagement. Informed consent was obtained before each interview.

Data were coded, entered, and analysed using MS Excel. Descriptive statistics (frequency, mean, percentage) were used to describe trends, while cross-tabulation and correlation analysis were conducted to explore associations between education, employment, and self-stigma. Investigator field notes were included to interpret skipped responses and behavioural indicators. Quality assurance included daily monitoring and data verification. Ethical approval was obtained from Tezpur University's Ethics Committee.

Findings

People Living with HIV

Among 386 PLHIVs surveyed, a majority (56.2%) belonged to 19-36 years of age, 72.8% were males and most (45.3%) were engaged in private jobs and highest proportion (31.6%) had completed primary schooling. It was recorded that 50.5% of the PLHIV were never married, while 37% were currently married. Out of the 37% (143 PLHIV) who were currently married, 93% (n=133) had got their spouses tested for HIV and out of the tested spouses 49% (n=65) were also HIV positive.

The knowledge and awareness assessment of PLHIV indicated that 79% correctly responded that HIV does not spread through casual contact such as hugging, handshake, eating together or sharing food, and 67% confirmed that HIV does not transit through mosquito bites. Although 20% were uncertain about the route of transmission, indicating persistent myths regarding these aspects. Awareness regarding usage of condom as a preventive measure was observed to be high (77%), and 41% affirmed that being with 1 partner reduces the risk of HIV, while 37% denied this and 22% were unsure, which indicated towards unawareness regarding protective value of monogamy among the respondents. Further, 78% stated that a healthy-looking person might have HIV. Table 1 showcases the HIV awareness assessment among PLHIV.

Table 1 HIV information and awareness of PLHIVs (n=386)

Response	Does HIV spread through casual contact?	Does HIV transmit through mosquito bites?	Is there reduced risk through condom use?	Are the chances if HIV reduced through single partner?	Can a Healthy-looking person have HIV?	Did the respondent Participated in HIV awareness programmes?	Are Campaigns effective?
Yes	27 (7%)	49 (13%)	299 (77%)	159 (41%)	301 (78%)	182 (48%)	276 (71%)
No	305 (79%)	260 (67%)	11(3%)	145 (37%)	37 (10%)	160 (41%)	5 (2%)
Don't Know	54 (14%)	77 (20%)	75 (20%)	82 (22%)	48 (12%)	43 (11%)	104 (27%)

Only 31% disclosed their HIV status outside healthcare settings, often receiving family support but sometimes facing initial rejection. Some respondents said that disclosure was initial met with lack of support from family, while a respondent shared that *"while disclosure was initially difficult, my family members eventually accepted and provided emotional and social support"*. It was seen that selective disclosure i.e., disclosure to close friends or trusted individuals was common which indicated a fear of social stigma.

Enacted stigma in healthcare was minimal, with 98% reporting no service denial and only rare instances (≤3%) of mistreatment or refusal to touch. However, self-stigma was high—over 60% felt guilt, shame, or social hesitation. Educational stigma persisted, with 68% believing PLHIV lack equal opportunities and 49% feeling institutions fail to reduce stigma. Employment-related stigma was also notable: 24% faced job challenges, 12% experienced discrimination, and 55% called for workplace-specific protections. Overall, while overt discrimination has declined, internalised stigma and fear of disclosure continue to hinder social participation and confidence among PLHIV.

Men who have sex with men

Among MSM respondents, 85% were aged 19–35 years, 70% were engaged in private employment, 64% earned ₹11,000–20,000 and 52% reported higher secondary education. Stigma and discrimination were observed to be persistent in subtle yet impactful ways. Disclosure beyond healthcare settings was extremely limited (8%), reflecting deep-seated fear of societal rejection. While 59% had supportive friends or family, 14% experienced rejection.

Enacted stigma in healthcare was minimal—confidentiality was fully maintained, and only 1–2% reported denial of services or mistreatment. However, some avoided healthcare facilities due to fear of exposure. Internalised

stigma remained strong, with many feelings shame, embarrassment, or avoiding disclosure.

Workplace discrimination affected 14%, and 20% perceived employment challenges, compounded by low awareness (64%) of workplace policies (Table 2).

Table 2 Employment and stigma among MSM (n=100)

Indicator	Never	Once or twice	Few times	Frequently	Refused to answer
How often have you thought or felt that Key Populations face challenges in finding employment due to their KP identity/status?	77	11	08	01	03
	Yes		No		Don't Know
Have you or someone known to you experienced employment discrimination based on their KP identity/status	14		77		09
Do you believe that Key Populations have equal career advancement opportunities compared to non KP?	61		19		20
Are you aware of any workplace policies or guidelines on stigma & discrimination?	36		64		
Do you think there should be specific workplace policies addressing HIV stigma and discrimination	51		16		33

Despite emotional distress—38% felt sadness, 31% anxiety, and 35% low self-esteem—most respondents (72%) still felt valued and respected. This resilience amidst persistent social stigma underscores the need for stronger mental health support, workplace inclusivity, and continued sensitisation to foster acceptance and equality for MSM communities.

Injecting Drug Users

Among injecting drug users (IDUs), mostly young males (85%) aged 20-35 years of age. Although 97% accessed healthcare in the past year, breaches of confidentiality (3%) and occasional mistreatment or denial (1–2%) were reported. Physical avoidance by health workers affected 5%, including 3% frequently. Internalised stigma is widespread—38% occasionally and 7% frequently self-isolated, 47% felt family shame, and 53% reported embarrassment. Moral stigma remains strong, with 41% viewing their condition as karmic punishment and 42% experiencing blame. Fear of discrimination led 40% to avoid TI NGOs and 14% to skip HIV prevention services. Education and employment-related stigma also emerged, with 26% observing bias in education and 37% perceiving workplace barriers.

The mental health toll is significant—58% felt sadness, 52% anxiety, and 54% lowered self-esteem—though 59% still felt valued. Despite 87% having social support, 28% faced rejection, reflecting persistent stigma amidst growing inclusion and resilience (Table 3).

Table 3 Impact on mental health of IDUs (n=100)

Response	Have you experienced feelings of sadness or hopelessness because of your KP identity/status?	Do you often feel anxious or stressed because of how others may react to your KP identity/ status?	Has your self-esteem been affected by the stigma associated with KP?	Do you feel valued and respected despite your KP identity/status?
No	41	48	46	40

Yes	58	52	54	59
Don't Know	01	0	0	01

Transgender

Among transgender (TG) respondents, majority (89%) fell within 19-35 years age category. Stigma remained deeply rooted despite improved healthcare inclusivity. Disclosure beyond healthcare settings was rare (83%), indicating strong fear of societal judgment. While enacted stigma in healthcare was minimal—with no reports of denial or mistreatment—gaps in access persist, as 25% never visited DSRC/STI clinics and 17% never visited ICTC/PPTCT. Anticipated stigma continues to hinder care, with 3–4% avoiding or delaying services and 80% finding support systems inadequate. Internalised stigma is widespread—most respondents reported self-isolation, shame, and belief in karmic punishment, while 74% conceal their identity. Mental health impacts are severe, with over 80% experiencing sadness, anxiety, or low self-esteem, though 76% still feel valued, showing resilience. Socially, 75% have supportive networks, but 40% faced rejection, reflecting a dual reality of acceptance and exclusion (Table 4).

Table 4 Social support and social network of TGs (n=100)

Variable	Yes	No
Social Support from Friends and Family	75 (75%)	25 (25%)
Rejection from friends and family	40 (40%)	60 (60%)

Overall, TGs experience limited discrimination in healthcare but continue to bear a heavy emotional and social burden of stigma.

Female Sex Workers

Among female sex workers (FSWs), stigma remains deeply entrenched, manifesting through secrecy, inconsistent healthcare use, and strong internalised stigma. Only 31% reported supportive friends or family, while 15% experienced rejection, reflecting limited social backing. Service utilisation is uneven—though 65% visited TI NGOs recently, 42% never accessed DSRC/STI clinics and 17% never visited ICTC/PPTCT. Enacted stigma, though infrequent, persists through confidentiality breaches, occasional service denial (4% ICTC, 3% DSRC), longer waits (6%), and rare refusal to touch (1%). Anticipated stigma continues to disrupt care, with 7–8% avoiding or delaying services. Internalised stigma is high—many experiences shame, guilt, and disclosure avoidance, linking their identity to "sin" or karma.

Mental health challenges are significant, with 57% reporting sadness, 54% anxiety, and 44% low self-esteem, though 71% still feel valued (Table 5). These findings highlight the persistence of hidden stigma and emotional burden despite improved service access and awareness.

Table 5 Mental health and self-perception by FSWs (n=100)

Response	Have you experienced feelings of sadness or hopelessness because of your KP identity/status?	Do you often feel anxious or stressed because of how others may react to your KP identity/status?	Has your self-esteem been affected by the stigma associated with KP?	Do you feel valued and respected despite your KP identity/status?
No	43 (43%)	46 (46%)	56 (56%)	29 (29%)
Yes	57 (57%)	54 (54%)	44 (44%)	71 (71%)

Conclusion

Across all key populations—PLHIV, MSM, IDU, TG, and FSW—stigma remains a persistent barrier affecting health-seeking behaviour, mental wellbeing, and social inclusion. While access to HIV testing and treatment services is generally high, internalised stigma, fear of disclosure, and social rejection continue to limit engagement and self-

acceptance. Enacted stigma within healthcare has reduced, showing progress in provider sensitivity, yet subtle discrimination and self-blame persist. Mental health impacts, especially sadness, anxiety, and low self-esteem, are evident across groups. Strengthening peer-led support, awareness campaigns, and rights-based, stigma-free healthcare systems is crucial to ensuring dignity, equity, and holistic wellbeing for all key populations.

Recommendations

- Strengthen stigma reduction through community sensitisation, inclusive education, and rights-based awareness campaigns
- Enhance counselling and mental health support with peer-led, trauma-informed approaches
- Train healthcare staff on confidentiality and non-discrimination, ensuring stigma-free services
- Expand family and community support systems, especially for TGs and FSWs. Promote workplace and educational inclusion through anti-discrimination policies
- Integrate PLHIVs and key populations as counsellors, educators, and navigators in HIV programmes to foster empowerment, visibility, and sustainable community participation

Limitations

The study's quantitative design limited in-depth exploration of emotions and lived stigma. Some respondents withheld information due to fear of exposure, resulting in partial responses.

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Stigma and discrimination among People Living with HIV and Key Populations in Chandigarh

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Introduction and rationale

The incidence and prevalence of HIV in India is on a decreasing trend over the past few years, but still is of a significant public health concern. According to the available data the estimated HIV prevalence among adults aged 15-49 years in India was 0.21% in the year 2021 (1, 2). HIV related stigma refers to negative perceptions, assumptions, and prejudices directed at individuals or groups because of HIV status of a person. Discrimination is the behaviour that results from those negative attitudes, beliefs, and stereotypes. HIV related stigma often results from ignorance regarding the modes of HIV transmission or from making moral judgments about how someone contracted it. Many people have irrational fears and thus leading to avoidance of those who are HIV-positive.

Stigma among HRG population including injecting drug users (IDU), men having sex with men (MSM), female sex workers (FSW) and transgender persons (TG) could lead to avoidance of going to health care providers out of fear of discrimination and judgment thus delayed testing and subsequent diagnosis. This ultimately hinders the effective HIV prevention and care services. Also, HIV stigma among HRGs can exacerbate the challenges already being faced by them which are because of their risk profile. Besides this, HIV reactive HRGs may be reluctant to share their HIV status which might lead to delay in treatment and HIV management (3, 4).

It is important to study PLHIV group because stigma and discrimination among them will deter them to seek treatment and will impact their social life. Similarly, stigma and discrimination among high-risk groups because for their key population status might cause challenges to undergo HIV testing and accessing other preventive and curative health care services (5). Against this background the present study was planned to study stigma and discrimination among PLHIV and HRG. The results of this study are expected to help policy makers design appropriate interventions based on the findings

Objectives

- To assess levels of stigma and discrimination faced by People Living with HIV (PLHIV) with respect to their HIV status
- To assess levels of stigma and discrimination among High-Risk Group
- To assess the determinants of stigma and discrimination faced by People Living with HIV (PLHIV)
- To assess the determinants of stigma and discrimination faced by High-Risk group

Methodology

A cross-sectional study was conducted among a total of 400 PLHIV enrolled from ART centers of GMCH and PGIMER, Chandigarh and 400 Key Population (100 MSM, 100 TG, 100, FSW and 100 IDU) were enrolled from TI-NGO in Chandigarh. The participant recruitment among PLHIV and KP was done through systematic random sampling.

A structured questionnaire developed by the National AIDS Control Organisation was used for data collection among both the groups. The data was recorded in excel formats provided by NACO for both, PLHIV and KP groups. Data was analysed using Epi-info software for windows.

Ethical approval was sought from Institutional Ethics Committee of Government Medical College and Hospital and PGIMER, Chandigarh. Each participant was informed about the objective of the study. Written informed consent was taken. Every precaution was taken to respect the respondent's privacy and the information's confidentiality.

Findings

Among the 400 PLHIV study participants, 62% were males, 37% were females, and 1% were transgender. In terms of age groups, 85% (342) individuals were between 18-50 years old, while 14% (58) individuals were above 50. The mean age of these individuals was 38 years. Regarding education, most participants, that is, 36% (147), had completed higher secondary education, while 14% (56) had not received any formal education. Most individuals were employed in private jobs, with only 22% working in government jobs. Their monthly income was 15,000 with a median of N=189. Regarding marital status and sexual partners, the majority (61%) were married while 16% individuals were divorced, and 22% had never been married.

Around 79% were aware that HIV does not spread through casual contact, though 14% believed in transmission through mosquito bites. Disclosure to family was high (88%) among the PLHIV. Enacted stigma in healthcare was observed to be low, but self-stigma was common (84%). Only 12% faced difficulties in accessing healthcare at varied facilities. Impact on mental health was significant, with 61% reporting sadness and 60% anxiety, though 85% also felt respected. Family support (88%) was strong, aiding coping with stigma.

Among 100 MSM, mean age was 27.6 (SD 8.7) years, 70% had completed higher secondary education, 9% had graduated, and 5% were illiterate. Regarding employment, 25% individuals were self-employed, 56% were in private jobs, and only 1% held government positions. Knowledge about reduced risk of HIV transmission on usage of condoms was reported among 98% respondents, 91% believed that a healthy-looking person may have HIV, and 87% rejected transmission of HIV through route of casual contact. Enacted stigma was rarely observed among this sub-group. Self-stigma was reported by 43%, with 53% feeling shame and 48% avoiding disclosure. Mental health concerns included sadness (35%) and anxiety (32%), though 84% felt respected. Family support was lower (31%), with 25% facing rejection. Coping mechanism included ignoring stigma from others, having NGO support and awareness campaigns to address stigma.

Among 100 FSW, mean age was 35.02 years and median age was 35 years. In terms of education, 34% FSW had completed higher secondary education, 2% had graduated, and 27% had illiterate. Only 16% disclosed their KP status. HIV knowledge showed gaps, as 70% believed mosquitoes transmit HIV, though 98% knew condom use reduces risk. Self-stigma was high (53%), with 63% feeling shame and 62% avoiding disclosure. Employment discrimination was reported by 8%, and 97% wanted workplace policies for FSW. Mental health challenges were notable, with 54% reporting sadness, 58% anxiety, and 54% low self-esteem, though 69% felt respected. Family support was reported by 76%, while 20% experienced rejection. Coping mechanism included support from NGO, participation in awareness camps, and ignoring stigmatising attitudes from others.

Among 100 IDU, the mean age was 31.8 years and median age was 28.5 years. In terms of education, 65% IDU individuals had completed higher secondary education, 5% had graduated, and 7% had illiterate. Regarding employment, 19% individuals were self-employed, 66% were in private jobs, and only 1% hold government positions. Disclosure of KP status was high (81%). About 79% believed in HIV transmission through mosquito bite. Enacted stigma in healthcare was very less, but self-stigma was comparatively high (57%), with many feeling shame (74%) or attributing illness to karma (52%). Mental health challenges included sadness (48%), anxiety (52%), and low self-esteem (53%). Family support was reported by 80%, though 44% faced rejection. Coping strategies included support from NGO, participation in awareness campaigns, and calmly handling stigma.

Among 100 transgender individuals, 29% individuals had completed higher secondary education, 5% had graduated, and 17% were illiterate. Regarding employment, 1% individuals were self-employed, 72% were in

private jobs, and 17% held government positions. This data reflects the community's diversity and employment trends, with a strong inclination towards private job. Disclosure of KP status was high (91%). HIV awareness was fairly better as 97% knew condoms reduced risk, though 6% believed in transmission of HIV through mosquito bites. Self-stigma was common (58%), with feelings of shame, blame, and avoidance of disclosure. Mental health impact included sadness (55%), anxiety (46%), and low self-esteem (51%), though 93% felt respected. Family support was reported by 78%, while 35% faced rejection. Coping included calm handling, awareness, and a demand for equal job opportunities.

Conclusion

This study highlights that while HIV awareness was fairly well among PLHIV and key populations, there were a few misconceptions such as mosquito bites can cause HIV transmission. Disclosure rates vary across groups, with FSW showing the lowest rate among all. Enacted stigma in healthcare is relatively less but self-stigma and mental health challenges like sadness, anxiety, and low self-esteem are widespread across groups. Coping strategies often involve NGO support, awareness, and personal resilience.

Recommendations

It is suggested that targeted awareness campaigns may be held to address misconceptions, integrating mental health support within HIV services, and promoting family/community sensitisation

Acknowledgement

We sincerely thank the Chandigarh State AIDS Control Society (SACS) for their valuable support in facilitating this study. We gratefully acknowledge the Targeted Intervention (TI) NGOs for their assistance in enrolling participants from key populations. We also extend our gratitude to the staff of the ART Centre for their kind cooperation and help in enrolling PLHIV. Their contributions were instrumental in the successful completion of this research. We thank all the participants for sharing their views during the study.

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A study on stigma and discrimination among People Living with HIV and Key Population in Delhi

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Introduction and rationale

India has relatively low adult prevalence rate of HIV which is 0.2%. India is estimated to have about 2.54 million People Living with HIV (PLHIV) (1). Stigma and discrimination are among the most persistent barriers in the HIV response, because it mostly discourages people from testing, seeking care, adhering to treatment, and staying engaged in services (2). Stigma in the context of present study is defined as the negative attitudes, beliefs, and judgments that are directed towards PLHIV and KP, and discrimination refers to any behaviour or practices that disadvantages or leads to harming the status of PLHIV and KP.

PLHIV and members of KP, including Female Sex Workers (FSWs), Men who have Sex with Men (MSM), Transgender persons (TG), and Injecting Drug User/People Who Inject Drugs (IDU/PWID) continue to face multiple and intersecting forms of stigma and discrimination in India. Despite the progress in medical treatment and community-based prevention programmes, social stigma remains a barrier to testing, care, and adherence to treatment. Stigma manifests at individual, family, community, and institutional levels, leading to internalised shame, reduced access to healthcare, and violations of dignity. The situation is further intensified for members of the Key Populations, who already live at the margins of social acceptance due to moral and cultural biases. Delhi, being an urban hub, provides a critical setting to examine how structural inequalities, social perceptions, and programmematic responses shape the experiences of PLHIV and KPs. Against this background, the present study aims to understand the level and determinants of stigma and discrimination among PLHIV and Key Populations in Delhi.

Objectives

- To understand the level of Stigma and Discrimination among People Living with HIV (PLHIV) and Key Population in Delhi
- To understand determinants of Stigma and Discrimination among PLHIV and Key Population in Delhi

Methodology

The present study has employed a quantitative approach on the basis of the nature of data collection and adopted descriptive research to understand the level and determinants of stigma and discrimination among People Living with HIV (PLHIV) and Key Populations (KP) in Delhi.

The study used probability sampling, specifically the systematic random sampling method to recruit participants. The total sample comprised 805 participants, including 403 PLHIV and 402 Key Population members (105 FSWs, 100 IDUs, 97 MSM, and 100 TG). For PLHIV, 403 participants were randomly selected from the line-list of registered individuals maintained at 12 Antiretroviral Therapy (ART) Centres across Delhi. For KPs random selection of 402 participants was done from the master line-lists of Targeted Intervention (TI) NGOs across Delhi, representing four city zones; North, South, East, and Central.

Data were collected through one-on-one interviews using a pre-developed semi-structured questionnaire and the data were subsequently analysed using SPSS. Standardised NACO stigma and discrimination tools were maintained through structured interviews.

Ethical approval was taken from the Department of Social Work, University of Delhi for this study. Ethical principles like confidentiality, informed consent and non-identifying documentation were maintained to protect participants' privacy, especially considering the sensitivity of HIV status and KP identities.

Findings

The PLHIV participants of this study were primarily from the reproductive age group, with the majority of participants (58.1%) between the age group of 26–45 years. About one-fifth of the participants (20.6%) were youth, aged 18–25, and only a small fraction (6.7%) were above 55 years. The majority of PLHIV participants were male (65.8%), followed by female (32.5%), and only a small proportion of the participants identified as transgender (1.7%). Among PLHIV, 89% participants reported accessing healthcare services within the last year, 13.9% participants experienced breaches of confidentiality, and 17.4% participants reported delaying or avoiding care due to fear of exposure. About 35% of participants earned below ₹10,000 per month, reflecting economic vulnerability intertwined with stigma.

Awareness about HIV transmission is relatively high among PLHIV (Table 1) as 82.4% of participants knew, HIV is not spread through casual contact, and 77.7% participants rejected the mosquito-bite myth. Yet, misconceptions persisted, particularly around faithfulness and visible symptoms.

Table 1 Awareness regarding HIV transmission among PLHIV (n=403)

Can HIV be transmitted by casual contact?	Frequency	Percent
Yes	47	11.7
No	332	82.4
Don't know	24	6.0
Total	403	100.0
Can HIV be transmitted by mosquito bite?	**Frequency**	**Percent**
Yes	52	12.9
No	313	77.7
Don't know	38	9.4
Total	403	100.0

About 57.8% PLHIV participants were married, and nearly half of them reported facing discrimination from relatives upon disclosure. Emotional distress was evident, 73.7% PLHIV reported sadness or hopelessness, and 62.3% participants felt anxious about others' reactions. Internalised stigma was expressed through guilt, shame, and social withdrawal. Despite these challenges, resilience emerged strongly: 71.5% participants had supportive friends or family, and nearly half accessed counselling or peer support through ART Centres or Care Support Centres (CSC). These relationships provided emotional strength and continuity in treatment adherence.

Among the KP groups, more than half (51.5%) were young adults aged between 18–25 years, followed by those in the 26–35 age group (31.1%). Only a small proportion (3.7%) were aged 46–55 years, and a very limited number (1.2%) were above 56 years. Among sub-groups of KP, the majority of MSM (18.2%) and TG (14.9%) participants were in the 18–25 age group, indicating that younger individuals are more represented in these categories. FSWs (10.2%) and IDUs (10.4%) had relatively higher representation in the 26–35 age range, showing a slightly older demographic profile.

Among KPs, 65.1% of married participants had children, illustrating the coexistence of family life with social marginalisation. Around 35.1% KP participants reported multiple sexual partners, often influenced by economic need or emotional insecurity while 69.2% participants did not wish to disclose their partners' HIV status, reflecting fear and lack of open communication. Encouragingly, 79.9% participants had visited TI or health facilities in the past three months, and 86.5% participants had tested for HIV within six months, showing the strength of Delhi's outreach networks. Yet, 19.7% participants avoided disclosing their own testing history, suggesting persisting internalised self stigma.

Most respondents reported feeling anxious or undervalued due to their identity. Half of KP participants (50.2%) reported experiencing feelings of sadness or hopelessness linked to their KP identity, while 49.8% did not report such experiences. It was reported that 70.1% of total KP felt undervalued and less respected due to their identity. Table 2 indicates that typology-wise comparison regarding feeling less valued and respected despite the KP identity.

Table 2 Responses on feeling valued or respected despite of KP status (n=402)

Do you feel valued and respected despite your KP identity/status?		FSW	IDU	MSM	TG	Total
No	n (%)	82 (20.4)	82 (20.4)	51 (12.7)	67 (16.7)	282 (70.1)
Yes	n (%)	23 (5.7)	18 (4.5)	46 (11.4)	33 (8.2)	120 (29.9)
Total	n (%)	105 (26.1)	100 (24.9)	97 (24.1)	100 (24.9)	402 (100)

The sub-groups of KP – MSM (13.7%) and TG (15.7%) groups showing higher engagement in community networks, while FSWs (11.9%) and IDUs (9.0%) faced compounded social and economic discrimination.

The majority of participants across all Key Populations (KPs) demonstrated a good understanding of HIV transmission, with 86.1% correctly stating that HIV cannot be transmitted through casual contact such as hugging, sharing utensils, or social interaction. However, a small portion of participants still held misconceptions or uncertainty. About 8.0% believed that HIV can be transmitted through casual contact, indicating persistence of stigma-driven misinformation. Further, 6.0% reported that they did not know whether HIV could be transmitted this way. When asked whether HIV can be transmitted through mosquito bites, the majority of participants across all Key Populations (KPs) (84.3%) correctly stated that HIV cannot be transmitted in this way. However, 8.5% of participants believed that HIV can be transmitted through mosquito bites, while 7.2% reported that they did not know, indicating the persistence of misinformation in some segments of the KP community.

The data indicates that the majority of participants from key populations (61.9%) reported that they had never faced stigma or discrimination while accessing services at DSRC/STI clinics in the past 12 months. However, a notable minority (7.0%) experienced discrimination once or twice, while 1.7% said it occurred a few times, and 1.0% reported it happened frequently. MSM (19.4%) and FSW (15.9%) were the most likely to report never facing discrimination, suggesting relatively better experiences in these subgroups. IDU (10.7%) had slightly lower proportions reporting "never," hinting at somewhat greater vulnerability to negative treatment. TG participants (15.9%) also showed similar trends, though small numbers experienced discrimination occasionally. A considerable 28.4% refused to answer, which may indicate reluctance or discomfort in disclosing experiences of stigma in health settings (Table 3).

Table 3 Experiences of stigma and discrimination at DSRC/STI clinics among KP

Did you experience stigma and discrimination due to your identity at DSRC or STI clinic?		FSW	IDU	MSM	TG	Total
A few times	n (%)	4 (1)	2 (0.5)	0 (0)	1 (0.2)	7 (1.7)
Frequently	n (%)	1 (0.2)	1 (0.2)	2 (0.5)	0 (0)	4 (1)
Never	n (%)	64 (15.9)	43 (10.7)	78 (19.4)	64 (15.9)	249 (61.9)
Once or twice	n (%)	11 (2.7)	12 (3)	3 (0.7)	2 (0.5)	28 (7)
Refused to answer	n (%)	25 (6.2)	42 (10.4)	14 (3.5)	33 (8.2)	114 (28.4)
Total	n (%)	105 (26.1)	100 (24.9)	97 (24.1)	100 (24.9)	402 (100)

Emotional well-being also emerged as an area of concern, with nearly three-fourths of PLHIV and KPs reporting feelings of sadness, anxiety, or low self-esteem linked to social judgment. TG (14.2%) and MSM (15.9%) respondents exhibited stronger community networks and acceptance, while FSW (4.7%) and IDU (7.2%)

participants were the least likely to report support from friends or family, reflecting stronger stigma and secrecy surrounding their identities.

Overall, while service utilisation is high, the persistence of silence, fear, and internalised stigma underscores that progress remains uneven and socially conditioned.

Conclusion

The study concludes that despite significant progress in HIV awareness and service delivery in Delhi, stigma and discrimination remain deeply embedded in social and institutional interactions. The findings also highlighted that stigma and discrimination continue to affect access to resources, emotional well-being, and disclosure among PLHIV and KPs in Delhi. Both PLHIV and Key Populations demonstrate resilience, yet their daily realities are shaped by silence, fear, and unequal treatment. Sustained focus on community-driven interventions, psycho-social support, and stigma reduction is essential to ensure that Delhi's HIV response goes beyond medical compliance toward dignity, inclusion, dialogue and justice for all.

The findings highlight that while Delhi has achieved strong ART and TI coverage, stigma and discrimination continue to shape the experiences of both PLHIV and KPs in subtle yet significant ways. The findings also reveal that while medical access and awareness have improved significantly in Delhi, stigma and discrimination persist in multiple forms.

Across both groups (KP and PLHIV), stigma operates at multiple levels personal, familial, and institutional resulting in emotional exhaustion and fear of disclosure, even as access to healthcare improves. Stigma at healthcare facilities was less overt but still evident.

Recommendations

- Strengthen confidentiality and dignity in healthcare settings
- Build awareness through community-based education
- Create safe spaces for people living with HIV to connect and share
- Integrate mental health and psycho-social care within HIV services at ART and TI centres
- Strengthen stigma-reduction and sensitisation training for healthcare providers and outreach workers
- Expand peer-led counselling and support groups to address internalised
- Promote safe disclosure mechanisms and confidentiality safeguards in all HIV-related services
- Encourage family- and community-level awareness to normalise HIV and reduce moral judgment

Acknowledgement

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A study on stigma and discrimination among People Living with HIV and Key Populations in Goa

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Introduction and rationale

Human Immunodeficiency Virus (HIV) and acquired immunodeficiency syndrome (AIDS) continue to be major public health challenges globally and in India. Despite significant advancements in treatment and prevention, stigma and discrimination against people living with HIV (PLHIV) and key populations (KP) such as men who have sex with men (MSM), female sex workers (FSW), transgender persons (TG), and people who inject drugs (IDU) remain persistent. As per NACO (2020), India has approximately 24.01 lakh PLHIV, with Goa contributing around 4,596 PLHIV to the national estimates (1). However, stigma and discrimination continue to hinder access to healthcare, education, and employment, adversely affecting the physical and psychological well-being of affected individuals (2).

In Goa, where awareness and education levels are comparatively high, stigma persists due to misconceptions, fear of transmission, and moral judgments against key populations. This negatively impacts testing, treatment adherence, and prevention efforts. PLHIV often experience social isolation, denial of services, and violation of basic rights. Addressing stigma and discrimination is therefore critical to achieving the goals of the National AIDS Control Programme and ensuring equitable healthcare. The present study is needed to assess the level, forms, and determinants of stigma and discrimination in Goa and to strengthen strategies for promoting inclusiveness, empathy, and rights-based care for PLHIV.

Objectives

- To understand the level of stigma and discrimination among PLHIV and KP in Goa
- To identify the determinants of stigma and discrimination among PLHIV and KP in Goa

Methodology

A cross sectional study to understand the stigma and discrimination among PLHIV and KP was conducted in Goa using a multi-stage probability sampling technique, wherein stage I involved the selection of ART centres and TI-NGOs through stratified sampling technique, and stage II included the preparation of sampling frames and random selection of participants. The sample consisted of a total of 870 participants, including 461 PLHIV and 409 from key populations (from each sub-group: FSW (103), MSM (100), IDU (105), TG (101)). The ART Centres of Goa Medical College & Hospital, Bambolim, and South Goa District Hospital (Hospicio Hospital), Margao, served as major referral units providing comprehensive HIV care services were selected as study sites for PLHIV group. The KP included FSW, IDU, TG and MSM registered with targeted intervention (TI) NGOs in Goa.

A structured tool developed by NACO was used for data collection. Data were collected through interviews after obtaining informed consent from participants, and entries were made in the Excel sheet shared by NACO. The collected data were analysed using SPSS Version 25, applying both descriptive and inferential statistics as per the study objectives.

Ethical approval was obtained from the Ethical Committee of the Directorate of Health Services, Goa. Informed consent, voluntary participation, and strict confidentiality of participant information were ensured throughout the study.

Findings

A total of 870 respondents were assessed — 461 People Living with HIV (PLHIV) and 409 members of Key Populations (KP) including Female Sex Workers (FSWs), Men who have Sex with Men (MSM), Transgender persons (TG), and Injecting Drug User (IDU) — to determine levels and determinants of stigma and discrimination in Goa.

Among PLHIV, the majority were males (55.3%) and the age-wise categorisation showcased dominant age groups as 41–50 years (28.2%), followed by 51–60 years (27.3%). Educational status was largely up to secondary level (39%), and about 43.6% were engaged in private employment.

The knowledge and awareness assessment among PLHIV showcased that 83.7% rejected the myths around transmission of HIV/AIDS through casual contact, while 75.9% knew that mosquito bites also do not cause HIV. Additionally, 80.5% and 68.1% PLHIV recognised that being with a faithful partner and consistent use of condom respectively were few of the preventive measures of HIV. It was observed that 75.1% of them knew that a healthy-looking person can also have HIV/AIDS. However, it was seen that majority of PLHIV (65.5%) had not participated in any HIV/AIDS awareness campaign in the last 12 months and 60.5% felt that such campaigns will be effective in reducing stigma.

It was observed that 78.5% of PLHIV had disclosed their HIV status to anyone outside of healthcare providers and most of them (48.8%) shared that family members accepted their HIV status.

Enacted stigma was found to be low with 98.3% receiving care without any stigma and discrimination at ART centres. It was also reported from 96.5% of the respondents that healthcare workers were sensitised about handling the documents of PLHIV and they did not face any incident where their status was publicly marked on medical records. None of the PLHIV were denied services at ART, DSRC or TB Testing facilities.

In the study, it was observed that self-stigma (internalised negative feelings) remained high among PLHIV, where 69.8% reported experiencing sadness or hopelessness, while 64.6% felt anxious or stressed to how others will react to their HIV status. Around 59.2% respondents mentioned that their self-esteem is affected by stigma associated with HIV/AIDS.

Association between socio-demographic indicators and enacted stigma among PLHIV showed significant association between occupation and enacted stigma ($F=7.134$; $p<0.000$), while no significant association was observed with age, education, gender, etc. Association between socio-demographic indicators and self-stigma among PLHIV showed significant association with education ($F=3.737$; $P<0.005$) and Marital Status ($F=6.836$; $P<0.001$), while no significant association was observed with age, date of registration etc.

The statistical correction analysis between self-stigma and HIV related knowledge among PLHIV showed a positive correlation, hence inferring that high knowledge and awareness will be useful in reducing stigma and discrimination (Table 1).

Table 1 Correlation between self-stigma and knowledge among PLHIV (n=461)

Variables	Mean	SD	'r' value	P value
Knowledge	11.9024	2.78451	.243**	.000
Self-Stigma	22.3254	5.51385		

Among KPs, 50.8% were aged between 26–35 years. Around 37.4% had completed primary level education.

The knowledge and awareness of HIV/AIDS among different KP groups is provided in Table 2. It was observed that the majority in all KP groups (FSW-91.3%, MSM-88%, TG-93.1%, IDU-51.4%) negated that HIV could be spread through casual contact, while 91% FSW, 86% MSM, 94% TG knew that HIV does not spread through mosquito bite, however, majority of IDU (43.8%) affirmed that mosquito bites were a transmission route of HIV/AIDS. Majority of KP also knew that presence of one faithful partner and consistent condom use during sexual activities possibly reduces HIV transmission (Table 2).

Table 2 Knowledge and awareness related to HIV/AIDS among KP

Knowledge and awareness of HIV/AIDS	FSW n (%)	MSM n (%)	TG n (%)	IDU n (%)
HIV can be transmitted through casual contact				
Yes	3 (2.9)	11 (11)	1 (1%)	47 (44.8)
No	94 (91.3)	88 (88)	94 (93.1)	54 (51.4)
Don't Know	6 (5.8)	1 (1)	6 (5.9)	4 (3.8)
Total	103 (100)	100 (100)	101 (100)	105 (100)
HIV can be transmitted through mosquito bite				
Yes	(6.8)	10 (10)	1 (1)	46 (43.8)
No	91 (88.3)	86 (86)	95 (94.1)	35 (33.3)
Don't Know	5 (4.9)	4 (4)	5 (5)	24 (22.9)
Total	103 (100)	100 (100)	101 (100)	105 (100)
The risk of HIV transmission can be reduced through regular condom use				
Yes	93 (90.3)	79 (79)	87 (86.1)	73 (69.5)
No	6 (5.8)	18 (18)	13 (12.9)	20 (19)
Don't Know	4 (3.9)	3 (3)	1 (1)	12 (11.4)
Total	103 (100)	100 (100)	101 (100)	105 (100)
Knowledge and awareness, if possible, The chances of getting HIV/AIDS can be reduced by having just one uninfected faithful sexual partner				
Yes	83 (80.6)	83 (83)	88 (87.1)	74 (70.5)
No	10 (9.7)	14 (14)	8 (7.9)	20 (19)
Don't Know	10 (9.7)	3 (3)	5 (5)	11 (10.5)
Total	103 (100)	100 (100)	101 (100)	105 (100)
A healthy looking person can also have HIV				
Yes	81 (78.6)	86 (86)	87 (86.1)	61 (58.1)
No	9 (8.7)	4 (4)	1 (1)	19 (18.1)
Don't Know	13 (12.6)	10 (10)	13 (12.9)	25 (23.8)
Total	103 (100)	100 (100)	101 (100)	(100)

Enacted stigma (external discrimination) was found to be low, where 82.1% of total KP reported no denial of healthcare services. Self-stigma (internalised negative feelings) remained high with 61.8% of KP experienced sadness or hopelessness related to HIV, 55.3% reported reduced self-esteem. About 52.6% avoided disclosing their KP identity for fear of discrimination.

While discriminatory practices in healthcare have decreased, internalised stigma and fear of social judgment persist across both PLHIV and KPs. Transgender (TG) participants reported the most pronounced psychological distress, citing rejection, ridicule, and social isolation. FSWs and MSM also experienced community-level stigma affecting livelihood and relationships. PWID respondents cited discrimination related to drug use and healthcare access.

Conclusion

The study on stigma and discrimination among PLHIV and KP in Goa revealed that despite advancements in awareness and treatment, stigma continues to affect the lives, health-seeking behaviours, and social integration of affected individuals. The study emphasises that stigma and discrimination are multidimensional and context-specific, influenced not only by knowledge but also by deep-rooted social, cultural, and economic factors. Continuous awareness campaigns, peer support, counselling, and inclusive policy measures can foster a stigma-free environment, improving mental well-being and adherence to treatment. These findings highlight the need for stigma-reduction strategies emphasising psycho-social counselling, peer support, inclusive education, and employment sensitisation to create an enabling environment for both PLHIV and KPs.

Recommendations

Integrate anti-stigma and discrimination modules into ongoing NACP awareness programmes. Strengthen community-level counselling, peer-led education, and employer sensitisation. Develop workplace and institutional policies addressing HIV-related stigma. Enhance media campaigns that normalise living with HIV and highlight success stories from Goa to promote social acceptance. Overall, reducing stigma and discrimination requires a comprehensive, multi-sectoral approach that combines education, policy enforcement, and community participation to ensure dignity, equality, and quality of life for all individuals affected by HIV.

Acknowledgement

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Stigma and discrimination among People Living with HIV & Key Populations in Himachal Pradesh

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Introduction and rationale

Stigma and discrimination (S&D) touch the everyday life of people suffering from Human Immuno Deficiency Viruses (HIV) (1). According to the UNAIDS, stigma is often described as a process of devaluation. HIV related stigma is used as an umbrella term to include stigma that one experiences because of one's HIV status, as well as stigma from other identifications or key population groups that are associated with HIV. Discrimination involves treating someone in a different and unjust, unfair, or prejudicial manner, often because they belong to, or are perceived to belong to, a particular group. It is often viewed as the result of the process of stigmatisation (2). The Government of India has enacted the HIV/AIDS Prevention & Control Act, 2017, to address the grievances of PLHIV and to prevent any discrimination on this account (3).

The stigma associated with the disease results in discrimination, often seen at workplaces, within communities, families as well as at healthcare centers (4, 5). A prejudiced stereotyping along with disgust and isolation is often observed among people, who often blame PLHIV for their condition (6). The lack of knowledge and misinformation about the spread of the disease is often the reason for such behaviour (7).

This stigma and discrimination not only affect the health and mental well-being of PLHIVs but also of female sex workers (FSW), long distance truckers, Men who have sex with men (MSM), Injecting drug users (IDUs) and transgenders (TG). It would be difficult to achieve the goal of 'Ending the AIDS' epidemic by 2030 without addressing the issue of discrimination deeply rooted in stigma, with PLHIV (8).

This study envisages to assess the extent of stigma and discrimination among PLHIV and its impact on their health seeking behaviour.

Objectives

- To understand the level of S&D among PLHIV & Key Populations (KPs)
- To identify the determinants of S&D among PLHIV & KP

Methodology

A cross-sectional study was conducted across four ART centres using systematic random sampling in Himachal Pradesh (Kangra, Hamirpur, Shimla, Una) to obtain a state-representative sample. Adults (≥18 years) living with HIV and KP- FSW, MSM, IDU and TG were included. PLHIV were enrolled from ART centres, while KP were recruited through NGOs collaborating with HPSACS. The final sample comprised 400 PLHIV, 100 FSW, 100 MSM, 100 IDU, and 43 TG participants, proportionately selected from the four centres based on population burden.

Standardised NACO stigma and discrimination tools were administered through structured interviews. Trained investigators used the tools. ART counsellors explained the study, obtained informed consent, and ensured privacy. Interviews were conducted in counselling rooms or, where necessary, through home visits. Data were entered in MS Excel and analysed with Epi Info v7.

Interviewers received training, tools were pretested, and confidentiality was strictly maintained. Ethical approval was obtained from the Institutional Ethics Committee of Dr. RPGMC, Kangra. Data collection was completed in three months, followed by one month of analysis and reporting.

Findings

Among PLHIV, gender distribution was nearly equal. Most respondents had secondary education. Over half were married, with many in informal employment. A majority were currently married (56.7%). Comorbidities were common (84.5%), particularly tuberculosis (6.7%), diabetes (4.7%), and hypertension (3.9%). Knowledge of HIV transmission was generally high, yet misconceptions persisted, with 1.7% believing casual contact and 7.1% mosquito bites could spread infection, while 16.5% assumed a healthy-looking person could not have HIV. About 91.6% and 84.2% believe that condom use and having a faithful partner reduces risk respectively. Notably, only 49% felt awareness campaigns reduced stigma. Most respondents (98%) accessed regular ART care, but disclosure outside the healthcare system was rare (13.1%). Encouragingly, both enacted and perceived stigma were minimal, with >98% denying experiences of discrimination, social withdrawal, or employment-related disadvantage, though awareness of workplace policies was extremely low (≤2%). Access to healthcare was largely unimpeded, with >96% denying discrimination or ART non-adherence. Despite low reported stigma, mental health concerns were prominent, with 60.1% experiencing sadness, 57.9% anxiety, 48.5% low self-esteem, and 53% lacking a sense of being valued. Family rejection was infrequent (5.4%), and coping strategies centered on living a normal life (45.6%), with some resorting to isolation (11.6%) or spirituality (3.2%). Education, awareness (25%), open dialogue (15%), and community-led campaigns (8.3%) were proposed to reduce stigma.

Table 1 Impact on mental health among PLHIV in Himachal Pradesh

Category	Response	Himachal Pradesh (N=406)
Feelings of Sadness or Hopelessness	No	162 (39.9%)
	Yes	244 (60.1%)
Anxiety/Stress Due to Others' Reactions	No	170 (41.9%)
	Yes	235 (57.9%)
	Don't Know/ Missing	1 (0.2%)
Self-Esteem Affected	No	209 (51.5%)
	Yes	197 (48.5%)
Feeling Valued and Respected	Yes	190 (46.8%)
	No	215 (53.0%)
	Don't Know/ Missing	1 (0.2%)

Among the FSWs, education was varied, with most having primary or secondary schooling, and few pursuing higher educations or having none. Most were currently married (92%) and mainly homemakers (83%), with few in other occupations. All reported at least one comorbidity, with the vast majority (93%) falling into the unspecified category. Knowledge and awareness of HIV were high, with most recognising that transmission does not occur through casual contact (96%) or mosquito bites (90%), and that condom use reduces risk (90%); however, misconceptions persisted, with 30% believing a healthy-looking person could not have HIV.

Disclosure of key population identity outside healthcare was rare (2%) among the FSW. Encouragingly, universal access to care was reported at DSRC/STI clinics, with 99% supported by TI/NGOs and no reports of service denial or delays in ICTC/PPTCT/DSRC settings. Self-stigma was generally low, as most never avoided social interactions (81%) or felt shame to their families (78%), and almost all denied experiences of unfair treatment (97%) or employment discrimination (97%), though awareness of workplace policies was poor (18%). While healthcare access was largely secure, 19% reported delaying care due to discrimination concerns, and although all had engaged with HIV/AIDS support groups, only half considered NGO services sufficient. Mental health

concerns were notable, with 31% reporting sadness and 30% anxiety or low self-esteem, though family support was relatively strong (77%). Most (80%) coped by striving to live a normal life.

Among the MSMs, higher secondary level education was most common (48%), followed by secondary level (22%) while 10% had no schooling. Employment was mainly private (41%). Most respondents were married (63%). All reported at least one comorbidity. Knowledge and awareness of HIV were generally high, with most recognising that it does not spread through casual contact (89%), acknowledging condom protection (94%) and partner fidelity (90%), and supporting the role of awareness campaigns in reducing stigma (92%). However, misconceptions persisted, as 18% believed in mosquito transmission and 25% assumed a healthy-looking person could not have HIV.

Disclosure of key population identity by MSM outside healthcare remained limited (16%), though service access was universal across TI-NGOs, DSRC/STI, and ICTC/PPTCT facilities. No enacted stigma in the form of service denial, mistreatment, or waiting time disparities was reported. Self-stigma was evident in a minority, with 13% avoiding interactions, 18% experiencing shame, 9% associating HIV with karma or sin, and 11% withholding disclosure due to fear of discrimination, although employment-related challenges were rare (89% denied such experiences). Access to healthcare was largely unimpeded, with 98% reporting no discrimination and no skipped services due to identity concerns; nonetheless, 20% felt NGO services were inadequate despite 85% engaging with support groups. Mental health challenges were prominent, with 86% not feeling valued or respected, though family and peer support was strong (97%). Coping was primarily through normalisation of life (90%).

Among the IDUs, all were male. Most (49%) of IDU had higher secondary level of educational status. Employment was mainly informal or unspecified (51%), with some in private jobs (28%) or self-employment (16%), and very few in government (2%) or student (3%) roles. All reported at least one comorbidity, with Hepatitis C emerging as a notable condition in Una (28%). Awareness of HIV transmission was relatively high, with 91% recognising that casual contact does not spread the infection; while majority (95%) also affirmed that consistent use of condoms and faithful partner (93%) reduces the risk of HIV; however, misconceptions persisted, as 35% believed that a healthy-looking person could not be HIV-positive, and only 63% acknowledged the role of awareness campaigns in reducing stigma.

Disclosure of key population identity among IDU outside healthcare was limited (33%), despite near-universal service access (99%) through TI-NGOs and government facilities. No enacted stigma in healthcare was reported, yet self-stigma was pronounced, with 21% practicing avoidance, 39% experiencing shame, 28% linking HIV to karma or sins, and 20% withholding disclosure due to fear of discrimination frequently. Notably, 39% had personally experienced discrimination, and only half felt that KPs did not face employment challenges. While healthcare access was generally uninterrupted (2% skipped services), and support group engagement was high (95%), only 38% considered NGO services adequate. Mental health burdens were considerable, with over half reporting sadness (57%), anxiety (53%), low self-esteem (56%), and lack of respect (51%). Family and peer support was strong (84%), and coping was largely through normalisation of life (70%).

Among TGs, most participants (79.1%) had higher secondary education, with 16.3% having primary and 4.7% graduation or above. All participants were self-employed. All respondents reported at least one comorbidity. Knowledge of HIV was mixed: while 95.3% correctly recognised that casual contact does not spread HIV and all acknowledged the protective role of condoms, misconceptions were widespread, with 53.5% believing a healthy-looking person could not be HIV-positive and only 55% crediting awareness campaigns with reducing stigma. Service access was universal across TI-NGO and government facilities, and no enacted stigma was reported in healthcare. However, self-stigma and perceived discrimination were strikingly high: 14% practiced avoidance, 72.1% felt ashamed or embarrassed about their identity, and over half (55.8%) believed they had brought shame upon their families frequently.

Experiences of unfair treatment (39.5%), blame (27.9%), and guilt linked to karma or sin (30.2%) were also reported. All TG respondents mentioned they had not disclosed their KP identity to outsiders other than healthcare system. Despite of non-disclosure of identity, structural stigma was evident, with 30.2% facing discrimination in education, 44.2% in employment, and nearly 48.8% perceiving unequal opportunities in careers and education. Awareness of workplace policies was limited (65.1% unaware), and only 16.3% recognised a positive role

of educational institutions in reducing stigma. Despite healthcare access being largely uninterrupted (1 TG individual skipped services), none reported seeking support from HIV/AIDS groups.

Conclusion

The co-morbidity burden is significant among the PLHIV and KPs. Knowledge and awareness regarding some aspects like non-transmission of HIV through mosquito bite and that a healthy-looking person can also be HIV positive is not widespread. Participation in awareness campaigns was found to be poor. A majority still choose not to disclose their identity outside the health system. Majority of the respondents did not report any major instances of experiencing stigma or discrimination. Awareness regarding the existence of workplace policies is poor. A significant minority of the respondents reported having no knowledge about the presence of support services for PLHIV or KPs. Mental health issues were experienced by more than half of the respondents. Most of them suggested that increased awareness will help in reducing stigma and discrimination in the society.

Recommendations

- The findings underscore the need for comprehensive, multisectoral strategies to address the intertwined challenges of HIV, co-morbidities, and stigma. Strengthening early diagnosis and treatment services, alongside integration of mental health support within the National Mental Health Programme would help to improve overall wellbeing.
- Digital platforms, leveraging the state's strong tele density can offer an opportunity for broader, youth-friendly outreach.
- Facilitating safe and voluntary disclosure of identity, coupled with community-based stigma reduction initiatives, can foster trust and inclusion.
- District-specific, data-driven approaches, combined with mainstreaming HIV and drug-use education in schools and colleges would be helpful for long-term change.
- Finally, enhancing gender sensitisation and improving the quality, reach, and responsiveness of support services remain central to reduce disparities, particularly for TGs.

Limitations

Responses related to personal behaviour might have been influenced by social desirability biasness leading to underreporting. Partial sample size (43/50) of the transgender population could be reached due recruitment challenges.

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A study on experiences of stigma and discrimination among People Living with HIV/ AIDS and Key Populations in Jammu & Kashmir

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Introduction and rationale

Human Immuno Deficiency Viruses (HIV) related stigma and discrimination are described as the greatest barriers to the practice of safe and effective HIV prevention, treatment and care strategies (1).The stigmatic attitude towards People Living with HIV (PLHIV) and Key Population (KP) is seen not only among the general population but also among health care workers, co-workers at employment and caregivers (2). While there has been some progress with regard to the stigma and the health systems and some improvement in the treatment and awareness of the disease, PLHIV and KP often face exclusion from healthcare systems, denial of employment, social ostracism and even discrimination within their families (3, 4). These all have a profound psychological impact which deters individuals from utilising the health systems and in many cases, contributes to a worsening of the health outcomes of the individuals and in turn, contributes to the impact of HIV. HIV being highly stigmatised in nature due to a variety of socio-cultural misconceptions has both psycho-social as well as bio-medical implications on the affected individual (5). The affected people tend not to disclose their status and suffer from stigma, victimisation, ostracisation and` isolation (6). The experiences of stigma and discrimination among the PLHIV and KP remains deeply complex and a worrying challenge in India (7, 8).

With this background, a scientific study to capture the experiences of stigma and discrimination of PLHIV and KP in Jammu & Kashmir was important for providing evidence for health policies, awareness and community approaches that are inclusive, culturally-sensitive and robust.

Objectives

- To understand the level of stigma & discrimination among PLHIV and members of the KP groups living in Jammu and Kashmir
- To identify the determinants of stigma & discrimination among PLHIV and members of the KP groups living in Jammu and Kashmir
- To provide a set of recommendations to address the issue of stigma and discrimination faced by PLHIV and KP groups in light of the findings of study

Methodology

Based on quantitative approach, this is a cross-sectional descriptive study conducted in the Union Territory (UT) of Jammu and Kashmir. The study captures the experiences of stigma and discrimination using primary data collected from the PLHIV registered and receiving ART services from the three ART centres (SKIMS Srinagar, GMC Jammu and GMC Kathua) spread across the UT of Jammu & Kashmir and HIV negative members of the KP consisting of female sex workers (FSW), men who have sex with men (MSM), and injecting drug users (IDU) presently registered and availing facilities from Targeted Intervention (TI) NGOs registered with NACO and JKSACS, working in Jammu and Kashmir. Systematic random sampling was done to select both PLHIV and KP. Standardised NACO stigma and discrimination tools were administered through structured interviews. The total sample size was 715 (PLHIV- 441 and KP 304). The TG population was not included owing to their absence in the study area. IRB approval was sought from University of Kashmir, Srinagar.

Findings

In case of PLHIV, it was recorded that there are fewer women living with HIV (33.3%) in the PLHIV recruited for this study. Around 52.8% of the respondents were between the age group of 31 to 50. The data reveals that PLHIV in Jammu and Kashmir were having basic access to formal HIV services and care. The treatment adherence was very pronounced. It was found that the ART centres, DSRC/STI centre and TB testing and treatment facilities provide healthcare that is more sensitised towards HIV related stigma and discrimination. A higher percentage (61.3%) responded that their HIV status had never caused them to feel ashamed or embarrassed. Majority (81.5%) of the respondents did not know if any anti-discrimination or anti-stigma policies are in place at their workplaces. Similarly, 45.5% of respondents believe PLHIV have trouble securing jobs. Testing and treatment coverage are strongly limited by mental health issues, lacking knowledge, persistent stigma and difficulties with education and work.

In case of KP, the study shows that most of the respondents (70.8%) are in 18 to 30 years age group and majority of them (66.2%) are males. Majority of the respondents (45.2%) are economically weak. It is was found that majority of the respondents (71.7%) have been tested for HIV and more than 90% of them chose to get tested on their own. Similarly, the study shows that more than 80% of spouse or partner of KP went for HIV testing. Majority of the respondents had not been denied services because of who they are. Around 17.5% KP had experienced/knew someone who had experienced discrimination due to identity in educational setting, while, 30.6% reported discriminatory attitudes at workplace setting. More than half (53%) say their KP identity did not come in the way of finding employment and 59.2% felt that KP also have a chance on equal educational opportunities in comparison to non-KP. The study has also revealed that FSWs show strong engagement with TI-NGO services, while MSMs and IDUs largely joined recently, reflecting ongoing outreach.

Over 83.6% respondents visited a TI-NGO in the last 12 months, with DSRC/STI clinic utilisation at 74% and ICTC/PPTCT at 76%. HIV testing coverage is high among FSWs (90.1%) and IDUs (80%) but lowest among MSMs (45%) with voluntary testing prevalent across groups. Avoidance of services due to fear of disclosure was observed among KP at TI/NGO (19.8%), ICTC/PPTCT (18.1%), DSRC/STI centres (17.1%) and at TV testing facilities (14.1%). Majority of the respondents (69.7%) were aware that using protection helps protect against HIV, however, only 48.9% percent knew that being with one uninfected faithful sexual partner could reduce the risk and most of the respondents claimed to follow care and support services. The results of the analysis pointed out that awareness, social support, and health support would significantly affect self-stigma, enacted stigma, mental health, and interactions among PLHIV and KP. That is, awareness is inversely related to self-stigmatisation, as those with greater knowledge about HIV tend to experience lower levels of internalised stigma. It is also positively related to mental health and social support. Awareness is deemed to have no impact on enacted stigma, which implies that, this external discrimination or social bias needs societal addressing. Social support positively correlates with mental health-most understandably; people possessing advanced social support systems experience lesser self-stigma and have a better quality of life. Health support services were observed to have moderate effects on mental well-being and a very weak effect on the reduction of stigma. Demographic factors such as education, occupation, and marital status influence stigma levels and access to healthcare.

Conclusion

It is observed from the study that the KP faced stigma & discrimination at family, community, educational and workplace settings. While support from NGOs and ART centres provides some relief, entrenched misconceptions and prejudices remain a major barrier. The findings highlight the urgent need for awareness campaigns, policy interventions, and community engagement to foster inclusivity, protect rights, and ensure dignity for PLHIV and KPs in the region.

Recommendations

- Focus on health care institutes (ART, STI clinics, Testing) through comprehensive care approach, improved service delivery and patient-centred approach, community-led ART initiatives, regular sensitisation training for health care providers.

- Focus on NGOs & Community-Based Organisations (CBOs) through enhancing peer support group programmes, legal & advocacy support and strengthening social support mechanisms.
- Strengthen mental health services by integrating mental health care into HIV/AIDS programme. To also promote community-based mental health awareness campaigns to reduce stigma and normalise seeking psychological help.
- Legal & policy reforms through robust legal frameworks to ensure access to care without discrimination.
- Economic empowerment initiatives should be undertaken as they enhance the self-sufficiency and dignity of individuals living with HIV/AIDS. Skill development programmes, livelihood training, and micro-credit facilities can help affected persons secure sustainable income sources.

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HIV related stigma and discrimination among People Living with HIV and Key Populations in Jharkhand

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Introduction and rationale

The HIV/AIDS epidemic in India remains a pressing public health concern, significantly worsened by pervasive stigma and discrimination driven by societal misunderstandings of HIV transmission and rigid mindsets. These factors disproportionately impact People Living with HIV (PLHIV) and Key Populations (KP), including Female Sex Workers (FSW), Injecting Drug Users (IDU), Men who have Sex with Men (MSM), and Transgender persons (TGs), restricting their access to healthcare and eroding well-being. The misconception that HIV stems from immoral behaviour, rather than structural and social determinants, perpetuates discrimination. This stigma manifests as self-stigma, mental health burdens, and barriers to services, necessitating localised insights (1). This study was conducted in Jharkhand to evaluate the extent of HIV-related stigma and discrimination, including self-stigma, mental health impacts, and healthcare access challenges among PLHIV and Key Populations (KP). The study aim to provide evidence-based insights to guide the Jharkhand State AIDS Control Society (JSACS) in developing targeted interventions to mitigate these issues, addressing both external discrimination and internalised stigma to improve health equity and quality of life.

Objectives

- To assess the prevalence of HIV-related stigma and discrimination among PLHIV and KP
- Identify and assess challenges in reducing HIV related stigma and discrimination among PLHIV and KP in Jharkhand

Methodology

This study adopted a cross-sectional design, utilising a mixed-methods approach to gather comprehensive data, following Institutional Ethics Committee (IEC) approval from our institute. Districts were selected based on detailed residential data on People Living with HIV (PLHIV) and Key Populations (KP) from the Jharkhand State AIDS Control Society (JSACS). Jamshedpur, Dhanbad, and Ranchi were chosen for their high concentrations of PLHIV and KP groups (Female Sex Workers [FSW], Men who have Sex with Men [MSM], Transgender individuals [TGs], and Injecting Drug Users [IDUs]), ensuring diverse representation. Jamshedpur has the highest KP burden and second highest PLHIV prevalence, while Dhanbad and Ranchi also show significant presence of these population groups.

Inclusion criteria targeted consenting individuals aged 18+ with HIV (PLHIV) or from Key Populations (KP) regardless of HIV status. Exclusion criteria included those unwilling to consent, sick, bedridden, or hospitalised with HIV. The sample size around 800, with 400 PLHIV and 400 Key Populations (KP), disaggregated by gender (Female, Male, Transgender).

Quantitative and qualitative data were collected using NACO questionnaires. PLHIV interviews occurred in isolated ART rooms without facility staff, while Key Populations (KP) (IDUs, TGs, MSMs) were interviewed in secluded NGO Targeted Intervention (NGO TI) corners. Data were managed and analysed using AtlasTi version

24 (AtlasTi Scientific Software Development GmbH, Berlin), with English translations reviewed for accuracy. Word trees visualised thematic areas, such as coping mechanisms, for both groups.

Quantitative data are presented as numbers and percentages, with Chi-square tests in SPSS v29.0 assessing associations. Qualitative findings are illustrated through word trees. A validated NACO tool, covering domains like disclosure experiences, healthcare interactions, access to support, knowledge, attitudes, subjective stigma, mental health impacts, and sociodemographic details, was employed to comprehensively assess HIV's multi-faceted effects.

Findings

The socio-demographic profiles of the two groups were significantly distinct across most variables. The KP cohort was characterised by an equal distribution across the four key typologies (FSW, IDU, MSM, and TGs), a younger mean age, and a higher proportion of never-married individuals. Conversely, the PLHIV group was predominantly married, older, and exhibited higher formal educational attainment. The study revealed significant HIV-related stigma and discrimination among PLHIV and Key Populations (KP) in Jharkhand. Among 400 PLHIV, 73.5% (n=294) reported anxiety or stress due to others' reactions, and 78.5% (n=314) experienced feelings of sadness or hopelessness. Additionally, 58.5% (n=234) had their self-esteem affected by stigma, while 48.8% (n=195) did not feel valued or respected. One participant described: *"I cannot sleep at night, always worried about my health and what people will think"* (PLHIV, 42 years), showing the profound impact of hopelessness and anxiety. For 400 Key Populations (KP), the mental health burden was substantially lower, with 32.2% (n=129) reporting anxiety or stress and 34.2% (n=137) experiencing sadness or hopelessness. However, KP reported feeling less valued than PLHIV, with 63.8% (n=255) indicating they did not feel valued or respected in their communities.

External discrimination was minimal, with 5.3% of PLHIV delaying care and minimal individuals from both groups facing admission discrimination, while >99% of both groups utilised healthcare services. A participant KP noted, *"People think we deserve HIV because of our lifestyle",* reflecting rigid mindsets fuelling discrimination.

Self-stigma patterns differed markedly between the two groups, with PLHIV experiencing substantially higher intensity and frequency of internalised stigma. While 43.8% of PLHIV reported bringing shame to their family at least once compared to 26.5% of KP, the frequency was notably higher among PLHIV (16.3% reporting frequent or repeated feelings versus only 1.5% of KP, $p<0.001$). Similarly, 26.8% of PLHIV believed they were paying for karma or sins due to their status compared to 25.7% of KP, though PLHIV reported more frequent experiences (15.5% a few times or frequently versus 1.2% of KP). The majority of both groups (73.0% of PLHIV and 73.8% of KP) never believed they were paying for karma or sins. Tables 1, 2 and 3 highlight these findings.

Table 1 Prevalence of mental health impacts among PLHIV and Key Populations due to HIV/KP Status (N=800)

Question	PLHIV (N=400)			KP (N=400)		
	No answer	No	Yes	No answer	No	Yes
Feelings of Sadness/ Hopelessness	0 (0.0%)	86 (21.5%)	314 (78.5%)	0 (0.0%)	263 (65.8%)	137 (34.3%)
Anxious/Stressed (due to others' reaction)	1 (0.3%)	105 (26.3%)	294 (73.5%)	1 (0.3%)	270 (67.5%)	129 (32.3%)
Self-esteem affected by Stigma	1 (0.3%)	165 (41.3%)	234 (58.5%)	4 (1.0%)	276 (69.0%)	120 (30.0%)
Feel Valued/Respected	1 (0.3%)	195 (48.8%)	204 (51.0%)	3 (0.8%)	255 (63.8%)	142 (35.5%)

Table 2 Prevalence of discrimination experiences among PLHIV and Key Populations while accessing healthcare services

Question	Response	PLHIV (N=400)	KP (N=400)	p-value
Skipped or stopped visiting ICTC/PPTCT due to concerns about identity	No	399 (99.8%)	396 (99.0%)	>0.05
	Yes	1 (0.3%)	4 (1.0%)	
Skipped or stopped visiting DSRC/STI facilities due to concerns about identity	No	400 (100.0%)	398 (99.5%)	>0.05
	Yes	0 (0.0%)	2 (0.5%)	
Skipped or stopped visiting TB treatment facility due to concerns about identity	No	398 (99.5%)	399 (99.8%)	>0.05
	Yes	2 (0.5%)	1 (0.3%)	
Skipped or stopped HIV prevention services due to concerns about identity	No	397 (99.3%)	399 (99.8%)	<0.05
	Yes	3 (0.8%)	1 (0.3%)	
Delayed or avoided medical care due to fear of discrimination	No	379 (94.8%)	399 (99.8%)	<0.001
	Yes	21 (5.3%)	1 (0.3%)	
Experienced or known someone who faced discrimination at admission	No	399 (99.8%)	397 (99.3%)	>0.05
	Yes	1 (0.3%)	3 (0.8%)	
Sufficient support services available for your community	No	260 (65.0%)	379 (94.8%)	<0.001
	Yes	140 (35.0%)	21 (5.3%)	
Sought support from KP/HIV/AIDS support groups or counselling services	No	373 (93.3%)	378 (94.5%)	>0.05
	Yes	27 (6.8%)	22 (5.5%)	
Total		**400 (100.0%)**	**400 (100.0%)**	

Table 3 Prevalence of self-stigma among PLHIV and Key Populations

Self-Stigma Components	Response	PLHIV (N=400)	KP (N=400)	p-value
Brought shame on family due to PLHIV/KP status	A few times	61 (15.3%)	6 (1.5%)	<0.001
	Frequently	4 (1.0%)	0 (0.0%)	
	Never	221 (55.3%)	294 (73.5%)	
	Once or twice	110 (27.5%)	100 (25.0%)	
	Refused	4 (1.0%)	0 (0.0%)	
Thought you are paying for karma/sins due to PLHIV/ KP status	A few times	48 (12.0%)	5 (1.2%)	<0.001
	Frequently	14 (3.5%)	0 (0.0%)	
	Never	292 (73.0%)	295 (73.8%)	
	Once or twice	45 (11.3%)	98 (24.5%)	
	Refused	1 (0.3%)	2 (0.5%)	
Total		**400 (100.0%)**	**400 (100.0%)**	

Conclusion

This study reveals significant HIV-related stigma impacting both PLHIV and Key Populations (KP). Mental health issues are evident, with 55.3% of PLHIV and 30.7% of KP reporting anxiety. Belief in karma as a cause of HIV persists among 10.0% of PLHIV and 25.0% of KP, perpetuating misconceptions. While over 99% utilise services, and direct discrimination for specific issues like FSW admission (3.0%) or PLHIV delaying care (5.2%) appears limited, deeper challenges remain. Notably 15.3% of PLHIV and 16.0% of KP feel family shame due to their status. These findings underscore urgent need for targeted focus/interventions to reduce internalised stigma and enhance comprehensive support.

Recommendations

Provide crucial mental health support for PLHIV (73.5% anxiety, 78.5% sadness/hopelessness) and KPs (32.2% anxiety, 34.2% sadness/hopelessness). Prioritise training healthcare providers to minimize discrimination, particularly addressing the 5.3% of PLHIV who delayed care due to fear of discrimination. Enhance community support services, as only 35.0% of PLHIV and 5.3% of KPs reported sufficient availability. Address self-stigma through targeted interventions, especially for PLHIV where 43.8% reported bringing shame to family and 26.8% believed in karma-based punishment. Regular programme impact assessment is essential for closely monitoring the growth and impact of stigma and discrimination on mental health of the affected individuals.

Limitations

The cross-sectional design limits causal inference. Self-reported data may involve recall bias. The sample may not fully represent all KP in Jharkhand.

Acknowledgement

We thank NACO and Jharkhand State AIDS Control Society (JSACS) for funding and technical support. Gratitude to community leaders and participants for their contributions, and to the research team and healthcare providers for their dedication. This study owes its success to their collective effort.

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Stigma and discrimination faced by People living with HIV/AIDS and Key Population in Kerala

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Introduction and rationale

Stigma and discrimination remain formidable barriers to accessing equitable and quality healthcare (1). Despite progressive public health policies and social welfare initiatives, HIV-related stigma and discrimination remain critical barriers to accessing healthcare and social services for People Living with HIV (PLHIV) and Key Populations (KPs) including injecting drug users (IDU), transgender individuals (TG), female sex workers (FSWs), and men who have sex with men (MSM). HIV-related stigma and discrimination is proactively being addressed through the National AIDS Control Programme (NACP), implemented by the National AIDS Control Organisation (NACO) under the Ministry of Health and Family Welfare. Recognising stigma as a critical barrier to HIV prevention, treatment, care, and support, the current National AIDS and STD Control Programme Phase V (2021–26) has set a specific target of ensuring that less than 10% of PLHIVs and KPs experience stigma and discrimination (2). It is in this programme context that the present study was conceptualised and carried out in Kerala. The study seeks to understand the level of stigma and discrimination faced by PLHIV and KPs, identify the determinants, and explore the key factors shaping these experiences.

Objectives

Primary objectives

- To assess the level of stigma faced by PLHIV and key population in Kerala
- To assess the level of discrimination faced by PLHIV and key population in Kerala
- To explore the key factors of stigma and discrimination faced by PLHIV and key population in Kerala

Secondary objectives

- To identify the determinants of stigma faced by the PLHIV and key population in Kerala
- To identify the determinants of discrimination faced by the PLHIV and key population in Kerala
- To explore the gender-wise differences, if any in experience of stigma and discrimination among PLHIV and key population in Kerala

Methodology

This study adopted a sequential mixed methods design to examine stigma and discrimination faced by PLHIV and KP in Kerala. The quantitative component comprised a structured survey administered among PLHIV and KP to capture prevalence, patterns, and determinants of stigma and discrimination. This was followed by qualitative in-depth interviews to provide deeper insights into individual experiences, thereby enriching and contextualising quantitative findings.

The study was conducted across five districts of Kerala with high HIV caseloads: Thiruvananthapuram, Kottayam, Ernakulam, Thrissur, and Kozhikode. Participants were recruited from ART Centres in medical colleges for

PLHIV and from Kerala State AIDS Control Society (KSACS)-supported Targeted Intervention projects for KPs, including IDUs, FSWs, TGs and MSMs. Individuals aged above 18 years who provided informed consent were recruited in the study. The study was conducted among 400 PLHIV and 403 KPs (100 each from FSW, IDU and MSM, and 103 from TG populations) using systematic random sampling. Additionally, 26 participants (12 PLHIV and 14 KPs) were purposively selected for qualitative interviews.

Quantitative data were collected using a structured questionnaire developed by NACO, covering socio-demographic details, enacted stigma, self-stigma, discrimination experiences, access to services, coping, and recommendations. Qualitative data were obtained through in-depth interviews guided by a semi-structured tool, exploring stigma in family, healthcare, workplace, and social settings. Interviews were audio-recorded, transcribed, and thematically analysed. Quantitative data were analysed using SPSS v.25.0 with descriptive statistics and bivariate analysis to identify determinants of stigma and discrimination. Qualitative transcripts underwent thematic analysis to identify recurring patterns.

Ethical approval was obtained from the Institutional Ethics Committee of State Health Systems Resource Centre–Kerala (IEC No: 26/2023). Written informed consent, confidentiality, and participant anonymity were ensured throughout the study.

Findings

Univariate analysis revealed high prevalence of healthcare access challenges and stigma. Among PLHIV, 8.7% experienced breach of confidentiality, and 10.5% and 6% reported discrimination in workplaces or schools respectively. Among key populations (KPs), around 7.1% of TG were denied services at ICTC, STI or TB centres. and remove the highlighted portion. This was also confirmed through qualitative interviews with the PLHIV, where long waiting times at ART centres and increased reliance on private hospitals for non-ART care was reported. Additionally, few TG respondents mentioned facing discrimination at non-NACP facilities during documentation updates.

Bivariate analysis highlighted significant associations between socio-demographic factors and stigma. PLHIV with lower education levels were more likely to face service denial ($p<0.05$). TG participants in rural areas reported higher public discrimination ($p<0.01$), while MSMs with multiple partners were more likely to delay HIV testing due to fear of disclosure ($p<0.05$). Financial constraints were significantly associated with preference for private healthcare facilities among both PLHIV and KPs ($p<0.05$).

Qualitative interviews provided nuanced insights. PLHIV described denial of services, mistreatment, and breaches of confidentiality:

"At the General Hospital, a nurse shouted loudly that I was 'ART' before putting on gloves. At the medical college, they take our blood only after all others. Some doctors say directly- they can't do surgery, go to another hospital"
– PLHIV, Ernakulam and

"When I went to casualty with chest pain, the doctor cancelled my angioplasty after learning my status."

Disclosure often led to family conflict and social isolation:

"My daughter-in-law disclosed my status to relatives. They stopped visiting. I was so disappointed that I filed a case against her."

Coping strategies included secrecy, spirituality, normalisation of the condition, social withdrawal, and ART adherence, with support from family, community, and counselling playing a key role.

FSWs highlighted peer networks and TI NGO staff's support in providing a supportive environment with an office dedicated to their needs, while also protecting them from societal stigma.

"Officers came to Aluva and counselled us. Then we knew about the office and started to contact them. When we have any difficulty, we just call them, and they come to resolve the issue."-FSW, Ernakulam

Targeted intervention (TI) projects were valued for counselling, testing, outreach, and creating safe spaces:

"There are link workers in government hospitals, and they are very useful to us."

FSWs engaged due to peer influence, MSMs sought social recognition, IDUs aimed to improve health and reconnect with family, and TG persons often became peer educators. Educational sessions through TI projects were transformative, fostering empathy, reducing discrimination, and improving awareness of HIV transmission and prevention.

Overall, findings indicate that ART Centres and TI projects are perceived as supportive, though systemic and societal barriers persist. Multi-level interventions, including sustained public education, improved healthcare practices, counselling, and community-level support, are essential to reduce stigma, enhance equitable access, and foster social inclusion.

Conclusion

This study examined stigma, discrimination, healthcare access, and psycho-social well-being among PLHIV and Key Populations (FSWs, MSM, IDUs, TGs) in Kerala using mixed methods. Findings show stigma remains widespread in healthcare, workplaces, schools, and communities, with denial of services, breaches of confidentiality, and exclusion affecting quality of life. Education, employment, and socio-economic status strongly influenced stigma levels, with TGs and IDUs facing multiple disadvantages. Gender differences were evident, as women and widowed PLHIV experienced higher vulnerability. Qualitative insights highlighted psychological distress, resilience through ART, counselling, and peer support. Participants emphasised the need for education, awareness, and livelihood opportunities.

Recommendations

To create an enabling environment, Kerala must pursue holistic strategies that combine health system reforms, community empowerment, and policy change—ensuring that PLHIV and key populations can live with dignity, equality, and full participation in society. At the health system level, it calls for provider sensitisation, patient-friendly ART centres, and expanded role of Community Link worker. Community strategies include awareness campaigns, early sexual health education, and peer support. Policy measures should ensure tailored KP interventions, livelihood opportunities, legal safeguards, and intersectoral collaboration to reduce stigma and promote inclusion.

Limitations

While the study provides valuable insights, its findings should be interpreted in light of certain limitations. First, the results are context-specific, reflecting the experiences of PLHIV and key populations in select districts of Kerala, and may not be fully generalisable to other regions. Second, as the data focused primarily on experiences within healthcare facilities, there may be an inherent bias toward highlighting provider-related stigma, while other community or structural dimensions of discrimination could be underrepresented.

Acknowledgement

I would like to extend my deepest gratitude to the research team for their dedication and commitment throughout the study. I extend my thanks to all the institutions and partners whose support has been vital to the success of this study. The cooperation of outreach workers, peer educators, counsellors, and project managers at the TI centres and ART medical officers and counsellors at ART Centres were indispensable in facilitating the data collection process. The support of study participants is also appreciated.

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Stigma and discrimination among People Living with HIV and Key Population in Madhya Pradesh

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Introduction and rationale

Human Immuno Deficiency Viruses (HIV) related stigma remains a profound challenge, hindering efforts to control the epidemic and ensure the well-being of those affected (1-4). This study aims to address critical gaps in understanding the dynamics of self-stigma and enacted stigma among key populations (KP) and people living with HIV (PLHIV) in Madhya Pradesh. By providing evidence-based insights, this report seeks to contribute to the development of effective interventions and policies to reduce stigma and its associated burdens.

Objectives

- To assess the level of and determinants of self-stigma and enacted stigma among PLHIV linked to Antiretroviral Therapy (ART) centres in Madhya Pradesh
- To assess the level of and determinants of self-stigma and enacted stigma among KPs linked to Targeted Interventions Non-Government Organisations (TI-NGOs) in Madhya Pradesh

Methodology

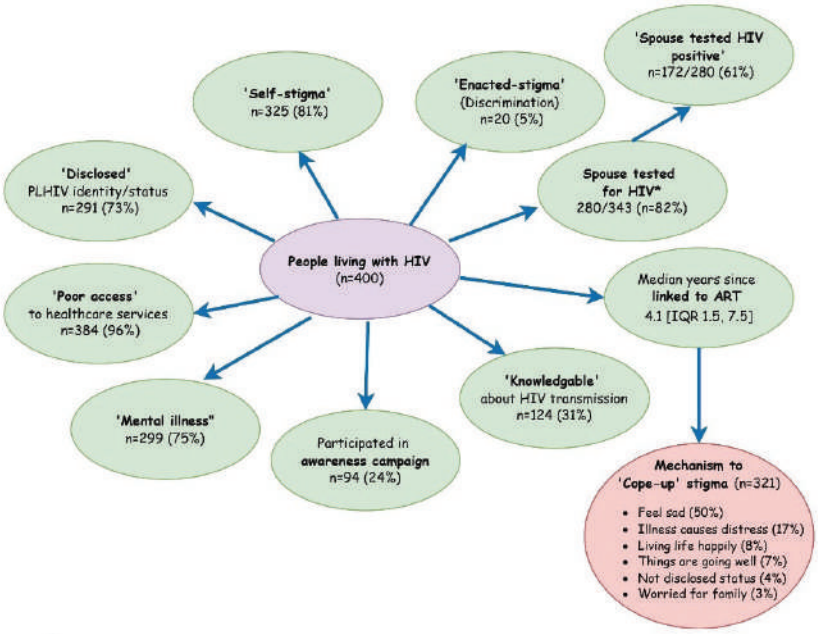
It is a cross sectional study using systematic random sampling. The selected ART centres were from Indore, Bhopal, Gwalior, and Jabalpur. Sample size comprised of 400 PLHIV and 400 KP (100 from each sub-group i.e. Female Sex Workers (FSW), Men who have Sex with Men (MSM), Transgender individuals (TG), and Injecting Drug Users (IDU)). Adults (≥18 years) living with HIV and KPs- FSWs, MSMs, IDUs and TGs were included. PLHIV were enrolled from ART centres, while KPs were recruited through NGOs. Standardised NACO stigma and discrimination tools were administered through structured interviews. Approval was sought and obtained from the Institutional Ethics and Review Committee of Birsa Munda Government Medical College Shahdol, M.P. (India). Trained investigators used the tools. ART counsellors explained the study, obtained informed consent, and ensured privacy.

Findings

PLHIV: The study findings show that participants had been availing ART services for at least a year, with a median registration duration of four years. The median age was 40 years, and most participants had contracted HIV between 30–35 years of age. About 60% were currently married, and nearly half were employed in the unorganised sector.

Educational attainment was low, with 51% having less than primary education. Awareness about HIV transmission was poor (24%), especially in Jabalpur (13%), where participants also reported the highest discrimination, primarily during TB testing and treatment. In contrast, no such issues were reported in Indore. Although only 5% faced direct discrimination (enacted stigma), a high burden of self-stigma persisted, influenced by poor healthcare access and mental health issues. Most participants disclosed their HIV status to family or friends, and three-fourths had biological children. Common comorbidities included hypertension, TB, and diabetes. Participants suggested increasing community awareness and preventive education to reduce stigma. Enacted

Figure 1 Schema on S&D among PLHIV



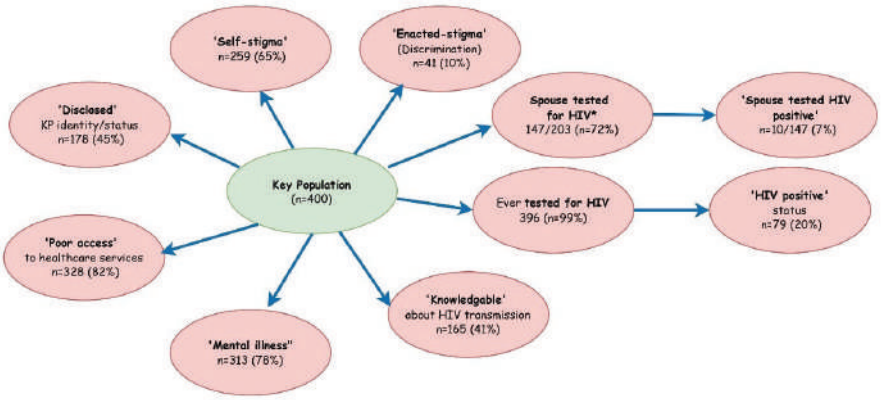
stigma was linked to higher education and rejection experiences, while self-stigma was associated with gender and mental illness.

KP: This study explored the experiences of KPs which included FSW, MSM, TGs and IDUs linked to Targeted Interventions (TI) in Madhya Pradesh. On average, KPs had been associated with TI-NGOs for around three years, with MSMs being linked the longest. Education levels varied, with MSMs being the most educated and FSWs, the least. TG individuals were generally more educated than FSWs.

Most FSWs (61%) were married and had many sexual partners, often with unknown HIV status. About 20% of all KPs tested HIV-positive, with MSMs most likely to test independently and IDUs, the least. TG and IDU groups showed lower knowledge of HIV transmission. Comorbidities such as hypertension, liver disorders, and diabetes was common.

Enacted stigma, mainly during TB services, was reported by only 10%, while two-thirds experienced self-stigma, linked to mental health issues. One-third of KPs reported rejection by friends or family, especially among TGs. Disclosure patterns varied widely. Though NGOs were accessible, many KPs still reported poor healthcare access. Despite stigma, half of the KPs felt respected and valued, using community support and NGOs to cope.

Figure 2 Schema on S&D among KPs



Conclusion

The study highlights significant disparities in access, awareness, and stigma experienced by both PLHIV and KPs in Madhya Pradesh. While most participants were linked to healthcare or TI-NGOs, gaps in HIV awareness, healthcare access, and psychosocial support persist especially among marginalised groups like FSWs, TGs, and IDUs. Enacted stigma was relatively low, but self-stigma remains a major concern, driven by mental health issues and inconsistent service delivery.

Recommendations

- Targeted IEC campaigns should address misconceptions about HIV transmission, especially in low-awareness areas.
- Mental health support should be integrated into HIV services to address high levels of self-stigma.
- Training healthcare workers, particularly in TB and STI settings, can reduce enacted stigma.
- Strengthening peer-support networks and promoting safe disclosure will improve psychosocial outcomes.
- Regular monitoring of stigma and healthcare access trends will help guide evidence-based, inclusive, and stigma-sensitive HIV interventions across Madhya Pradesh.

Acknowledgement

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Stigma and discrimination among People Living with HIV and Key Population in Maharashtra

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Introduction and rationale

Human immunodeficiency virus (HIV) is a major public health concern, and People Living with HIV (PLHIV) contribute to around 25.44 lakhs cases in India as per National AIDS Control Organisation (NACO) of which Maharashtra is the major contributor with 3.90 lakhs (1). Key Populations (KP) such as Female Sex Workers (FSW), Men who have Sex with Men (MSM), Transgender individuals (TG), and Injecting Drug Users (IDU) experience a high burden of HIV due to social exclusion, financial issues, and limited access to healthcare services (2).

HIV-related stigma and discrimination are still widespread, including social rejection, verbal abuse, isolation, and discriminatory behaviour in healthcare settings, leading many individuals to hide their HIV status (3). Stigma directly affects HIV prevention and care by reducing uptake of HIV testing, delaying treatment initiation, and lowering adherence to Antiretroviral Therapy (ART) due to fear of disclosure and mistreatment (4). Although national programmes and NGO initiatives exist for stigma-reduction (sensitisation, rights-based advocacy, community support), their effectiveness and coverage in Maharashtra remain areas requiring detailed evaluation (5).

Objectives

- To understand the level of S&D among PLHIV and KP
- Identify the determinants of S&D among PLHIV and KP

Methodology

A cross sectional study was conducted among a total of 400 PLHIV and 400 KP from ART centres and TI-NGO selected through stratified sampling. Due to unavailability of IDU because of the closure/discontinuation of selected TI-NGO from the sample area, IDU was not included/ surveyed. To overcome this, sample size was matched with other KP population and a total of 132 FSW, 136 MSM and 132 TG were enrolled in the study through systematic random sampling.

For PLHIV: Surveys were conducted either at the ARTCs or at the participants' homes, depending on their convenience and preference. Trained research personnel administered the surveys, ensuring that the environment remained comfortable and that participants felt at ease throughout the process.

For KP Participants: Targeted Intervention Non-Governmental Organisation (TI-NGO) counsellors were first point of contact to facilitate the study. Surveys were conducted at the convenient places that were safe and confidential. All efforts were made to maintain confidentiality and anonymity.

Data collection employed NACO developed stigma and discrimination questionnaire covering socio-demographics, HIV knowledge, disclosure experiences, healthcare access, mental health, and social support. Statistical methods including descriptive statistics, frequency and percentage of responses received from participants in the study were analysed using SPSS.

IRB approval was sought from the Institutional Ethics Committee, Shalinitai Meghe Hospital and Research Centre, Hingna Road Wanadongri (A Constituent unit of Datta Meghe Medical College) Vide Letter no SMHRC/AMM/2024/IEC/076. Consent was obtained from the study participants, and the data was collected from selected population.

Findings

The socio-demographic profile showed in Table 1 indicated that the mean age of PLHIV was 42.5±12.1 years. The gender wise distribution showcased that 53% of the participants were males. Economically, 77.5% earned below ₹10,000 per month, and 69% were unemployed or in informal work. Majority of the PLHIV (30.8%) had completed secondary education, and most of them (69%) were engaged as agricultural labour, domestic skilled worker or driver. It was also reported that among the recruited PLHIV, 61.3% were currently married.

Table 1 Demographic characteristics of PLHIV

Variables	PLHIV (n=400)
Age (Mean ± SD)	42.5 ± 12.1
Gender	
Male	212 (53.0%)
Female	188 (47.0%)
Transgender	0 (0%)
Education	
No Education	72 (18.0%)
Primary Education	84 (21.0%)
Secondary Education	123 (30.8%)
Higher Secondary	0 (0.0%)
Graduation & above	81 (20.2%)
Tertiary/Other	40 (10.0%)
Occupation	
Self-employed	59 (14.8%)
Non-Government Worker	35 (8.8%)
Student	22 (5.5%)
Government Worker	8 (2.0%)
Others (Agricultural labourer, Domestic Skilled Worker, Driver etc.)	276 (69.0%)
Marital Status	
Currently Married	245 (61.3%)
Divorced/Separated/Widow	102 (25.5%)
Never Married	53 (13.2%)

Findings show that about 99% PLHIV have disclosed HIV status to at least one person outside healthcare system. Only 19.7% avoid disclosure due to fear of judgement, indicating that internalised stigma persists among a small but notable sub-group.

None of the PLHIV reported denial of services at Antiretroviral Therapy (ART) Centres, Sexually Transmitted Infection–Designated STI/RTI Clinic (STI-DSRC), or Tuberculosis (TB) centres. This complete absence of enacted stigma within healthcare facilities demonstrates the positive impact of sustained sensitisation, anti-

discrimination training, and policy enforcement under the National AIDS Control Organisation (NACO) and Maharashtra State AIDS Control Society (MSACS). The data suggest that standard operating procedures and ethical codes of conduct are being effectively implemented at service-delivery points.

In Table 2, it was observed that around 96.5% never experienced discrimination in educational institutions while 99.7% believe PLHIV have equal opportunities in education. Furthermore, all participants believed that the education system contributes positively to stigma reduction, highlighting educational institutions as a critical platform for normalising HIV discourse and fostering inclusivity.

Table 2 Experience of stigma and discrimination and belief in equal educational opportunities among PLHIV

S.N.	Response	Experience of Educational Discrimination Based on HIV Status	Belief in Equal Educational Opportunities for PLHIV
1	No	386 (96.50)	399 (99.75)
2	Yes	14 (3.50)	1 (0.25)
	Total	**400 (100.00)**	**400 (100.00)**

Across the KPs, the mean age was recorded as 32.1±8.1 years. In terms of educational status, FSW showed the highest proportion of having no formal education at 12.7%, while MSM (14.5%) and TG (17.3%) had highest proportion of secondary level education. The details of socio-demographic characteristics for all KP categorise is provided in Table 3.

Table 3 Socio-demographic characteristics of KP (n=400)

Variables	FSW (n = 132)	MSM (n = 136)	TG (n = 132)
Age (Mean ± SD)	22.0±21.3	22.7±28.1	22.0±30.5
Gender			
Female	132 (100%)	0 (0%)	0 (0%)
Male	0 (0%)	136 (100%)	0 (0%)
Transgender	0 (0%)	0 (0%)	132 (100%)
Education			
Graduation & above	1 (0.25%)	49 (12.25%)	9 (2.25%)
Higher Secondary	3 (0.75%)	20 (5.00%)	19 (4.75%)
No Education	51 (12.75%)	3 (0.75%)	7 (1.75%)
Primary	39 (9.75%)	6 (1.50%)	26 (6.50%)
Secondary	38 (9.50%)	58 (14.50%)	69 (17.25%)
Tertiary	0 (0.00%)	0 (0.00%)	2 (0.50%)
Occupation			
Government Jobs	0 (0.00%)	0 (0.00%)	0 (0.00%)
Private Jobs	0 (0.00%)	69 (17.25%)	4 (1.00%)
Self-Employed	20 (5.00%)	30 (7.50%)	2 (0.50%)
Student	0 (0.00%)	14 (3.50%)	5 (1.25%)
Others (labour, maid, TG-mangati, badhai, etc.)	112 (28.00%)	23 (5.75%)	121 (30.25%)
Marital status			
Currently Married	71 (17.75%)	32 (8.00%)	0 (0.00%)
Divorced/Separated/Widow	33 (8.25%)	8 (2.00%)	0 (0.00%)
Never Married	28 (7.00%)	96 (24.00%)	132 (33.00%)

All KP respondents (100%) acknowledged the availability of adequate support services addressing their needs through Targeted Intervention Non-Governmental Organisations (TI-NGOs) and community-based networks. This indicates a strong presence of programme-supported structural interventions for these groups within the study region.

In terms of education-related stigma, 98.2% of KP participants reported never having observed discrimination based on their identity or HIV status in educational contexts reason being KP doesn't reveal the identity. About 100% of KP respondents opined those educational institutions play an important role in reducing societal stigma associated with HIV and marginalised identities.

A distinct pattern emerged in the psychological well-being of FSW participants, where 11.4% reported feelings of sadness or hopelessness related to their identity, 13.6% experienced anxiety or stress stemming from negative social reactions, and 1.5% expressed reduced self-esteem attributable to stigma. None of the other KP groups showcased feelings of sadness and hopelessness due to their identity. These findings suggest a disproportionate mental-health burden within the FSW sub-group, likely mediated by intersecting vulnerabilities such as socio-economic insecurity, gendered violence, and societal marginalisation.

Conclusion

Healthcare-based discrimination towards PLHIV and KP in Maharashtra was not observed, as participants did not report denial of services or mistreatment in healthcare settings. Despite absence of enacted stigma, a substantial proportion continue to experience internalised stigma, guilt, fear of judgement, and psycho-social distress. Mental health burden is disproportionately higher among FSWs, indicating intersectional disadvantage. These findings suggest the need to now shift beyond structural reforms towards psycho-social interventions, community counselling, peer-support ecosystems and targeted mental-health care to truly achieve stigma-free environment.

Recommendations

- The programme should prioritise psycho-social interventions alongside structural services
- Integration of routine mental health screening, counselling and peer-support groups at ART and TI-NGO level is recommended
- Strengthening life-skills and resilience training, especially for FSWs, is recommended
- Campaigns should shift toward continuous, community-embedded formats rather than stand-alone events
- Monitoring indicators must include internalised stigma and well-being outcomes, not only service uptake

Limitations

Although Injected Drug Users (IDU) were proposed to be included in the study sampling frame, this sub-group could not be taken in during the final data collection as no active TI-NGO was functioning IDU network at the time of data collection.

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A study on stigma and discrimination among People Living with HIV and Key Populations in Manipur

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Introduction and rationale

Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) remains a major global public health concern, with approximately 38 million People living with HIV worldwide, including 5.8 million in Asia (1). India ranks third globally, with an estimated 2.35 million People living with HIV (PLHIV) and a national prevalence rate of 0.22%, according to the National AIDS Control Organisation (NACO) (2). Despite progress in understanding the disease, HIV continues to pose both medical and social challenges (3).

Stigma and discrimination remain central barriers in the fight against HIV/AIDS. People living with HIV often face not only health issues but also severe social exclusion and human rights violations (4). Fear of transmission, ignorance, and moral judgment have fuelled stigma within families, communities, and healthcare settings (5). Discriminatory behaviours from healthcare providers—such as neglect, blame, verbal abuse, and even refusal of treatment—have been widely reported (6).

Stigma manifests at multiple levels, hindering voluntary testing, disclosure, and adherence to treatment (7). It also affects PLHIV's access to social support, employment, and healthcare (8). These factors exacerbate the epidemic by discouraging individuals from knowing their status or seeking timely care (9). In many settings, stigma and discrimination have been described as more damaging than the virus itself, due to their role in promoting silence, fear, and denial (10).

While HIV-related stigma has been well documented globally, there remains a significant gap in region-specific research within India, especially in states like Manipur (11). Stigma and discrimination vary by context and can profoundly impact the health and well-being of PLHIV (12). The World Health Organization (WHO) identifies fear of stigma as a key barrier to testing, treatment, and adherence (13). Given the lack of focused studies in Manipur, this study aims to explore the common manifestations of stigma and discrimination experienced by PLHIV receiving care at ART centres in the region, thereby informing strategies to improve care and reduce stigma.

Objectives

- To understand the level of stigma and discrimination among PLHIV and Key Population
- To identify the determinants of stigma and discrimination

Methodology

A cross-sectional study was conducted among 800 participants—400 PLHIV enrolled in ART centres (RIMS, Bishnupur, Chandel, and Ukhrul District Hospitals) and 400 individuals from Key Populations (100 Female Sex Workers, 100 Men who have Sex with Men, 100 Injecting Drug Users, and 100 Transgender persons) registered with TI-NGOs. Systematic random sampling technique was used in the study to recruit the study respondents.

Standardised stigma and discrimination tools shared by NACO were administered among PLHIV and KP through structured questionnaire. Quantitative data were analysed using SPSS version 25 for descriptive and chi-square analyses, while qualitative responses were analysed thematically.

Ethical clearance and informed consent were obtained prior to the commencement of data collection. IRB approval was sought from the Regional Institute of Medical Sciences, Imphal.

Findings

People Living with HIV

Among the 400 PLHIV surveyed, most were female (57%), married (68%), and aged 30–45 years. The majority belonged to low-income households (over 80%) and had limited formal education.

HIV knowledge and awareness

Nearly 94% of respondents correctly identified that HIV cannot be transmitted through casual contact, and 77% believed regular condom use prevents infection (Table 1).

Table 1 HIV knowledge and awareness among PLHIV (n=400)

Variables	Frequency	Percentage
Can HIV be transmitted through casual contact (e.g., hugging, shaking hands, having food together and living in the same household)?		
Yes	10	3
No	378	94
Don't know	12	3
Total	400	100
Can HIV be transmitted through mosquito bites?		
Yes	57	14
No	304	76
Don't know	39	10
Total	400	100
Is it possible to reduce the risk of HIV transmission through regular condom use?		
Yes	309	77
No	34	9
Don't know	57	14
Total	400	100
Is it possible to reduce the chances of getting HIV/AIDS through having just one uninfected faithful sexual partner?		
Yes	215	54
No	81	20
Don't	104	26
Total	400	100
Can a healthy-looking person have HIV/AIDS?		
Yes	325	81
No	54	14
Don't know	21	5
Total	400	100

Access to healthcare facilities

About 97% had been tested for HIV, and 88% reported respectful treatment from healthcare providers. However, 6% admitted to avoiding or delaying clinic visits due to fear of stigma.

Stigma and disclosure among PLHIV

While 80% disclosed their status to someone other than healthcare providers, 20% continued to conceal it out of fear of rejection (Table 2). About 35% experienced internalised stigma and self-blame, and 56% reported feelings of shame or embarrassment. A smaller segment (9%) faced employment discrimination, and 16% encountered social isolation or gossip within their communities.

Table 2 Experience of disclosure among PLHIV (n=400)

Variables	Frequency	Percentage
Have you disclosed your HIV status to anyone outside of healthcare providers?		
Yes	321	80
No	79	20
Total	**400**	**100**

Psycho-social impact and coping mechanisms

Over 65% reported feeling sad or hopeless due to their status, while 61% felt anxious about others' reactions. Yet 88% expressed feeling respected by at least some family members or peers. Coping mechanisms were diverse, with non-disclosure (28.7%) and emotional resilience (21.3%) being the most frequent, followed by family/social support (19.3%), faith-based coping (12%), and positive living through ART adherence (9.3%). A small proportion (6.7%) engaged in advocacy to transform stigma into empowerment, whereas 2.7% struggled with persistent internalised stigma. Overall, PLHIV in Manipur exhibit strong adaptive resilience but remain vulnerable to social judgment and psychological distress.

Thematic analysis revealed that PLHIV primarily cope with stigma through concealment and non-disclosure (28.7%), serving as protection from discrimination but often leading to emotional isolation. Many adopted emotional resilience and self-acceptance (21.3%), focusing on self-worth and positivity, while family and social support (19.3%) provided emotional stability and improved treatment adherence. Faith and spirituality (12%) also offered strength and comfort, especially among women and older participants. Together, these strategies reflect adaptive resilience, enabling PLHIV to maintain dignity and psychological well-being despite persistent societal stigma.

Findings from Key Populations

The 400 respondents from key populations were equally distributed across the four categories which were Female Sex Workers, Men who have Sex with Men, Injecting drug user and Transgender.

Female Sex Workers (FSW)

Most FSWs were economically disadvantaged and experienced dual stigma—linked to both occupation and HIV status. About 60% identified community awareness and education as vital for reducing stigma, while 10% emphasised the need for social acceptance and equal treatment. Counselling, family support, and economic empowerment were viewed as secondary yet important interventions. One-third reported concealing their occupation to avoid discrimination, and 30% adopted emotional endurance or avoidance as coping mechanisms.

Men who have Sex with Men (MSM)

Among MSM respondents, 50% advocated awareness campaigns as the key to stigma reduction. Despite relatively better education levels, 35% relied on silence and concealment as coping strategies. Roughly 15% reported a reduction in stigma in recent years, indicating gradual social progress. Nevertheless, family rejection and moral judgment remained significant, particularly among those open about their identity.

Injecting Drug Users (IDU)

For IDUs, stigma was intertwined with past drug use. Approximately 55% emphasised the importance of awareness and education in preventing both infection and prejudice. Nearly 26% reported no current stigma, often due to non-disclosure or successful rehabilitation. However, 40% used avoidance as their coping mechanism. A smaller proportion relied on NGO counselling or peer support for social re-integration.

Transgender Individuals (TG)

Transgender respondents faced the highest levels of social stigma but demonstrated active participation in awareness campaigns underscoring success of inclusive awareness initiatives within the TG community. Around 50% prioritised awareness and gender sensitisation, 15% advocated for policy inclusion and human rights protection, and 10% emphasised the importance of family counselling and social acceptance. Nearly 40% directly confronted stigma, using education and advocacy to assert their identity.

Table 3 HIV knowledge and awareness among all KP groups (n=400)

Variables	FSW	MSM	IDU	TG	Total
Can HIV be transmitted through casual contact (e.g., hugging, shaking hands, having food together and living in the same household)?					
Yes	5 (05)	3 (03)	12 (12)	2 (02)	22 (6)
No	93 (93)	93 (93)	85 (85)	98 (98)	369 (92)
Don't Know	2 (02)	4 (04)	3 (03)	0 (00)	9 (2)
Total	100 (100)	100 (100)	100 (100)	100 (100)	400 (100)
Can HIV be transmitted through Mosquito bites?					
Yes	38 (38)	20 (20)	24 (24)	20 (20)	102 (26)
No	56 (56)	76 (76)	71 (71)	75 (75)	278 (70)
Don't know	6 (06)	4 (04)	5 (05)	5 (05)	20 (5)
Total	100 (100)	100 (100)	100 (100)	100 (100)	400 (100)
Is it possible to reduce the risk of HIV transmission through regular condom use?					
Yes	92 (92)	96 (96)	94 (94)	93 (93)	375 (94)
No	7 (07)	3 (03)	3 (03)	7 (7)	20 (5)
Don't know	1 (01)	1 (01)	3 (03)	0 (00)	5 (1)
Total	100 (100)	100 (100)	100 (100)	100 (100)	400 (100)
Is it possible to reduce the chances of getting HIV/AIDS by having just one uninfected faithful sexual partner?					
Yes	71 (71)	71 (71)	86 (86)	77 (77)	305 (76)
No	18 (18)	22 (22)	8 (08)	18 (18)	66 (17)
Don't know	11 (11)	7 (07)	6 (06)	5 (05)	29 (7)
Total	100 (100)	100 (100)	100 (100)	100 (100)	400 (100)
Can a healthy-looking person have HIV/AIDS?					
Yes	82 (82)	84 (84)	87 (87)	81 (81)	334 (84)
No	15 (15)	15 (15)	10 (10)	16 (16)	56 (14)
Don't know	3 (03)	1 (01)	3 (03)	3 (03)	10 (2)
Total	100 (100)	100 (100)	100 (100)	100 (100)	400 (100)
Have you participated in HIV/AIDS awareness campaigns in the last 12 months?					
Yes	86 (86)	69 (69)	72 (72)	73 (73)	300 (75)
No	13 (13)	29 (29)	24 (24)	27 (27)	93 (23)
Don't know	1 (01)	2 (02)	4 (04)	0 (00)	7 (2)
Total	100 (100)	100 (100)	100 (100)	100 (100)	400 (100)
Do you feel that these campaigns have been effective in reducing stigma?					
Yes	83 (83)	84 (84)	74 (74)	91 (91)	332 (83)
No	10 (10)	15 (15)	14 (14)	7 (07)	46 (12)
Don't know	7 (07)	1 (01)	12 (12)	2 (02)	22 (6)
Total	100 (100)	100 (100)	100 (100)	100 (100)	400 (100)

*FSW – Female sex worker; MSM – Men having sex with men; IDU – Injecting drug users; TG – Transgender; Percentages are given in parentheses

Across key population groups, awareness and education (58%) remained the dominant theme for stigma reduction, followed by advocacy and rights protection (12%), counselling and psycho-social support (10%), peer engagement (9%), and economic empowerment (6%). Smaller segments highlighted the role of religious and faith-based inclusion (3%) and capacity building of healthcare providers (2%) in creating a stigma-free environment.

Conclusion

The study reveals that despite notable progress in reducing overt discrimination, subtle and internalised stigma against PLHIV and key populations in Manipur persists, undermining psychological well-being, treatment adherence, and social inclusion. While many individuals demonstrate resilience through concealment, faith, and advocacy, stigma remains deeply embedded in cultural and institutional contexts. Effective interventions must therefore extend beyond awareness to address structural inequalities, strengthen psycho-social support, and promote family and community acceptance. Empowerment through livelihood opportunities, gender sensitisation, and rights-based approaches is crucial. A sustained, multi-sectoral effort integrating healthcare, education, and policy reforms is essential to foster a stigma-free environment and enhance the quality of life for PLHIV and vulnerable communities in Manipur.

Recommendations

It is recommended that socio-economic support be strengthened for vulnerable groups, such as FSWs and IDUs, through skill-building and welfare linkages. Tailored outreach should target younger and unmarried individuals with limited access to STI and TB services. Continuous training for healthcare providers is needed to ensure respectful care. Integrating mental health support into HIV services is essential. Programmes must address age and marital differences, promote community inclusion, and rely on disaggregated data to guide responsive, stigma-reduction interventions.

Limitations

This cross-sectional study relied on self-reported data, which may be affected by social desirability bias. The qualitative component, though insightful, offered limited depth into the full range of stigma experiences.

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Stigma and discrimination among People Living with HIV and Key Populations in Meghalaya

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Introduction and rationale

HIV/AIDS remains a significant global health challenge, with stigma and discrimination being major concerns for those affected (1). The National AIDS and STD Control Programme Phase V (2021-2026) emphasises the need for a bottom-up, community-driven approach, strengthening targeted responses to eliminate HIV/AIDS interventions, advocacy, and addressing stigma and discrimination (2).

The India HIV Estimation 2017 report states that the national HIV prevalence among adults (ages 15-49) is estimated at 0.22%, with a slight difference between males (0.25%) and females (0.19%). The prevalence has steadily declined over the years, from 0.38% in 2001-2003 to 0.22% in 2017. In 2017, India had an estimated 87,580 new HIV infections, reflecting an 85% drop from 1995, with women making up 40% of these new infections. However, new infections are rising in the North-East states like Assam, Mizoram, and Meghalaya, while other regions have seen a more modest decline in new cases (3-5).

Stigma and discrimination continue to hinder HIV prevention, treatment, care, and support, contributing to increased vulnerability and reduced access to healthcare (6). Despite healthcare progress in Meghalaya, anecdotal evidence shows that PLHIVs and Key Populations (KPs) still face stigma and discrimination, affecting their overall well-being (6-9). The National AIDS Control Programme (NACP) prioritises addressing stigma in workplaces, healthcare, and education through awareness campaigns, skill-building, and promoting the HIV/AIDS (Prevention and Control) Act (10,11). People Living with HIV (PLHIV) and KPs, such as female sex workers, MSM, transgender individuals, and people who inject drugs, face compounded stigma due to their behaviours being perceived as socially unacceptable or illegal (2,8,9,11). Understanding these unique challenges is essential for creating effective interventions that foster a more inclusive and supportive environment.

Objectives

- To understand the level of experiences of stigma and discrimination faced by PLHIVs and KPs in various settings, including healthcare, workplace, families and communities
- To understand the determinants of stigma and discrimination

Methodology

A mixed method study design was used to understand the experience and impact on mental health due to stigma and discrimination among the PLHIVs and KPs. The PLHIVs and KPs were taken from five districts namely - East Khasi Hills, West Khasi Hills, Ri Bhoi, West Jaintia Hills, and West Garo Hills. Around 800 participants were recruited - 400 PLHIVs and 400 KPs. Focus Group Discussions were conducted in Khasi Hills District for PLHIV, FSW, MSM, IDU and TG, with a total of 5 key informants. In-depth Interviews were conducted in Khasi Hills for PLHIV, FSW, MSM, IDU and TG. In Jaintia Hills, In-depth Interview was conducted for PLHIV, with a total of 6 key informants.

Systematic random sampling was used for recruiting KP (except TG) for quantitative data collection. Since the active population of TG was only 28, so a take-all approach was selected for this KP category. Around 124 KPs was then selected from each of the 3 remaining KPs i.e., FSW, MSM and IDU. (400- 28 = 372 divided by 3 for the three remaining KPs which gives 124 samples target each for FSW, MSM and IDU). Selection of the respective KP respondents was done by simple random sampling from the active line list maintained by the concerned TI-NGOs in the respective district.

Selection of the PLHIV respondents was done by simple random sampling from the State master line list maintained at the selected ARTC. Only PLHIVs aged 18 years and above were included in the study. The statistical method used were SPSS, Jemovi and Microsoft excel sheet and thematic analysis (for qualitative).

Ethical approval was sought from Institutional Ethics Committee of Martin Luther Christian University, Meghalaya.

Findings

The demographic profile revealed that the majority of the participants were aged 21–40 years (75% among PLHIV, 50% among FSWs, 56% among MSM, 86% among IDUs, and 96% among TGs). Gender distribution corresponded to the population type, with females (100%) among FSWs, MSM and IDUs are predominantly males (100% and 83% respectively), transgender (100%) and a mix of males (34%) and females (66%) among PLHIV.

Across all healthcare settings (ARTC, ICTC, DSRC, TB testing/treatment facility), most PLHIV (97–100%), FSWs (85–92%) and IDUs (86–97%) reported never being denied services, delayed for care, or mistreated, indicating generally equitable access and respectful treatment. In contrast, MSM (46–60%) and TG (18–64%) reported lower levels of non-discriminatory service experiences, with 17–37% of MSM and 14–50% of TG respondents experiencing denial, delay, or indifference from healthcare providers.

Nearly all PLHIV (98–100%) affirmed that healthcare workers listened and showed no reluctance to touch, this figure declined among FSW (84–91%), MSM (53–57%), and TG (21–61%). Overall, the findings highlight that stigma and discrimination remain minimal among PLHIV, FSWs, and IDUs, but persist at higher levels among MSM and TG populations, particularly at ICTC and STI facilities, underscoring the need for targeted sensitisation of healthcare staff to ensure stigma-free service delivery.

The findings indicate that although overt discrimination in educational and workplace settings is relatively low (3–8%), gaps persist in policy awareness and institutional engagement, contributing to lingering misconceptions and stigma. Limited participation in awareness campaigns suggests a need for sustained educational interventions to strengthen HIV-related knowledge and reduce residual stigma in social and professional environments.

While the majority of PLHIV and Key Populations (KPs) reported no experience of self-stigma, a notable minority expressed negative self-perceptions linked to their HIV status. Among PLHIV, 26% frequently felt embarrassed about themselves and 27% felt they brought shame to their family, whereas 19% frequently avoided visiting people. Feelings of being treated unfairly were relatively uncommon (only 2% frequently). Similar trends were observed among KPs, for instance, 67% of transgender respondents and 20% of female sex workers (FSW) frequently avoided visiting others, while 46% of transgender persons and 19% of FSWs reported frequent embarrassment about themselves.

Emotional distress was also widespread, with 79% of PLHIV, 74% of FSWs, 92% of MSM, 90% of IDU, and 96% of TGs reporting feelings of sadness or hopelessness. Anxiety due to others' reactions was similarly high, affecting 72% of PLHIV and over 90% of MSM and TGs. Despite these challenges, a large proportion felt valued and respected (84% PLHIV, 93% MSM), and most reported strong family and peer support (89% PLHIV; 87–100% KPs). However, rejection from close family members remained significant among IDUs (51%) and TGs (39%), indicating persisting social stigma and emotional burden within certain sub-groups.

Qualitative findings

The qualitative analysis revealed persistent experiences of stigma, discrimination, and stereotyping among People Living with HIV (PLHIV) and Key Populations (KPs), despite improvements in awareness and healthcare access.

External stigma and social exclusion

Participants frequently reported being avoided, judged, and discriminated against by community members and even family members. Such experiences often led to social isolation and emotional distress.

"Some of the community people were discriminating and stigmatising me..." (IDU, In-depth interview, EKH)

"The people in my community avoided me, and try not to associate in anything with me. They judge me and look down on me…" (PLHIV-3, In-depth Interview, EKH)

"Yes, people in the community have discriminated me a lot due to my status." (PLHIV-4, FGD, EKH)

"I was discriminated by my family due to my unhealthy behaviours..." (PLHIV-7, FGD, EKH)

"…sometimes in the family, they are referring to the person as 'Hey you HIV come here." (PLHIV- 1, FGD, EKH)

However, a few participants noted no such negative experiences:

"Till date, I have not faced any stigma and discrimination…" (FSW, In-depth interview, EKH)

Self-stigma and internalised fears

A significant proportion of participants (76%) reported internalised stigma, characterised by shame, guilt, and fear of disclosure. This self-stigma often hindered treatment adherence and social participation,

"..self-stigma is that sometimes they don't want to come and take medication due to fear that people will know their status..." (PLHIV-1, FGD, EKH)

"I skipped taking medication before because I don't want to come out, I feel shy that people might talk bad about me…" (PLHIV-5, FGD, EKH)

"Even after 6-7 months after receiving my treatment, I still fear that people will know that I have HIV" (PLHIV-7, FGD, EKH)

Determinants of stigma and discrimination

Findings revealed that stigma was shaped by social, cultural, and psychological factors, including lack of awareness, religious beliefs, perceived immorality, and societal judgment.

"Lack of awareness, localities need to be sensitised." (PLHIV-1, FGD, EKH)

"Lack of education and knowledge…the rate of IDU and FSW is not the highest but people thought that this is the root cause." (PLHIV-4, FGD, EKH)

"Yes, I have faced discrimination because I'm a drug user." (PLHIV-1, FGD, EKH)

"My father cannot accept me as PLHIV because he was a pastor." (PLHIV-3 FGD, EKH)

"…they were left out by their family or community because of their immoral behaviour/ attitude..." (PLHIV-5 FGD, EKH)

Family support as a protective factor

Despite facing stigma, many participants reported strong emotional and moral support from their families, which fostered resilience and improved adherence to treatment.

"Yes, all depends on how we deal." (PLHIV-1, FGD, EKH)

"Yes, they all support, they create a positive environment and help us gain the confidence to be ourself again." (PLHIV-7, FGD, EKH)

"Yes for 18 years, they totally supported me." (PLHIV-3, FGD, EKH)

The qualitative findings reaffirm that both external and internalised stigma remain prevalent among PLHIV and KPs in Meghalaya. While community discrimination and self-stigma (76%) hinder service utilisation and mental well-being, family acceptance and awareness serve as strong protective factors. Addressing these issues through sustained sensitisation, community education, and psycho-social support is essential to reduce stigma and improve HIV care outcomes.

Conclusion

The study reveals that while overt stigma and discrimination in healthcare settings have substantially declined among People Living with HIV (PLHIV) and certain Key Populations (KPs) in Meghalaya, internalised stigma and community-level discrimination remain significant barriers to comprehensive HIV care. Self-stigma and social rejection, especially among transgender and IDU groups, continue to affect treatment adherence and mental well-being. However, strong family support emerged as a key protective factor. Continuous sensitisation, psycho-social support, and inclusive policies are essential to eliminate stigma and ensure equitable HIV care.

Recommendations

- Training and sensitisation programmes for healthcare providers focusing on reducing stigma, sensitivity, non-discrimination, and respectful treatment.
- Enhanced support services for vulnerable groups such as dedicated counselling, peer support networks, and advocacy programmes, to improve their healthcare experiences and outcomes.
- Establishing anonymous and accessible feedback mechanisms for patients to identify problem areas and make necessary improvements in service delivery and provider behaviour.
- Formulate and enforce policies or conduct a policy review to identify gaps and inconsistencies in the current guidelines and practices by formulating a proper plan with effective framework.
- Establish support services centres, which can provide counselling and legal assistance, for individuals who experience discrimination.
- Implement anonymous reporting mechanisms for patients to safely report instances of discrimination and delay in care and use this data to make necessary improvements in healthcare service delivery.
- Develop and implement comprehensive mental health support programmes specifically tailored for PLHIV and KPs. These programmes should include counselling, support groups, and stress management workshops.
- Using specific language of a certain region for ease and proper sensitisation of HIV among the community and providing awareness about HIV group-wise. Example, male, school students, teachers, etc. Thus, using proper materials for the appropriate age group.

Limitations

- Respondents who were drivers/truckers and migrant workers posed as a barrier to complete the data collection on time especially because they moved around for their occupation.

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Study on stigma and discrimination among People Living with HIV and Key Population in Mizoram

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Introduction and rationale

HIV-related stigma and discrimination remain major barriers to healthcare and social inclusion for People living with HIV (PLHIV) and Key Populations (KP) in Mizoram, such as sex workers, MSM, and people who inject drugs (PWID/IDU). These marginalised groups face stigma and discrimination that hinder HIV prevention, testing, treatment, and care (1, 2, 3). Mizoram's unique socio-cultural context calls for region-specific research to understand how stigma affects healthcare access and mental health outcomes (1).

Studies have shown that stigma can result in avoidance of treatment due to fear of disclosure, rejection, and anticipated discrimination (1, 2, 4). While actual experiences of enacted stigma may be fewer, the fear of being judged or ostracised leads many PLHIV to delay or avoid care (4, 5). The attitudes of the general public, students, and even healthcare providers have been shown to contribute to this stigma, often through fear of casual contact, blame, and support for isolation (2, 3, 4, 5).

However, some positive attitudes have also been recorded, particularly among nursing students, who expressed willingness to care for PLHIV when given proper training (6). Addressing these complex and layered forms of stigma is vital for improving health outcomes, reducing transmission, and ensuring the dignity and rights of PLHIV and KP in Mizoram (1, 6).

Objectives

- To understand the level of Stigma and Discrimination among PLHIV and KP
- To identify the determinants of Stigma and Discrimination among PLHIV & KP

Methodology

This cross-sectional study assessed HIV-related stigma and discrimination among People Living with HIV (PLHIV) and Key Populations (KP) in Mizoram, focusing on four high-prevalence districts: Aizawl, Lunglei, Champhai, and Kolasib. Participants were selected using systematic random sampling from ART centres (PLHIV) and TI-NGOs (KPs), ensuring broad demographic and geographic representation. The target sample was 700 (400 PLHIV, 300 KP); the final sample included 726 individuals (408 PLHIV, 318 KP), comprising Female Sex Workers (FSW), Men who have Sex with Men (MSM), and Injecting Drug Users (IDU). Transgender data were excluded due to a lack of registered individuals.

Table 1 Distribution of study population district-wise

Typology	Aizawl	Champhai	Kolasib	Lunglei	Total
FSW	52 (55.9%)	13 (14.0%)	21 (22.6%)	7 (7.5%)	93 (100.0%)
IDU	54 (49.5%)	13 (11.9%)	20 (18.3%)	22 (20.2%)	109 (100.0%)

MSM	98 (84.5%)	3 (2.6%)	4 (3.4%)	11 (9.5%)	116 (100.0%)
KP Total	204 (64.2%)	29 (9.1%)	45 (14.2%)	40 (12.6%)	318 (100.0%)
PLHIV	296 (72.5%)	41 (10.0%)	33 (8.1%)	38 (9.3%)	408 (100.0%)
Total	500 (68.9%)	70 (9.6%)	78 (10.7%)	78 (10.7%)	726 (100.0%)

Data collection used NACO's standardised Stigma and Discrimination research tool, facilitated by ART and TI counsellors for contextual reliability. The Tool included broad information areas on socio-demographic profile, knowledge and awareness, disclosure, enacted and self-stigma, impact on mental health, social support & networks and coping mechanism. Cross-tabulation analysis examined links between stigma and variables like gender, education, occupation, and district. Ethical protocols included informed consent, confidentiality, voluntary participation, and anonymised data storage. The study received institutional ethical clearance from Human Ethics Committee, Mizoram University to uphold human rights and research standards.

Findings

General and background information

The study included 318 participants from key populations (KPs) and 408 people living with HIV (PLHIV). The majority of KPs were between 18–30 years (40.3%) and 31–49 years (42.8%), while PLHIV were mostly aged 31–49 years (59.6%), with 27.2% in the 18–30 age group and 12.7% aged 50 and above.

Gender distribution shows that among KPs, 70.7% were male and 29.3% female, whereas among PLHIV, 61.5% were male and 38.5% female. Educationally, most KPs had completed secondary (44.3%) or higher secondary education (38.7%), with 9.7% being Graduates. Among PLHIV, 45.6% had secondary education, 19.1% higher secondary, and 10.8% Graduate or above, while 24.3% had only primary education.

Income distribution revealed that KPs were mostly in the ₹5,000–₹10,000 (29.9%) and above ₹10,000 (20.4%) range, though 28.9% reported no income. Among PLHIV, 39% earned above ₹10,000, 29.7% earned ₹5,000–₹10,000, and 20.1% had no income.

Marital status and sexual partnership

Among Female Sex Workers (FSW), the majority were married (55.9%, n=52), followed by never married (22.6%, n=21) and widowed/separated/divorced (21.5%, n=20). Among Injecting Drug Users (IDU), nearly half were married (49.5%, n=54), while never married participants accounted for 38.5% (n=42). Among Men who have Sex with Men (MSM), a vast majority were never married (86.0%, n=74), and only 10.5% (n=9) were married. For People Living with HIV (PLHIV), over half were married (52.6%, n=227), with widowed/separated/divorced accounting for 27.8% (n=120), and never married participants at 19.6% (n=85).

Knowledge and awareness

Nearly all respondents correctly recognised that HIV cannot be transmitted through casual contact (92.8%) or mosquito bites (86.9%), and that a healthy-looking person can still have HIV (93.9%). Most participants were also aware that consistent condom use (86.0%) and maintaining one faithful, uninfected partner (84.7%) reduce transmission risk. However, participation in HIV awareness campaigns during the past year was considerably lower among PLHIV (14.2%) compared to KPs (47.2%), suggesting limited ongoing engagement. Among those who participated, around two-thirds (63.2%) felt that such campaigns were effective in reducing stigma.

Disclosure and enacted stigma

Disclosure of HIV status was relatively limited among both groups, with less than half having shared their status outside healthcare settings — 40.6% of Key Populations (KPs) and 46.8% of People Living with HIV (PLHIV). Among KPs, disclosure was lowest among Female Sex Workers (28%), followed by Injecting Drug Users (42.2%) and Men who have Sex with Men (49.1%). Access to health services was generally higher among PLHIV than KPs. Most KPs (88.4%) received TI-NGO services, with MSM showing the highest access (90.5%), while 91.7% of PLHIV accessed ART/ICTC/PPTCT services compared to 60.4% of KPs. Additionally, around 37.7% KP and 19.6% of PLHIV visited DSRC clinics.

Self-stigma

More than half of all participants said they had never felt worthless (around 60% across groups), but feelings of shame were more common among PLHIV, with 35.3% feeling ashamed due to their HIV status compared to 23.3% among key populations (KPs). A sense of "paying for karma or sins" was reported by 24% of PLHIV and 26.4% of KPs, showing moral distress among both the groups. Notably, 89% of PLHIV and 59.4% of KPs said they had never been treated unfairly due to their status, though 28% of KPs and 8.8% of PLHIV still experienced blame a few times.

In education, discrimination was less reported but still present — 17.3% of KPs and 2.5% of reported that either they or someone they knew faced discrimination in education settings due to their KP/PLHIV status. While only 54.9% of PLHIV (75.2% of KPs) believed they had equal educational opportunities.

Employment discrimination appeared higher among KPs (36.5%) than PLHIV (7.6%), with most agreeing that stigma creates barriers to work (52.2% of KPs; 76.7% of PLHIV). Awareness of workplace anti-stigma policies remained low at 31.1%, and belief in equal career opportunities was lower among PLHIV (52%) compared to KPs (61.6%).

Access to healthcare and support services

Fear of disclosing one's identity affected healthcare utilisation, particularly among KPs. About one in five KPs (20.4%) reported skipping or stopping facility visits due to disclosure concerns, compared to fewer PLHIV. Avoidance was highest among Female Sex Workers (FSW) across all service types. For TI-NGO services, 43% of FSW skipped visits compared to 19.3% of IDU and 3.4% of MSM. Similarly, for ICTC/PPTCT services, 37.6% of FSW avoided visits, while avoidance was much lower among IDU (12.8%) and MSM (3.4%). Avoidance of DSRC/STI clinics and TB services was also more frequent among KPs (12.9%) than PLHIV (around 5%). Among KPs, FSW again showed the highest avoidance — 30.1% for STI clinics and 28% for TB services — while MSM showed the least.

Impact on mental health

Among key populations (FSW, IDU, and MSM), stigma had a strong emotional and psychological impact. Despite 66.4% feeling there were adequate support services, 66.7% experienced sadness or hopelessness, and 63.2% felt frequent anxiety or stress due to others' reactions to their identity. Self-esteem was notably affected, with 65.7% reporting reduced self-worth—especially high among FSW (74.2%) and IDU (77.1%). Only about half (53.5%) felt valued and respected, with FSW (45.2%) feeling the least respected.

Among PLHIV, mental health challenges were also significant though somewhat lower than in KPs. While 83.3% believed support services were available, 65.4% felt sadness or hopelessness, and 62.5% experienced anxiety linked to stigma. Self-esteem issues were reported by 51.2%, though a majority (62.7%) still felt valued and respected. Overall, while PLHIV showed better access to support.

Social support and networks

Findings indicate that 79.7% of all respondents reported having friends or family members who were aware of their KP/HIV identity or status and provided support, while 20.3% did not have such support.

Among Key Populations (KPs), 72.0% had supportive friends or family, whereas 28.0% lacked such support. Within the KPs, social support was highest among IDU (89.0%), followed by MSM (68.1%) and FSW (57.0%).

Among People Living with HIV (PLHIV), 85.8% reported having supportive friends or family members, while 14.2% did not.

Experience of rejection from close friends or family members

Overall, 16.8% of respondents reported having experienced rejection from close friends or family members due to their KP/HIV identity or status, while 83.2% had not. Among Key Populations (KPs), 23.9% reported experiencing rejection and 76.1% had not. Within the KPs, rejection was highest among IDU (34.9%), followed

by FSW (20.4%) and MSM (16.4%). Among People Living with HIV (PLHIV), 11.3% had experienced rejection, whereas 88.7% had not.

Coping mechanism: Despite these challenges, respondents demonstrated remarkable resilience. Coping strategies included faith, family support, peer networks, and treatment adherence. KP members particularly emphasised the value of community-based support groups in managing both stigma and mental health struggles.

In summary, while healthcare access and HIV knowledge have improved for both PLHIV and KP, self-stigma, mental health struggles, and social discrimination remain widespread. Addressing these issues is critical to ensuring dignity, inclusion, and holistic well-being for all affected populations.

Conclusion

The findings reveal a complex landscape in which People Living with HIV and Key Populations experience both progress and persistent challenges. While access to healthcare and HIV-related knowledge has improved, internalised stigma, mental health concerns, and social discrimination continue to affect their daily lives. Many still struggle with fear of disclosure and societal judgment, especially within education and employment contexts. Despite this, strong resilience is evident through personal, familial, and community coping mechanisms. The lived experiences captured here underscore the ongoing psycho-social burden and the need to foster an environment that leads to an understanding and empathy within broader social environments.

Recommendations

To reduce HIV-related stigma, the State AIDS Control Society (SACS) may consider implementing mental health and peer support programmes to address self-stigma with a more intensive focus, especially among PLHIV and IDUs. There is also a need to increase public awareness of DSRC, STI, and TB services through targeted campaigns. Community-based interventions are needed to reduce fear of disclosure and train non-health sectors in stigma sensitivity. Finally, sustenance and scaling up of stigma-free training led by TI-NGOs and ART providers, extending it to social workers, police, and local government for broader impact would be crucial.

Limitations

Transgender (TG) data was excluded due to the absence of registered TG individuals in Mizoram. Qualitative insights on disclosure experiences were limited as participants felt uncomfortable or unsure about sharing. The FSW sample fell short due to reluctance, especially in Lunglei. Additionally, cultural differences unique to Mizoram required careful consideration during interactions. Lastly, due to the absence of a scale manual, analysis was limited to descriptive statistics only.

Acknowledgement

We sincerely thank the ART centres and TI-NGOs across Aizawl, Lunglei, Champhai, and Kolasib for their endless support and cooperation, which were vital to this research. Their dedication ensured smooth data collection and meaningful community engagement. We also thank NACO for providing technical guidance and tools. Above all, we are grateful to the PLHIV and KP participants whose courage and openness made this study possible. Their voices are the heart of this research.

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Effect of stigma and discrimination among People Living with HIV and Key population in Mumbai, Maharashtra

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Introduction and rationale

Stigma is an undesirable attribute of an individual that reduces the status in the eyes of society (1). Discrimination is treating someone in a different and unjust, unfair, or prejudicial manner, often because they belong to, or are perceived to belong to, a particular group. Around 29% of men in NFHS-4 had discriminatory attitudes towards PLHIV and it increased marginally in NFHS-5 (30%). Similarly, 37% of women had discriminatory attitudes towards PLHIV, which increased by 5% points in NFHS-5 (2). The stigma and discrimination among PLHIVs and key population may decrease the impact of the prevention and care efforts towards them. The study is done to understand the determinants of stigma and discrimination, which will help in addressing them and thereby develop better pathways for an inclusive environment to augment HIV/AIDS care.

Objectives

- To assess the level of stigma and discrimination among PLHIVs and Key population
- To identify the determinants of stigma and discrimination among PLHIVs and Key population

Methodology

An observational cross-sectional study was conducted which included People living with HIV (PLHIV) registered with the ART Centre of Dr. R. N. Cooper Hospital and Key Population (KP) including four categories, namely, Men who have Sex with Men (MSM), Female Sex Workers (FSW), Transgenders (TG) and Injecting Drug Users (IDU) who may be HIV positive or negative or their status is unknown. In the study, 800 participants are enrolled, 400 each among PLHIV and KP (100 each among the 4 KP groups). For PLHIV – all the required sample was collected from those registered at one ART centre under MDACS. For key population, stratified cluster sampling was done. There are 15 NGOs working for FSWs, 4 for TGs, 3 for MSMs and 1 for IDU under TI division of MDACS. A single NGO was selected for IDU and TG, from which the required samples were collected using systematic random sampling. FSW were recruited from three NGOs, two NGOs were selected for MSMs and within the NGO-cluster, samples were taken till the required sample size was attained. A pre-developed questionnaire provided by NACO was used for data collection. Permission was taken from the Institutional Ethics Committee of HBT Medical College and Dr. R. N. Cooper Hospital. Informed Consent was taken from the participants. Patient Information Sheets were shared.

The categorical data is analysed using Chi square test and Fisher's Exact test. Unpaired t test/One way ANOVA is used to compare means between groups. Spearman's rho is used to calculate bivariate correlation. p values < 0.05 is taken as indicative of statistical significance.

Findings

The mean age of the PLHIV is 44.4 years (SD 11.8). Among the KP, TG is 35 years (10.9), IDU is 41 years (11.9), MSM is 31 years (8.8) and FSW is 34 years (8.4). Among PLHIV, the number of males (57.3%) were more than females (40.3%). Transgenders formed 2.5% of the participants. Among IDUs, only 7% were females, rest

were males. Among KP, better education levels were observed among MSMs (93% had above secondary level education) while low education level was seen among FSWs (56% had no formal education). Among the 800 study participants (PLHIV & KP), 628 participants (78.5%) reported experiencing overall stigma/discrimination in any form. The overall stigma/discrimination is higher among KPs than PLHIVs [(342 (85.5%) vs 286 (71.5%)], p < 0.0005. The most prevalent stigma is self-stigma which is found to be 71.4%. There is a significant difference in all categories of stigma/discrimination between the KP groups (p<0.0005). Transgenders are seen to be facing the highest stigma among the groups in all categories.

Figure 1 Levels of stigma/discrimination among PLHIV and KP

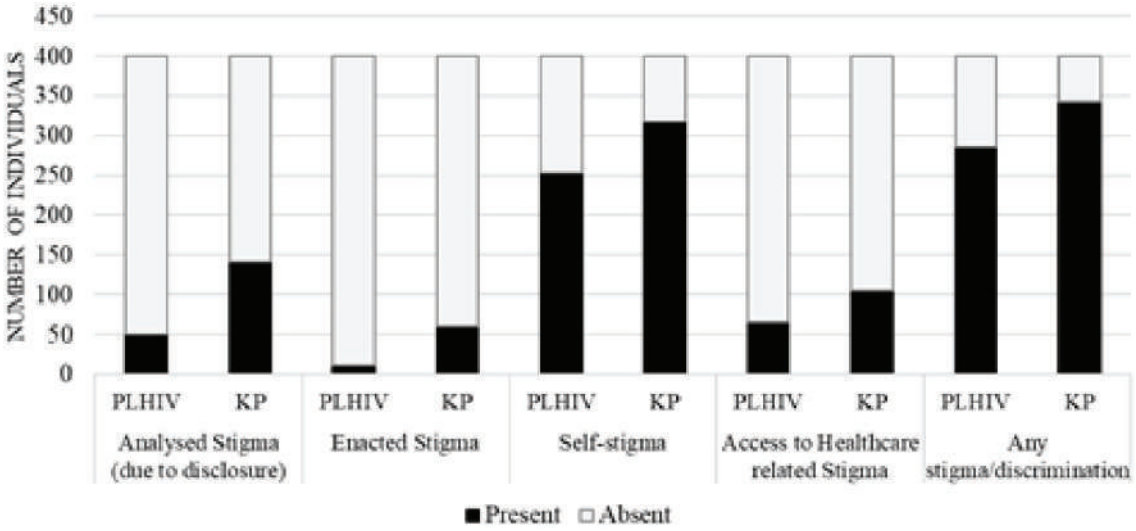
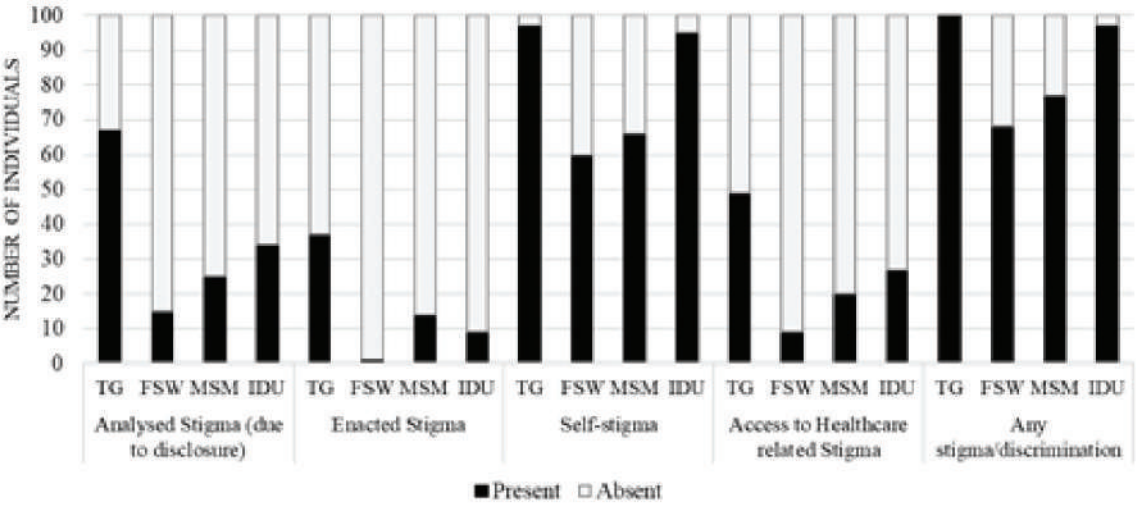


Figure 2 Levels of stigma/discrimination among KP



Among the PLHIV, a significant association is seen between presence of co-morbidities for the presence of stigma/discrimination. Among the KPs, it is seen that the KPs who showed stigma/discrimination were registered with TI- NGOs for a longer period 7.7 (6.7) years as compared to those who did not [5.5 (5.5) years]. There is a significant difference in all categories of stigma/discrimination between the KP groups (p<0.0005). Transgenders are seen to be facing the highest stigma among the groups in all categories.

Among the PLHIV, 6% (24) had skipped or stopped visiting ART centre due to concerns about others finding out their HIV identity while among KP, 2% (2) TGs, 6% (6) IDUs, 9% (9) MSMs and 3% (3) FSW had skipped or stopped visiting ICTC/PPTCT due to concerns about others finding out their KP identity. Similarly, 3.5% (14) PLHIVs, 4% (4) TGs, 5% (5) IDUs, 8% (8) MSMs and 3% (3) FSW had skipped or stopped visiting DSRC/STI Clinic

due to concerns related to others finding out about HIV/KP identity. For TB testing/or Treatment facility, 4% (16) PLHIVs, 7% (7) TGs, 4% (4) IDUs, 8% (8) MSMs and 3% (3) FSW had skipped or stopped visiting the facility due to concerns about others finding out their HIV/KP identity. Thirty-two (8%) PLHIVs reported skipping or stopping HIV medication due to concerns about others finding out about their HIV positive status. Two (2%) TGs, 7% (7) IDUs, 9% (9) MSMs and no FSW had skipped or stopped HIV Prevention services due to concerns about others finding out about their identity/status.

8% (32) PLHIV, 10 (10%) TGs, 12% (12) IDUs, 8% (8) MSMs and no FSW said that they delayed or avoided medical care because of fear of discrimination from healthcare providers. Only 2.8% (11) PLHIV had experienced or seen someone experience discrimination based on their HIV status at the time of admission in a healthcare setting. But, an alarmingly high number of TGs 41% (41) had experienced or witnessed discrimination in healthcare settings.

Only 54.8% (219) PLHIV felt that they had sufficient support services whereas 365 (91.3%) KPs felt that the support services available to them were adequate.

Conclusion

Upliftment of the study population on lines of three factors, namely, education levels, occupations that they are doing and acceptance in family that they come from, is required. This can be achieved by measures like increasing awareness by community and family sensitisation, legislative measures, training and establishing support networks.

Recommendations

The study mainly emphasises on the empowerment of the PLHIV and Key population as it is seen that there exists a high level of stigma and discrimination among these communities. The most prominent stigma is self-stigma. This underlines the need to strengthen the communities on these lines.

- There is an urgent need to set up Family and Community sensitisation drives to foster acceptance of the status of PLHIV and the key population.
- These individuals are an important national resource, and their talents should be tapped for national growth. This calls for policies to promote workplace inclusivity and anti-stigma/discrimination protection.
- Many who are affected by HIV or due to KP status do not have avenues to safeguard their positions in society. They need to be provided with alternative employment opportunities for their empowerment and enabling them to live dignified lives.
- A support network needs to be established especially aligned to the needs of these groups at national, state and local levels for
    - Skill building opportunities
    - Counselling and guidance
    - Alternative livelihood in crisis situation
- The mental health and welfare of these individuals need to be strengthened by way of establishment of wellness centres for caring of their emotional needs and empowering them.
- Awareness about the availability of legal aid services in case of harassment should be done.
- The healthcare system needs to be sensitised towards empathetic responding of the PLHIV and more importantly the KP community, and not to stereotype these individuals. This will help in promoting the health of this population and make the healthcare systems more PLHIV and KP friendly.
- Life-skill training which includes sexuality and gender-neutral thinking as a part of the curriculum is a very important part of education which does not feature in the curriculum of most educational boards. The inclusion of this as an important component of skill-based learning is required in a graded manner in schools and colleges.

Limitations

- The PLHIV were interviewed from one site while issues in other sites probably may have been missed.
- For KP interviewing, only those who were registered with TI NGOs could be included. Those who were non-registered like home based FSWs, call girls, bar girls, escorts, TGs, IDUs could not be interviewed due to standardised methodology.

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Stigma and discrimination among People Living with HIV and Key Population in Nagaland

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Introduction and rationale

The Human Immuno Deficiency Viruses/Aquired Immune Deficiency Syndrome (HIV/AIDS) pandemic has led to a range of reactions, including sympathy, silence, fear, anger, and violence (1). Stigma and discrimination (S&D) are significant factors in these reactions. Stigma is a derogatory term attributed to people as 'not quite human', while discrimination is actions that reduce their life chances (2). It exists within family circles, family activities, and among friends, acquaintances, and co-workers (3, 4, 5, 6). Healthcare providers too stigmatise patients, manifesting in direct and indirect ways such as negligence, blaming, breaches of confidentiality, criticism, delayed treatment, excessive precautions, gossip, neglect, and poor support (7).

The fear of contracting HIV through physical, social, and healthcare-related contacts and interactions are the main drivers of HIV stigma and discrimination. This adversely affects the psychological, physical health, and social life of People Living with HIV (PLHIV), leading to stress, anxiety, depression, and low quality of life. There are four level/domains of stigmatisation and discrimination: drivers, facilitators, manifestations, and intersecting stigma (8, 9).

The issue of stigmatisation and discrimination faced by PLHIV and Key Populations (KPs) is a significant global concern, and there is limited research on this issue in Nagaland. This study aims to increase understanding of PLHIV and Key Population stigma and discrimination, enabling healthcare professionals to adopt and implement stigma-reduction approaches and develop awareness programmes for the general public.

Objectives

- To assess the level of S&D among KP and PLHIV
- To explore the determinants of S&D among the PLHIV and KP in Nagaland

Methodology

The study focuses on three Nagaland districts - Kohima, Chumukedima, and Dimapur - using a non-probability sampling method. The districts represent all tribes and border Assam and Manipur.

Table 1 Population Size (2023-2024)

Categories	Kohima	Dimapur	Chumukedima	Total
PLHIV	2104	4367	1848	8319
IDU	2030	2010	2652	6692
FSW	217	954	866	2037
MSM	502	1352	0	1854
TG	0	151	0	151

Table 2 Achieved sample size

District	Categories	No. of sample	Percentage
Chumukedima	PLHIV	16	4.0%
	IDU	40	10.9%
	FSW	43	11.7%
	MSM	-	-
	TG	-	-
Dimapur	PLHIV	237	59.3%
	IDU	30	8.2%
	FSW	47	12.8%
	MSM	73	19.9%
	TG	67	18.3%
Kohima	PLHIV	147	36.8%
	IDU	30	8.2%
	FSW	10	2.7%
	MSM	27	7.4%
	TG	-	-

The study selected individuals from health centres across the three districts. The data was collected from the participants whoever came to the centres on Monday, Wednesday, and Friday from January to April 2024 and individuals who were willing to participate in the research. A mixed-method approach was adopted using systematic random sampling to select both PLHIV and KP. The study aimed to enhance the validity of the research by providing a deeper understanding of stigma and discrimination. S&D tool developed by National AIDS Control Organisation was administered through structured interviews. IRB for study was sought from Ethics Committee of St. Joseph's College.

Findings

The study shows that the majority of PLHIV individuals are aged 28-37 years. The KP also fall within this age range (46.3%), accounting for 12% of MSM, 12% of FSW, 9.8% of TG, and 12.5% of IDU. Around 37% of PLHIV individuals have secondary education, with primary education being the highest among the KP

The study reveals that 37% of PLHIV have attained secondary education, with primary education being the highest among the KPs. However, the majority of IDUs have attained higher secondary education. A significant percentage of PLHIV and KP have no formal education. The majority of PLHIV are unemployed or engaged in other activities, with a significant number being self-employed and private employees. The majority of PLHIV and KP are in the low-income bracket.

PLHIV or KP choose to keep their information confidential with 42.8% of male and 23% of female of being PLHIV, and 18.5% of MSM, 18% of FSW, 9.8% of TG, and 16.6% of IDU of being KP. Most of those who disclosed the information to their family members often receive love, support and care. However, few feel ashamed or embarrassed, furthermore, few feel that they bring shame on their family.

The majority of PLHIV (83.5%) and KP (70.8%) have family members or trusted friends supporting them in healthcare. However, 16.3% PLHIV and 29.2% KP i.e. MSM (6%), FSW (7.6%), TG (5.2%) and IDU (10.4%) do not let their family or know about their KP identity. The interconnected nature of healthcare centres and personal relationships with family members contribute to their comfort, confidence, and commitment to their overall well-being and care.

The majority of PLHIV (63.8%) and KP (89.9%) i.e. MSM (25.3%), FSW (24.5%), TG (14.7%) and IDU (25.3%) consistently use healthcare services and support facilities without fear of disclosure or discrimination. Most PLHIV (68.5%) and KP individuals (63.5%) including MSM (16.9%), FSW (18%), TG (13.1%), and IDU (15.5%)

reported not experiencing major stigma or discrimination, indicating encouraging progress toward greater inclusivity. However, a small number have encountered discrimination, highlighting ongoing challenges.

Many of the PLHIV experience sadness (67.5%), anxiety and stress (71.3%) due to their identity. Whereas KP (54.8%) i.e., MSM (15%), FSW (23.2%), TG (7.1%) and IDU (9.5%) experience sadness (67.5%). PLHIV experience anxiety and stress (71.3%) and KP (56.7%) i.e., MSM (15.3%), FSW (23.2%), TG (8.4%) and IDU (9.8%) due to their identity. The stigma and discrimination associated with their PLHIV (71.3%) and KPs identity affects self-esteem, leading to self-isolation and increase vulnerability to their mental health issues. Despite the odds and challenges, many still receive acceptance and respect. This highlights the resilience and diverse experiences within the PLHIV and Key Population community.

The PLHIV and KPs have found normalcy through coping mechanisms like maintaining a positive mindset and encouraging others. To reduce stigma, they advocate for spreading awareness, educating the public, using social media, and implementing workplace policies. Healthcare professionals' support and meaningful connections empower them to lead fulfilling lives.

Conclusion

The study found that PLHIV and KPs often experience significant disturbance of emotional and mental well-being due to stigma and discrimination. Most experienced sadness, hopelessness, and a decrease in self-esteem. The fear of facing discrimination and judgment lead to self-imposed isolation, overwhelming feelings of shame, and reluctance to access necessary medical care and support services.

Despite these challenges, the majority of individuals have not encountered significant levels of stigma and discrimination, suggesting a shift towards increased acceptance and inclusivity. Many individuals persist in encountering acceptance and respect, reflecting a positive spirit that serves as a source of encouragement and inspiration for others. Healthcare facilities play a vital role in providing specialised care and personal relationships contribute to the overall ease and confidence of seeking help.

Recommendations

- Launch mass awareness campaigns using social media, education, and religious institutions to prevent decriminalising of PLHIV and KPs
- Enforce anti-discrimination laws and policies and establish helpline for reporting stigmatising behaviours
- Compulsory counselling sessions to help clients manage stress and mental health issues
- Train healthcare providers to provide stigma-free, non-discriminatory services for PLHIV and KPs
- Workplace policies should support non-discriminatory hiring practices and vocational training to enhance economic independence
- Introduce HIV/AIDS topics in school curricula to instil empathy and reduce stigma and discrimination
- Encourage responsible media reporting to focus on human rights and dignity for PLHIV and KPs

Limitations

For the TG community, the data collection process presented unique challenges. Members of this demographic proved hesitant to engage or disclose personal information, thereby impeding the successful attainment of the targeted sample size. Consequently, despite efforts to encourage cooperation and transparency, the proposed number of samples among TG could not be attained.

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Stigma and discrimination among People Living with HIV/AIDS and Key Population in Puducherry

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Introduction and rationale

HIV/AIDS continues to be a significant public health challenge due to its impacts on personal and public health globally (1). Despite the transition of fatal disease to a manageable chronic condition with the help of antiretroviral therapy (2), the disease is accompanied by persistent stigma and discrimination among People living with HIV and Key populations, such as Female Sex workers (FSW), Men who have Sex with Men (MSM), and Transgender individuals (TG). This social stigma, along with discrimination rooted in social psychological negative prejudice, often remains as a barrier to access public health facilities, thereby impacting prevention, treatment (3-5). This also affects the overall quality of life by affecting mental health, employment opportunities in society.

In the context of India, where the social structure is deeply rooted in cultural and religious beliefs that are surrounded by moral judgements linking HIV as a product of immoral behaviour (6, 7). The Government of India has undertaken various efforts through its National AIDS Control Programme (NACP) to implement legal provisions for protection against stigma and discrimination. The Union Territory (UT) of Pondicherry has a higher prevalence of HIV compared with the national average (8). The Key Population, including FSW, MSM and TG face various challenges in addressing the stigma.

Objectives

- To study the socio-demographic profile of People living with HIV/AIDS
- To identify the key factors contributing to stigma and discrimination against individuals with HIV/AIDS
- To examine the impact of stigma and discrimination on their mental health and overall well-being
- To investigate the role of education and awareness campaigns in reducing stigma and discrimination related to HIV/AIDS

Methodology

The current study employed a quantitative methodology, utilising a cross-sectional descriptive design to collect data from People living with HIV/AIDS and the Key Population. The total sample size selected from the study population is 660 respondents. The universe of the study is the People living with HIV/AIDS (PLHIV) and Key Population (KP) in Pondicherry, Yanam, and Karaikal of the Union Territory of Puducherry. The data was collected by using a Simple random sampling method.

Data was collected using a semi-structured questionnaire. The questionnaire comprised information areas on socio-demographic profile, stigma, discrimination, educational opportunities, employment, social interaction, and mental health questions to understand the stigma and discrimination faced by Persons living with HIV/AIDS and Key Populations. The Principal Investigator, Co-Principal Investigator, and the enumerator thoroughly verified the questionnaire.

The collected data were entered into Microsoft Excel, after which data cleaning was carried out by identifying errors, inconsistencies, and duplicates. The data was then prepared for analysis. The data analysis was conducted using Jamovi version 2.3.21, and descriptive statistics were employed.

Ethical clearance was obtained from Institutional Review Board of Pondicherry University.

Findings

The socio-demographic profile shows PLHIV (n=400) are older (mean age 45.8 years), with a majority being female (52.8%), having secondary education, and a low average monthly income (₹12,718). In contrast, KP groups are younger (mean age, 27-35 years), with varied educational levels and higher incomes, particularly among MSM (₹19,507). Table 1 provides the socio-demographic profile of study participants.

Table 1 Socio-demographic profile of study participants

Socio-Demographic Characteristics	PLHIV (n=400)	TG (n=60)	MSM (n=100)	FSW (n=100)
Mean Age (years)	45.8	28.3	27.9	35
Gender Distribution	52.8% Female, 47.0% Male, 0.2% TG	100% Transgender	100% Male	100% Female
Education: Graduation & above	70 (17.5%)	12 (20.0%)	28 (28.0%)	4 (4.0%)
Mean Monthly Income (₹)	12,718	15,000	19,507	15,825

PLHIV largely exist within family structures, with nearly half (n=197, 49.3%) currently married and the vast majority (n=379, 94.7%) reporting no sexual partners outside the marital relationship. In contrast, having non-spousal partners is common among Key Populations, especially for Female Sex Workers (n=98, 98%) and Transgender persons (n=45, 75%). The prevalent lack of knowledge about their partners' HIV status, which was most frequently reported as "Unknown". This highlights that Key Populations are more vulnerable due to sexual networks, where the HIV status of partners is also unknown. The common cold, diabetes are the most reported health issues among the PLHIV.

The study highlights the widespread presence of multi-dimensional stigma and discrimination affecting PLHIV (n=400) and Key Populations (n=260) in Pondicherry UT, and points to mental health challenges along with significant differences in social and healthcare support. The findings show high levels of testing and engagement with HIV healthcare services, yet stigma remains prevalent in areas such as family, workplace, and educational settings.

HIV knowledge is mixed, while 83-92% of Key Populations know condoms prevent transmission, misconceptions persist, 27% of MSM and 21% of FSW believe mosquitoes can spread HIV. Critically, only 58% of PLHIV and 42% of TG know a healthy-looking person can have HIV. Awareness campaign participation is high (73-85% for KPs), yet perceived effectiveness is low, with just 21% of PLHIV believing they reduce stigma.

Disclosure experiences vary drastically between groups. Transgender (n=55, 91.7%) individuals show higher disclosure rates and predominantly positive outcomes, with 66.7% reporting acceptance and pride. In contrast, MSM and FSW, with 77% and 84% not disclosing, primarily due to fear. When they do disclose, experiences are mixed, often involving rejection, abuse, or isolation.

Table 2 Status of disclosure of HIV among study participants

	PLHIV (n=400)	TG (n=60)	MSM (n=100)	FSW (n=100)
Disclosed identity/status outside healthcare	152 (38.0%)	55 (91.7%)	23 (23.0%)	16 (16.0%)
Did not disclose (due to fear/ judgment)	248 (62.0%)	5(8.3%)	77 (77.0%)	84 (84.0%)

The healthcare discrimination is rare (99-100% reported no service denial), and internalised self-stigma is severe. Over half (52.9%, n=211) of PLHIV and 46.7% of Transgender individuals often avoid social visits due to shame. A significant 29.5% of PLHIV frequently felt their status was a punishment for past sins. This shows the burden of stigma has shifted from external discrimination to internal psychological struggle. However, avoidance due to fear of stigma remains a concern, particularly among MSM, with 18-20% skipping clinic visits or medications due to stigma. Around 93.5% (n=374) of PLHIV reported having supportive families, TG and FSW reported facing severe isolation, 70% (n=42) of TG experienced family rejection, and 66% of FSW lacked supportive friends/family. Most PLHIV (97%, n=388) and over half of FSW (58%, n=58) feel community support services are insufficient, highlighting a critical gap in psycho-social care & support.

Mental health impacts are severe and widespread across all groups, PLHIV and FSW being the most affected. Over 82% of PLHIV, 85% of TG, and 88% of FSW reported feelings of sadness and hopelessness, while anxiety levels were similarly high at 80.5% among PLHIV and 87% among FSW. Self-esteem was significantly impacted, particularly for FSW (72%) and PLHIV (65.8%). Over 71.5% of PLHIV did not feel valued or respected by society. Although most Transgender individuals (83.3%) felt valued, they simultaneously reported high levels of sadness (85%), indicating their psychological burden.

Table 3 Mental health impacts among study population

Mental Health Indicator	PLHIV (n=400)	TG (n=60)	MSM (n=100)	FSW (n=100)
Experience sadness/hopelessness	330 (82.5%)	51 (85.0%)	53 (53.0%)	88 (88.0%)
Feel anxious/stressed about reactions	322 (80.5%)	39 (65.0%)	52 (52.0%)	87 (87.0%)
Reports affected self-esteem	263 (65.8%)	36 (60.0%)	52 (52.0%)	72 (72.0%)
Feel valued and respected	114 (28.5%)	50 (83.3%)	70 (70.0%)	74 (74.0%)

People Living with HIV (PLHIV) report strong familial backing, with 93.5% (n=374) receiving support from friends or family who know their status. Conversely, Transgender (TG) individuals among the KP individuals face severe social exclusion, with 70% (n=42) experiencing rejection from friends and relations, and only 66.7% (n=40) having any supportive network. This suggests the limited support system for KP compared to PLHIV. Transgender individuals and MSM primarily cope by talking to friends and seeking supportive communities, whereas Female Sex Workers frequently resort to concealment, feeling guilt, and emotional suppression, with many reporting “nil” coping strategies

Conclusion

The study highlights that the HIV prevention and care in Pondicherry cannot be cut down to biomedical interventions. The rates of testing, the use of services, and access to ART are promising, but there is still stigma in social, workplace, and family settings, which impede the quality of life for key populations. A multi-pronged approach to include biomedical, behavioural, as well as structural interventions should therefore be adopted by PACS.

Limitation

The target TG samples were not attained, as the data was collected only from 60 TG against the targeted 100 TG.

Recommendations

The study recommends a multi-pronged approach to combat stigma and improve well-being. Key actions include enhancing community sensitisation through door-to-door campaigns and peer educators to dispel transmission myths. Integrating mental health support into HIV programmes is crucial, given the high prevalence of psychological distress. Strengthening peer-support networks and implementing anti-discrimination policies in workplaces and educational institutions are vital structural reforms.

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HIV/AIDS-related stigma and discrimination among People Living with HIV/AIDS and Key Populations in Punjab: A cross-sectional study

AUTHORS

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Introduction and rationale

Stigma is a complicated social process during which people are stigmatised and devalued due to their perceived negative attributes which deviate from the societal norms (1). Stigma and discrimination create significant barriers that affect People Living with HIV (PLHIV) not only as individuals, but also collectively as social support networks. Stigmatised conditions create fear, exclusion, and social isolation that permeate community networks (2). Discrimination takes the shape of actions and behaviours which adversely affect PLHIV's daily lives. Some examples of discrimination include denying PLHIV community services, workplace discrimination, social exclusion, verbal abuse, and threats of violence (3).

As a result of decades of comprehensive Human Immunodeficiency Viruses (HIV) prevention and awareness campaigns, we still see stigmatising attitudes and discrimination continues to occur across the globe in various geographical and cultural contexts. Key Populations [KP] (men who have sex with men (MSM), female sex workers (FSW), transgender (TG), and injectable drug users (IDU) experience compounded stigma associated with their HIV status and their social identities as these populations intersect with layers of marginalisation. These already marginalised populations live with additional stigma that affects their access to health care, social services, and community acceptance.

Persistent HIV-related stigma and discrimination continues to fatally undermine public health efforts and reduce people's willingness to access testing, treatment, and support services, thereby perpetuating transmission of HIV and putting PLHIV and KP's at increased risk of poor health outcomes (4). We must understand how stigma manifests and what drives it across diverse cultural contexts and populations in order to conduct targeted, evidence-based interventions that can help eliminate discrimination while enhancing access to HIV services.

While India has achieved considerable progress as a result of the National AIDS Control Programme (NACP), stigma continues to undermine the prevention and treatment of HIV and continuing to harm PLHIV and key populations. The intersection of individual's HIV status with a variety of social vulnerabilities risks discrimination, including caste identity, gender identity and socio-economic status, creating multiple layers of discrimination that move beyond their experience of healthcare and likely into other key areas of their lives, such as the workplace, institutional education, and community. Punjab's demographics, and specific characteristics of the HIV epidemic, we need region and population specific evidence to capture how stigma manifests across the diverse populations of this context.

Objectives

- To understand the level of stigma and discrimination among PLHIV and KPs (FSW, IDU, MSM and TG)
- To identify the determinants of stigma and discrimination among PLHIV and KPs

Methodology

A cross sectional study using systematic random sampling was carried out across four districts Amritsar, Bathinda, Jalandhar, and Ludhiana of Punjab. The study population comprised PLHIV receiving antiretroviral therapy (n=400) from ART centres; and Key Populations (n=400) presently registered and availing facilities from Targeted Intervention (TI) NGOs registered with NACO and Punjab SACS. The latter comprised equal (n=100) of each of the four sub-populations (FSW, MSM, IDU, and TG). Eligible individuals were between 18 years and 60 years. For all KP's, participants were HIV negative with documented access to TI-NGO. All participants provided written informed consent before entering the study.

A standardised questionnaire developed by the National AIDS Control Organisation served as the primary data collection instrument. The entire tool included a variety of information domains such as demographic information, health status information, service access information, knowledge assessment, and psycho-social issues. The research protocol was approved by the Institute Ethics Committee, Panjab University, Chandigarh. Punjab State AIDS Control Society also provided permission for data collection from the ARTC and TI-NGO. Stringent confidentiality procedures were undertaken, including anonymous data handling and storage. The study was completed in 4 months, including recruitment, data construction, and analysis.

Findings

People Living with HIV

The study examined 400 PLHIV, predominantly male (65.2%) with an average age of 40 years. Educational limitations were marked, 86% of who had secondary or lower and 4.5% with higher education. Marginalised groups included 79% of participants, primarily Scheduled Castes (54%). Self-employment was the most common occupational pattern (34.8%), followed by private sector employment (24%). Married participants (58%) have 54.2% spousal HIV sero-positivity. Extra-marital relationships were present in 13.2% of instances, and partner HIV status was largely unknown (71.7%). The participants reported accurately by identifying that HIV transmission could not occur by casual touch (69.5%) and by mosquito (61.2%), while 73% incorrectly reported by saying that condoms would not protect them from HIV transmission.

About 49.2% regularly hide their status, 43.2% shunned social visits, and 68.3% blamed their condition on karma. Fears of disclosure motivated 12.5% to stay away from facilities and 10.5% to miss drugs even with high ART Centre participation (87.5%). About 49.2% frequently avoid sharing their HIV status because of fear, and 39.5% frequently feel that HIV is a punishment for their past. Around 44.5% frequently report that a person's status in school determines how they will be treated; 20.7% frequently find difficulty in getting jobs.

Key Populations

The study's demographic findings showed that the majority of KP participants were young adults between 18-30 years, with MSM having a higher mean age (47 years). Secondary level of education was the most prevalent (35.5%) and most common occupation was self-employed (47.3%). Sexual partners apart from spouse was reported by 77% KP, and of them, 90% did not know the HIV status of the sexual partner. The study also identified large knowledge gaps regarding HIV transmission (65.5%) with participants indicating that they believed a person's HIV status could be assessed from their appearance incorrectly.

There were also participants who had misconceptions about transmission through casual contact (20.8 %) and mosquito bites (24.2%) were also highlighted. A notable finding was the distinction of the healthcare stigma in TG (no other group had their identity recorded on medical records (4.7%) and reported the highest levels of experiences of mistreatment (2.7%), denying of services (1.5%) and longer waiting times (2.7%) compared to other KPs. Most participants demonstrate self-protective behaviours on a regular basis, with 63.5% often avoid revealing their KP identity or status. Participants also mentioned external and systemic barriers that may be substantial; 53% indicated they feel KPs often face barriers in finding employment, and 63.3% said KPs do not have equal opportunity as other students for educational opportunities. The data also provided evidence of internalised stigma, as 41.5% of participants regularly felt ashamed and 40.2% felt blamed for their status, both suggesting widespread psychological impacts.

Conclusion

The study has presented data showing how HIV/AIDS stigma and discrimination remains a barrier to health and social wellbeing for PLHIV and KP in Punjab. The intersection of HIV status and other marginalised identities creates compounded vulnerabilities that must be addressed through targeted multi-level interventions. This effort will require coordinated action throughout health care systems, education, workplace environments, and communities at large to create an environment in which PLHIV and key populations can access care, support and opportunities without facing any form of stigma. The findings suggest there is an urgent need for action on organising stigma-reduction response that address both individual-level internalised stigma and structural-level discrimination with an ultimate aim of ending AIDS-related stigma and discrimination.

Recommendations

- An integrated response to HIV stigma is necessary. For PLHIV, to incorporate mental health care into the ART site to address self-stigma, ramping up prevention education and encouraging condom use, and strengthening the existing support networks.
- For key populations, interventions must be tailored and culturally sensitive.
- Interventions must focus on improved awareness of their partners' status and high-risk behaviours, improving access to healthcare by addressing stigma, providing mental health care for transgender persons, and promoting socio-economic stability through vocational training and/or formalised support networks.

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Stigma and discrimination among Key Populations and People Living with HIV in Rajasthan

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Introduction and rationale

Stigma and discrimination (S&D) are significant challenges for key populations (KPs) (1), while stigma in People Living with HIV (PLHIV) often leads to reduced health-seeking behaviour and exclusion from education, particularly for transgender (TG) individuals (2). Additionally, KPs also experience treatment refusal, and delays due to their HIV status (3). Depression is prevalent, affecting 61% of PLHIV (4) and 11% to 29% among high-risk KPs (5). While literature exists on stigma and discrimination in western countries (6, 7, 8), studies in India indicate a prevalence ranging from 26% to 60% (1, 9, 10). There is limited research exploring the stigma and discrimination experienced by KPs and PLHIVs in Rajasthan. The study aims to understand the issues around stigma and discrimination among PLHIV and KP in Rajasthan.

Objectives

- To explore the levels of Stigma & Discrimination among KP and PLHIV
- To assess the determinants of Stigma & Discrimination among KP and PLHIV

Methodology

A mixed method study was conducted among KPs enrolled through Targeted Intervention Non-Governmental Organisation (TI-NGOs) and PLHIV at ART centres in Jaipur and Sri Ganganagar. Participants aged 18 and above were included, while those who did not provide written informed consent were excluded. A line list of PLHIV was obtained from ART centres, and High-Risk Groups (HRGs) were identified through TI-NGOs using systematic random sampling, leading to a final sample of 400 each from PLHIV and HRG (Response Rates: 91.3% and 98.3%, respectively). The sample comprised of 800 participants, including 100 each from Female Sex Workers (FSW), Men who have Sex with Men (MSM), Injecting Drug Users (IDU), and Hijra/Transgender (H/TG) groups. Standardised NACO stigma and discrimination tools were administered through structured interviews. Depression levels were measured using the Patient Health Questionnaire (PHQ-9) scale. Additionally, 40 in-depth interviews (IDIs) were conducted for qualitative insights, alongside 8 key informant interviews with healthcare workers. The study received approval from the Institutional Ethics Committee of All India Institute of Medical Sciences Jodhpur. Data were analysed using SPSS v.23, employing descriptive statistics, chi-square tests, and thematic analysis for qualitative data.

Findings

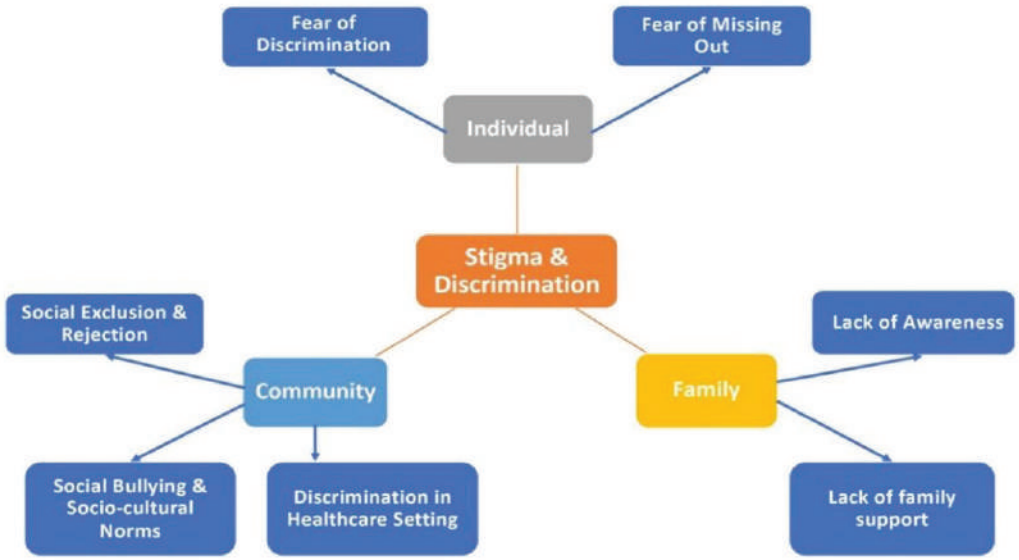
Among the KPs, almost half were in the age group of 30-40 years with 56% reportedly having no education and 59% having an average monthly income of 10,000-20,000 rupees. Among the PLHIV, almost half of the participants were above the age of 35 years with 61% being males, 38.5% females and 0.5% were TGs. Only 9.5% of the PLHIV reported as having no education. However, the average monthly income was reported as <10,000 rupees by 53.5% of the participants.

Stigma was widespread, with 69% of KPs reporting feelings of shame about their identity, while over 30% of PLHIV expressed concern or distress over how others might react to their HIV status. Discrimination followed closely, as approximately 10% of KPs reported being denied healthcare services due to their identity, and 7.3% experienced mistreatment during HIV testing and treatment. Among PLHIV, 8.5% faced healthcare denial. Depression rates were significant, with 26.5% of KPs, particularly MSM and IDUs, and 14% of PLHIV experiencing depression. Factors such as self-stigma, discrimination, and lack of social support contributed to higher depression rates, which were further aggravated by service denial and public disclosure of HIV status.

The In-depth interviews illustrate the profound impact of stigma and discrimination on marginalised communities. Participants shared how stigma infiltrates family, community, and healthcare settings, intensifying emotional distress. (Figure 1)

At the family level, PLHIV often faces rejection due to misconceptions about HIV transmission. Without counselling, families may ostracise PLHIV, increasing feelings of shame and isolation. At the community level, PLHIV, like other key populations, endure social exclusion. One participant noted *"People look at us with dirty eyes"*, reinforcing the fear of public disclosure of HIV status. MSM and FSWs, in particular are frequently judged and marginalised. At the individual level, PLHIV fears discrimination in healthcare settings with widespread fear of being denied care or mistreated due to their HIV status.

Figure 1 Schematic diagram of stigma and discrimination among Key Population and PLHIV



Conclusion

With 10% of KPs and 8.5% of PLHIV reported being denied healthcare services due to their identity, the study highlights notable progress in reducing discrimination against KPs and PLHIV. Increased awareness and access to comprehensive healthcare services have positively impacted the treatment landscape, ensuring that more individuals benefit from essential prevention and care packages. However, the persistence of high depression rates among MSM and IDUs underscores the critical need for targeted mental health interventions. Encouragingly, there is growing recognition of the mental health needs of these populations (14% in PLHIV, 26.5% in KP), reflecting an evolving understanding of the psychological impact of stigma and discrimination. As we move forward, it is essential to build on these positive developments while addressing the ongoing challenges faced by KPs and PLHIV.

Recommendations

- To enhance mental health services by integrating them more comprehensively into HIV care, specifically targeting the high rates of depression observed among vulnerable groups

- Strengthening community engagement through the expansion of peer-led support programmes will help reduce self-stigma and enhance social support networks for KPs and PLHIV. Additionally, ongoing sensitisation and training for healthcare providers are crucial to ensuring that all individuals receive equitable and respectful care, thus sustaining the positive trends in reducing discrimination and improving health outcomes.
- To leverage technology and innovative approaches to deliver mental healthre sources, which can significantly contribute to holistic care for these populations.

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Stigma and discrimination among People Living with HIV and Key Populations in Sikkim

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Introduction and rationale

Human Immunodeficiency Virus (HIV) infection and Acquired Immune Deficiency Syndrome (AIDS) is a major public health concern (1). The global estimates of 2023 reported that there were 39.8 million people living with HIV (PLHIV) across the world (2). The National AIDS Control Organisation, estimates 3.8 million PLHIV in India (3). In 2022, India reported an estimate death of 39.6 thousand annual AIDS-related death (4). It has been around four decades into the AIDS epidemic, but still, the questions of stigma loom large over a substantial population affected worldwide. The studies show the significant link with the HIV related stigma and quality of life. The HIV-related stigma not only impacts the PLHIV but also affects populations at higher risk of HIV exposure, Female sex workers (FSW), Injecting drug users (IDU), Man having sex with man (MSM) and Transgenders (3). HIV related stigma refers to the negative beliefs, feelings and attitudes towards PLHIV (5). Stigma and discrimination (S&D) can lead to mental health issues, confidence and hopelessness for people living with HIV and other high-risk group (4). Several research studies show the common types of HIV-related Stigma are Enacted Stigma, self-stigma or internalised Stigma, and institutional stigma. As stigma and discrimination affects person accessibility to healthcare treatment services, impacts on mental health, decision making in disclosure (6-8).

Understanding the extent and nature of HIV-related stigma in Sikkim is essential to design context-specific interventions that improve health-care access, strengthen psycho-social support, and enhance the overall quality of life for people living with HIV and other key populations.

Objectives

- To understand the level of stigma and discrimination among PLHIV and Key Population in Sikkim
- To identify the determinants of Stigma and Discrimination among PLHIV and Key population in Sikkim

Methodology

This study adopted a descriptive cross-sectional design to assess stigma and discrimination among people living with HIV (PLHIV) and key populations (KP) in Sikkim. A universal sampling technique was used to recruit study participants (PLHIV and KP) from the ART centre and TI NGO across various districts of Sikkim selected using stratified random sampling. The study was conducted among PLHIV on ART at the ART centre at STNM Hospital, Gangtok, and at targeted intervention (TI) NGOs working with female sex workers (FSW), injecting drug users (IDU), transgender persons (TG) and men who have sex with men (MSM). Eligible participants were PLHIV on active ART and KP above 18 years registered with TI-NGOs under SSACS, who provided informed consent. Data was collected from a total of 326 PLHIV and 235 KP (100 FSW, 100 IDU, 15 TG and 20 MSM).

Data were collected using two structured questionnaires developed by NACO, one each for PLHIV and KP. Quantitative data were analysed using SPSS, applying descriptive statistics and chi-square tests for associations, while qualitative responses were coded into meaningful themes and examined descriptively.

Ethical approval was secured from the SRM University Ethics Committee. Participation was voluntary, with written informed consent, confidentiality ensured, and interviews conducted in safe, private settings to protect respondents' privacy and comfort.

Findings

The socio-demographic characteristics of PLHIV and KP showed mixed pattern of young male, elderly female in the various categories of the study participants from People living with HIV and various key population. The maximum number of PLHIV participants in Active ART in are aged 36-45 (36.9%), while majority of IDU participants are among age-group of 18-35 (72.2%) indicating younger population, while large proportion of FSW belonged to age-group 26-45 (73.5%). Additionally, 60% of MSM were from age group 18-25 while 73.3% of TG were in age-group 26-35. A significant number (61.4%) of PLHIV belong to male category while only 38.6% of PLHIV participants are female, indicating a notable presence of women in this group.

The disclosure pattern reveals that a substantial majority (89.1%) of participants have disclosed their HIV status or identity with few close people while 10.9% had never disclosed. Disclosure was more common among IDU, MSM, and TG, largely due to their behaviour and visibility, whereas most FSWs preferred to keep their identity confidential, sharing it only with close community peers or TI staff.

Self-stigma emerged as the most prevalent form of stigma. Many participants expressed fears that their identity would bring shame to their families, reported feelings of embarrassment, and avoided disclosure due to anticipated judgement and discrimination (Table 1).

Table 1 Self stigma among PLHIV and KP

Self-Stigma	PLHIV (N=339)	IDU (N=104)	FSW (N=102)	MSM (N=20)	TG (N=15)
	n (%)	n (%)	n (%)	n (%)	n (%)
Thought brought shame or embarrassment to family because of HIV/KP identity					
Never	141 (41.6)	11 (10.6)	36 (35.3)	10 (50.0)	2 (13.3)
Once or twice	78 (23.0)	10 (9.6)	15 (14.7)	4 (20.0)	2 (13.3)
A few times	71 (20.7)	42 (40.4)	28 (27.5)	4 (20.0)	4 (26.67)
Frequently	50 (14.7)	41 (39.4)	23 (22.5)	2 (10)	7 (46.67)
Total	339 (100.0)	104 (100.0)	102 (100.0)	20 (100.0)	15 (100.0)
Felt shame or embarrassment because of HIV/KP identity					
Never	105 (31.0)	14 (13.5)	36 (35.3)	9 (45.0)	5 (33.3)
Once or twice	75 (22.1)	20 (19.2)	24 (23.5)	5 (25.0)	1 (6.67)
A few times	97 (28.6)	55 (52.9)	32 (31.4)	5 (25.0)	5 (33.3)
Frequently	62 (18.3)	15 (14.4)	10 (9.8)	1 (5.0)	4 (26.67)
Total	339 (100.0)	104 (100.0)	102 (100.0)	20 (100.0)	15 (100.0)

The findings also highlight the impact of identity on mental health (Table 2). Study participants reported that they felt stressed because of how other may react to their identity either as PLHIV or KP identity. Feelings of sadness and hopelessness were expressed by 49.3% of PLHIV, 72.1% of IDU, 43.1% of FSWs, 75% of MSM, and 80% of TG. Notably, younger PLHIV and those with higher education were more likely to report stress.

Table 2 Impact of HIV and KP status on mental health

Impact of HIV/KP Status on Mental Health	PLHIV (N=339)	IDU (N=104)	FSW (N=102)	MSM (N=20)	TG (N=15)
	n (%)	n (%)	n (%)	n (%)	n (%)
Felt hopeless or sadness because of identity as PLHIV/KP					
Yes	167 (49.3)	75 (72.1)	44 (43.1)	15 (75.0)	12 (80.0)
No	172 (50.7)	29 (27.9)	58 (56.9)	5 (25.0)	3 (20.0)
Total	339 (100.0)	104 (100.0)	102 (100.0)	20 (100.0)	15 (100.0)
Felt stressed because of how others may react to the PLHIV or KP identity					
Yes	203 (59.9)	45 (43.3)	63 (61.8)	11 (60.0)	12 (80.0)
No	136 (40.1)	59 (56.7)	39 (38.2)	8 (40.0)	3 (20.0)
Total	339 (100.0)	104 (100.0)	102 (100.0)	20 (100.0)	15 (100.0)
My self-esteem affected due to the identity					
Yes	107 (31.6)	44 (43.1)	16 (15.7)	12 (60.0)	8 (53.3)
No	232 (68.4)	58 (56.9)	86 (84.3)	8 (40.0)	7 (46.7)
Total	339 (100.0)	104 (100.0)	102 (100.0)	20 (100.0)	15 (100.0)
Felt valued or respected despite the condition					
Yes	304 (89.7)	55 (54.9)	85 (83.3)	14 (70.0)	10 (66.7)
No	35 (10.3)	49 (47.1)	17 (16.7)	6 (30.0)	5 (33.3)
Total	339 (100.0)	104 (100.0)	102 (100.0)	20 (100.0)	15 (100.0)

The study reflected the good engagement of the participants in accessing the facilities like the ICTC, STI Clinic, ART centres and TI-NGOs. A significant number of participants reported that they have not faced any kind of stigma and discrimination in these facilities while 8.8% of PLHIV reported discrimination during admission in healthcare settings, highlighting the existence of enacted stigma or institutional stigma in facilities not linked to the NACP.

One of the Male PLHIV shared his experience regarding stigma faced at a medical facility due to his HIV status "When we were diagnosed, my wife was admitted to hospital due to miscarriage. To my dismay, the sisters and nurses were hesitant to approach us, no one came forward and we were neglected. It was deeply upsetting to witness such behaviour. Even when the trained medical professionals treat us this way, what can we possibly expect from rest of society?" [Male PLHIV, age 35] "जब हामीलाई थाहा भयो, मेरी श्रीमतीगर्भपतनको कारण अस्पतालमा भर्ना भइन्। मलाई अचम्म लाग्यो, दिदी-बहिनीहरु र नर्सहरु हामीकहाँ आउन हिचकिचाउँथे, कोही पनि अगाडि आएनन् र हामीलाई बेवास्ता गरियो। यस्तो व्यवहार देखेर म असाध्यै दुःखी भएँ । तालिम प्राप्त चिकित्सकले हामीलाई यस्तो व्यवहार गर्दा पनि हामी बाँकी समाजबाट के आशा गर्न सक्छौं?" [पुरुष पीएलएचआईवी, उम्र 31]

PLHIV with higher education were more likely to report embarrassment (p=0.024), and younger participants two words with are more likely to feel embarrassed (p=0.014) (Table 3).

Table 3 Association of educational status and age with embarrassment because of HIV status among PLHIV

Educational status	Never	Once or twice	A few times	Frequently	Total	χ^2 & P-value
	n (%)	n (%)	n (%)	n (%)	n (%)	
No Education	6 (31.6)	2 (10.5)	4 (21.1)	7 (36.8)	19 (100)	23.465 (0.024)
Primary	6 (9.5)	4 (6.3)	20 (31.7)	33 (52.4)	63 (100)	
Secondary	12 (8.3)	9 (6.3)	20 (13.9)	103 (17.5)	144 (100)	
Higher Secondary	7 (13.2)	3 (5.7)	7 (13.2)	36 (67.9)	53 (100)	

Graduation and above	5 (8.3)	3 (5.0)	12 (20.0)	40 (66.7)	60 (100)	
Total	36 (10.6)	21 (6.2)	63 (18.6)	219 (64.6)	339 (100)	
Age	**Never**	**Once or twice**	**A few times**	**Frequently**	**Total**	**χ^2 & P-value**
18-25	8 (22.9)	8 (22.9)	12 (34.3)	7 (20)	35 (100)	29.453 (0.014)
36-45	35 (28)	24 (19.2)	40 (32)	26 (20.8)	125 (100)	
46-55	19 (36.2)	10 (19.2)	13 (25)	10 (19.2)	52 (100)	
56-65	9 (42.9)	9 (42.9)	1 (4.8)	2 (9.5)	21 (100)	
66 and above	8 (88.9%)	0	1 (11.1%)	0	9 (100)	
Total	105 (31)	75 (22.1)	97 (28.6)	62 (18.3)	339 (100)	

Many of the respondents suggested the several roles that the educational institute can play in reducing stigma and discrimination about HIV, like regular awareness campaigns, general subjects on health education which covers topics like HIV, sexual health, gender, mental health etc. and involvement of students in some HIV awareness clubs in educational institute that will allow active participation of the students in awareness, education, discussion through different activities in educational institutes.

Conclusion

In conclusion, the study reveals that while PLHIV and Key Populations (FSW, IDU, MSM, TG) in Sikkim have shown increased engagement with healthcare services and reduced experiences of discrimination in ART, ICTC, and STI clinics, however challenges persist in other health settings. Self-stigma remains high, particularly among PLHIV who fear disclosing their status, while IDU, MSM and TG continue to face social and employment discrimination. The majority of respondents belong to younger, economically vulnerable groups, reflecting the need for youth-sensitive approaches. Despite improved awareness, misconceptions about HIV transmission still exist. Mental health concerns remain prevalent, especially among those lacking strong support systems. Overall, the findings underscore both progress in service accessibility and psycho-social barriers that impact the well-being of these populations.

Recommendation

- Comprehensive anti-stigma training for healthcare workers at all healthcare facilities may be conducted regularly
- Mental health support and counselling to be included as a primary focus area for Targeted Interventions
- Strengthening drop-in centers into an activity hub
- Active collaboration and engagement of local stakeholders may be explored
- Advocacy with education department for broader inclusion of HIV/AIDS in the curriculum

Acknowledgement

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Understanding stigma and discrimination among People Living with HIV and Key Populations in Tamil Nadu: A Cross-Sectional Study

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Introduction and rationale

Human Immunodeficiency Virus (HIV) related stigma and discrimination (S&D) significantly impact the health and well-being of people living with or at risk of HIV, especially Key Populations (KPs) which includes S&D affecting the HIV response, based on sex, gender identity, sexual orientation, drug use, sex work, and HIV status (1). Stigma includes avoidance, gossip, verbal abuse, and rejection. Discrimination extends to denial of services, employment, education, physical abuse, arrest, and restrictive laws or policies. People may face intersectional stigma due to race, disability, or socioeconomic status. These factors increase HIV risk, violence, and marginalisation, while reducing access to rights such as education, health care, work, and justice (2, 3). The People Living with HIV (PLHIV) Stigma Index, a community-led initiative found job loss in over 50% of cases in several countries. LGBTQI workers report higher workplace violence and discrimination. Currently, 47 countries maintain HIV-related travel restrictions (4). In many countries, over 50% of people hold discriminatory attitudes, while 40% of PLHIV report coercive medical procedures, and up to 21% were denied health care. Discrimination hinders adolescents in managing medication at school and deters transgender women from seeking health care (4). This study aims to assess stigma and discrimination among PLHIV and high-risk groups.

Objectives

- To understand the level of stigma and discrimination among PLHIV and KPs in Tamil Nadu
- To identify the determinants of stigma and discrimination among PLHIV and KPs in Tamil Nadu

Methodology

A cross-sectional study was conducted with a total sample size of 800 participants- 400 PLHIV and 400 individuals from KPs (who were HIV-negative), which included 100 female sex workers (FSWs), 100 men who have sex with men (MSM), 100 injecting drug users (IDUs), and 100 transgender individuals (TGs).

PLHIVs registered in ART centres and KPs registered in the registered TI projects with above 18 years of age were included under this study. Those who did not give consent were excluded from this study. The study used systematic random sampling. PLHIV participants were recruited from ART centres in Villupuram, Salem, Vellore, and Madurai. FSW groups were covered through TI-NGOs in Villupuram, Salem, Chennai, and Madurai. MSM participants were included from TI-NGOs in Villupuram, Salem, Chennai, and Madurai. IDU groups were sampled from Salem, Chennai, and Tuticorin. TG participants were drawn from TI-NGOs in Villupuram, Salem, Chennai, and Madurai.

Ethical considerations & respondent protection measures were taken. IRB approval was sought from the Stanley Medical College. Informed consent was obtained from all the study participants. The collected data was kept confidential with end-to-end encryption. No personal identifiers were collected. The collected information was used only for the purpose of research and policy making as per the data protection guidelines of NACO.

Findings

People Living with HIV

Study among 400 PLHIV in Tamil Nadu revealed high healthcare access but persistent emotional stigma. Most participants were aged 31-35 years (46.5%) and were female (59%). Around 38% completed secondary education, 81% earned ≤ Rupees10,000/- monthly, and 61% were married. Nearly all (95.3%) accessed ART services and 67.8% used TB testing facilities in the past year. However, 3-4% reported denial or delay of services due to HIV status across the various health care facilities. Fear of disclosure led 2.8% to skip ART visits and 5.8% to avoid TB clinics, though 98.3% maintained treatment adherence.

Knowledge of HIV was high, 98% knew casual contact doesn't spread HIV and 79.5% recognised condom use prevents transmission. Yet, internalised stigma remained high, where 41.5% felt sadness or hopelessness, 32.5% reported anxiety, and 22.5% had reduced self-esteem due to stigma. Chi-square analysis showed significant association between gender and perceptions of stigma in education/employment, and between education and internalised/employment-related stigma ($p<0.05$).

Key Population

Female Sex Workers

The study among 100 FSWs across Tamil Nadu revealed that 31-35 years age group (48%) was the most prominent group, and had completed secondary education (41%). Most (83%) were married and economically disadvantaged, with 64% earning below Rupees 6,000/- per month. Service utilisation was high, with 82% visiting TI-NGOs or Designated STI/RTI Clinic within the last 3 months. About 75% ever tested for HIV, all testing negative. Knowledge about HIV was strong where all recognised condom use as preventive measure and 96% said that mosquito does not cause HIV transmission but misconceptions persisted regarding casual contact causing HIV transmission (8%).

Stigma in healthcare was minimal, where 89% said they were never denied services and 93% were never made to wait for longer duration and none reported any mistreatment. However, internalised stigma and emotional distress were substantial with 67% feeling sadness or hopelessness, 79% experienced anxiety, and 27% believed they were paying for sins. Disclosure fear persisted with 63% avoiding revealing their identity. Employment challenges were reported by 37%, around 33% faced workplace discrimination and only 2% were aware of workplace anti-stigma policies.

Chi-square analysis showed significant associations between age and fear of disclosure ($p=0.049$), education and fatalistic beliefs ($p=0.024$), and education with perceived employment stigma ($p=0.014$).

Men having Sex with Men

Most of the MSM were 21-30 years (48%), educated to secondary or higher (60%), and unmarried (76%). MSM showed strong service engagement but substantial psychosocial stigma. Health-seeking was robust where 79% accessed TI-NGOs/ICTC/DSRC/TB services in the past year and 92% had ever tested for HIV and most reported that they were negative. Knowledge was mixed where 93% correctly denied that HIV transmits through casual contact, but 87% incorrectly believed that mosquito bites transmits HIV. About 66% participated in awareness campaigns and 79% disclosed KP identity outside healthcare. Chi-square analysis found age to be associated with support for workplace anti-stigma policies ($p=0.008$).

Transgenders

Among 100 TGs, most were aged 26-35 years (48%), and largely engaged in 'other occupations' (93%). Service linkage was strong: 97% had accessed TI-NGOs, ICTC/PPTCT and DSRC/STI clinics in the past year; 98% had ever been tested for HIV, however 41% reported unknown status. However, health-system disclosure and facility discrimination were notable where 21% reported a healthcare worker had made their KP identity publicly known in medical records, and denial of services 'once or twice' was reported by 17-18% across ICTC/DSRC/TB centres.

Internalised stigma and psychosocial burden were found high with 100% reported feelings of sadness/ hopelessness and frequent anxiety/stress about others reactions; 90% said their self-esteem was affected, and 76% reported rejection from close relations. Education-related and employment related stigma was found pervasive with 57% experienced discrimination during educational admission, 91% reported employment discrimination, and 93% believed KPs lack equal career advancement; only 24% were aware of workplace anti-stigma policies.

Injecting Drug Users

Among the IDUs, 36% belonged to the age group, 41-50 years and 33% belonged to 31-40 years. Education varied with 36% having secondary schooling and 21% attained graduation or above. Service engagement was found to be excellent where 99% used TI-NGO services, 97% used ICTC/DSRC, and 77% accessed TB services. HIV testing uptake was universal (100%). Stigma and service disruptions were found moderate with occasional denial at admission (once or twice/a few times) in 16–19% across ICTC/DSRC/TB facilities.

Conclusion

The study revealed that stigma and discrimination persist among PLHIV and KPs such as FSW, MSM, TG, and IDU across Tamil Nadu. Internalised stigma including feelings of shame, guilt, and fear of disclosure remained high, particularly among TG and FSW groups. Although denial of healthcare services was rare, subtle discrimination such as delayed attention, avoidance of contact, and impersonal treatment continued in some facilities. Employment and educational stigma were also notable, with many respondents reported restricted job opportunities and discriminatory attitudes in academic institutions. PLHIV reported lower levels of healthcare discrimination but continued to face social exclusion and psychological distress. Despite improvements in service accessibility and awareness through ART Centres and TI-NGOs, structural stigma and societal misconceptions continue to impede full inclusion and dignity for these populations. The findings highlight the need for strengthened workplace and educational anti-stigma policies, community sensitisation, and psycho-social support to foster acceptance and equality for PLHIV and KPs. Overall, while progress in healthcare inclusivity is evident, addressing deep-rooted societal stigma remains essential for achieving comprehensive HIV response and social justice.

Recommendations

- Support peer led KP networks and safe community spaces under TIs to encourage self-expression, mutual support, and empowerment
- Collaborate with the departments of school and higher education to integrate HIV and stigma education into curriculum. Conduct sensitisation programmes for educators, and linkages for scholarships for KP youth as part of mainstreaming efforts
- Enforce zero-tolerance policies on stigma in ART, ICTC, and PPTCT centres
- Ensure patient rights are visibly displayed and develop confidential grievance mechanisms for reporting stigma incidents
- Facilitate legal literacy programmes to ensure PLHIV are aware of their rights under The HIV and AIDS (Prevention and Control) Act, 2017, and can access redressal mechanisms

Limitations

The study was conducted at a single point of time, and it is subject to recall bias.

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Study on HIV/AIDS related stigma and discrimination in Telangana

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Introduction and rationale

HIV-related stigma and discrimination continue to manifest in every country and region of the world, creating major barriers to preventing further infection, alleviating impact, and providing adequate care, support, and treatment (1). The stigma associated with AIDS has silenced open discussion, both of its causes and appropriate responses. Visibility and openness about AIDS are prerequisites for the successful mobilisation of government, communities, and individuals to respond to the epidemic (2). Stigmatisation associated with AIDS is underpinned by many factors, including lack of understanding of the illness, misconceptions about how HIV is transmitted, lack of access to treatment, and prejudice and fears relating to several socially sensitive issues, including sexuality, disease and death, and drug use. Stigma can lead to discrimination and violations of human rights, which affect the well-being of People living with HIV (PLHIV) in fundamental ways. In countries all over the world, there are well-documented cases of people living with HIV being denied the right to healthcare, work, education, and freedom of movement, among others. Global consensus on the importance of tackling AIDS-related stigma and discrimination is highlighted by the Declaration of Commitment adopted by the United Nations General Assembly Special Session on HIV/AIDS in June 2011 (3).

Objectives

- To understand the level of stigma & discrimination (S&D) among People Living with HIV (PLHIV) and Key Population (KP)
- To identify the determinants of S&D among PLHIV and negative KP

Methodology

A cross sectional mixed method study conducted at major high-load ART centres and Non-Governmental Organisations (NGOs) of Telangana State. Out of 22 ART Centres in Telangana State, 4 ART Centres were taken to cover all the regions (East, West, North, South) of Telangana. From North-Nizamabad District (GGH NIZAMABAD ART centre) from South-Mahbubnagar District (DH Mahbubnagar ART centre), from West-Hyderabad District (Osmania ART centre), from East-Warangal District (MGM Hospital) and TI NGOs from the same districts were selected for the study.

IRB approval was sought from Ethics committee, Gandhi Hospital and Medical College. A sample size of 800 respondents was included in the study, of which 400 were PLHIVs and 400 were from the Key Population (100 each among the 4 KP groups- MSM, FSW, TG, IDU).

Data was collected using a structured questionnaire and entered using MS Excel 2010.

Findings

The findings on People Living with HIV (PLHIV) revealed significant insights into their demographic and healthcare experiences. Among PLHIV respondents, majority fall in the age group of 35 to 49 years. 46.3% of PLHIVs hesitated to disclose their status, outside of the healthcare settings due to fear of rejection, lacking

openness. Nearly half (48.8%) of the respondents belonged to the age group of 35–49 years, with females forming the majority (51.8%). A considerable proportion of PLHIV were illiterate (39.8%). In terms of marital status, the majority (56%) were married, and among those who had sexual partners, 58% reported having one sexual partner in the past 12 months.

With respect to disclosure experiences, 62.8% of PLHIV had disclosed their HIV status to individuals outside healthcare settings, and more than half of them (53.7%) were accepted after disclosure. However, 46.3% remained hesitant to disclose their status due to fear of rejection. Regarding knowledge and awareness, 83% were aware of the modes of HIV transmission, yet 55% still believed that an HIV-positive person cannot appear healthy. Over half (53.3%) had not participated in any HIV awareness campaigns, and among those who had, only 45.5% felt that these campaigns were effective in reducing stigma, while 47.3% were unsure of their impact. Concerning enacted stigma, all PLHIV received care and services from ART Centres, and almost all (99.5%) reported that facilities such as DSRC/STI and TB testing/treatment centres did not deny them services.

Mistreatment by healthcare workers had significantly reduced, although a small proportion (0.5%) still experienced stigma. In terms of self-stigma, 97.5% of respondents felt less stigmatised due to greater self-acceptance of their HIV-positive status. Additionally, 49.3% were aware of workplace policies and guidelines aimed at preventing discrimination and expressed the importance of such measures in promoting social inclusion. Access to healthcare and support services appeared positive, as PLHIV reported no discrimination from healthcare providers, adhered to their medications regularly, and faced minimal bias during hospital admissions. Moreover, 81.2% availed support and counselling services from HIV/AIDS support groups and believed that sufficient support structures were available for them. Despite these improvements, mental health challenges persisted, with many PLHIV experiencing sadness, hopelessness, anxiety, and low self-esteem, all of which significantly affected their psychological well-being. Nevertheless, social support played a crucial role in their resilience; over time, PLHIV reported greater acceptance from family, friends, and close relatives, enabling them to better cope with their condition and lead more stable lives.

Findings on Key Populations (KPs) reveal several important socio-economic and demographic trends. The majority of respondents in the study were aged between 25 and 34 years, with 30.25% having completed secondary education. Regarding marital status, 59.5% were unmarried, while those who were married, divorced, or separated mostly had negative HIV test results (99.1%), with only 0.9% testing positive. The majority (90%) had biological children, and most (49.1%) had two children. Additionally, 72.8% had sexual partners, and 83.2% of them had more than two sexual partners in the last 12 months.

In terms of disclosure, 39% of respondents had disclosed their KP identity, but only 12.5% experienced acceptance from others. Among transgender respondents (TGs), 96% understood that HIV is not transmitted through casual contact, such as shaking hands or mosquito bites. Moreover, 95% of TGs participated in HIV/AIDS awareness campaign.

When it comes to enacted stigma, the majority (99%) of KP respondents visited various healthcare and support service facilities, including TI-NGOs, ICTC/PPTCT, DSRC/STI clinics, and TB testing and treatment centres. While 99.2% reported no mistreatment or stigma from healthcare workers, a small percentage (0.8%) still experienced discrimination at these facilities. Self-stigma was also prevalent, with many respondents, particularly TGs (97%), reporting feelings of shame and embarrassment about their KP identity. Additionally, 88% of respondents avoided disclosing their identity due to fear of rejection. Most KP respondents (70.75%) recognised the role that educational institutions play in combating stigma and discrimination, and many believed they should have equal educational and career opportunities as non-KP individuals.

In terms of healthcare access and support, most KP groups (94.9%) did not skip or stop visiting service facilities, and 95.7% availed themselves of the available services. However, 4.3% avoided these services because of their KP identity. Despite a decrease in discrimination in healthcare settings, KP respondents still faced mental health challenges, such as sadness, hopelessness, anxiety, and low self-esteem. A notable 34% avoided sharing their KP identity with friends and family due to the fear of rejection. Furthermore, 88% of KP respondents experienced self-stigma. While there has been a reduction in stigma and discrimination by healthcare providers, a small percentage of KP respondents still faced discriminatory experiences, which underscores the ongoing need for awareness and sensitisation in healthcare and community spaces. Additionally, 70.7% of respondents were aware of workplace policies and guidelines addressing HIV-related stigma and discrimination.

Conclusion

Majority (83%) of PLHIV are aware of modes of HIV transmission yet there are gaps in awareness and knowledge among PLHIV, including their lack of understanding of the illness, misconceptions about how HIV is transmitted. 100% PLHIV are receiving service from the ART Centre, but they are also unaware of services available at other centres like DSRC/STI, TB testing/treatment facilities. The majority of PLHIV were not discriminated at educational institutions and workplaces. They are aware of workplace policies and guidelines and felt the necessity of implementation of such policies and guidelines to avoid discrimination by the general population. PLHIV faced mental health issues at least once in their lifetime, especially at the beginning of their HIV positive status. They have experienced hopelessness/sadness/anxiety, and low self-esteem. Various stigma reduction strategies, coping mechanisms, are recommended at various levels, like - interpersonal level (care and support, community-based rehabilitation), at institutional levels (training programmes, and policy development).

The majority of them belong to the age group of 25 to 34 years. Around 39% of KP respondents from this study group were able to disclose their KP identity, of them only 12.5% were accepted. Around 87.6 % of KP respondents are aware of the mode of HIV transmission. Among KP respondents, TGs 93.9% are aware that condom usage reduces HIV transmission and HIV is not transmitted by casual contact, like shaking hands. Almost 99% KP respondents availed services from ICTC/PPTCT, DSRC/STI clinic, and TB Testing/ treatment facility. Even though a small percentage of KP respondents felt that they were stigmatised and discriminated at these centres, this seems to have an impact on their mental health.

Recommendations

- More research is needed for the conceptual understanding of stigma within the cultural context of the country, including research on KP groups
- Tackling stigma in healthcare settings would require improvements in education and training which helps in de-stigmatisation at various levels in healthcare system
- Digital real-time support ensuring confidentiality, to educate, raise awareness regarding risks and HIV prevention confidentiality, educate, raise awareness on risk behaviour, and support services for HIV prevention. So that society, educational groups, and medical professionals can get real-time support through these apps

Limitations

- The field executives found it difficult to get complete information from female sex workers (FSWs) during the interview, as they felt it would impact their profession
- A few TG/Hijra communities were not willing to share or respond to some questions from the tool

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Stigma and discrimination faced by People Living with HIV and key populations in educational, workplace, healthcare settings and community setting in Tripura

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Introduction and rationale

Stigma against HIV profoundly shapes the lives of people living with HIV. Stigma and discrimination associated with HIV/AIDS are conceptualised as processes of devaluation of people either living with or associated with HIV and AIDS (1). As per National Family Health Survey (NFHS – 5), stigma and discrimination towards people living with HIV creates a hostile environment that impacts their quality of life in many ways such as access to education and healthcare, lack of social support, increased risk of violence. These questions are meant to ascertain the respondent's own personal opinions and attitudes towards people infected with HIV (2).

In Tripura, testing and case detection also has increased over the years (3). Many studies conducted world-wide and in India have shown negative impacts of stigma and discrimination on People living with HIV. Therefore, this study was conducted to explore and understand stigma and discrimination faced by them in their schools, colleges, workplaces, health institutions and in their residential localities.

Objectives

- To find out level of Stigma and discrimination faced by People Living with HIV and Key Populations, in their educational settings, workplaces, healthcare settings and community setting in selected districts of Tripura
- To find out the determinants of stigma and discrimination faced by PLHIV and Key Populations

Methodology

Study Design and sites: A community based cross-sectional study was done among People Living with HIV (PLHIV) and Key Populations (KP) from West and North Tripura districts between October 2023 to March 2024 (6 months). PLHIV were selected from ART Plus centre at AGMC & GB Pant Hospital, West district and FI-ART North Tripura District Hospital, whereas Key Populations (FSW, MSM, IDU, TG) were selected from registered population with TI-NGOs in West and North Tripura. Due to low number of Transgender, all TGs registered under TI-NGOs of the state were included.

Sample Size: Total 800 study participants, 400 participants each, PLHIV and KP (100 each among the four KP groups) were planned to be selected initially. But even after complete enumeration of TGs, only 73 participated in the study. Therefore, final sample size achieved was 773.

Data collection process: Multi-stage sampling was done, starting with selecting two ART centres. With the help of PPS method, 294 participants from ART Plus centre AGMC and 106 participants from FI-ART centre North Tripura, were selected. Consecutive sampling of daily ART attendees (First 15 from ART Plus centre AGMC and first 5 from FI-ART North per day) on working days continued for two months. For key populations (FSW, MSM, IDU), systematic random sampling was done in West and North Tripura District. Complete enumeration was done for TGs across the state. A pre-designed semi-structured questionnaire developed by NACO was

used. Participants below 18 years, those who did not give consent, seriously ill or not in a mental state to be interviewed, were excluded from the study.

Data analysis: Data were entered into excel based data entry format provided by NACO. The analysis was done using IBM SPSS version 16.0. In the findings, frequency and percentage with appropriate tables and figures have been provided. Chi square test and Fisher's exact test was used to find out association between important variables. Ethical approval was sought from Institutional Human Ethics Committee (IEC).

Findings

People Living with HIV

Socio-demographic characteristics: A total of 400 PLHIV were enrolled, with 72.5% recruited from the ART Plus Centre at Agartala Government Medical College & GBP Hospital. Most were male (72.25%) and aged 21-40 years (69.75%). Over half (52.3%) had completed secondary education, while 6.5% had no formal schooling. The largest occupational group (58.5%) included housewives and dependents, followed by 18.0% self-employed. In terms of marital status, 55.5% were currently married, 34.0% never married, and 10.5% divorced, separated, or widowed.

Enacted stigma: All participants accessed ART services in the past year, but only 27% visited DSRC/STI clinics, and 46% visited TB testing/treatment facility. Delay in services was reported once or twice (23.8%) in ART centre.

Self-stigma: About 74.7% avoided disclosing their HIV status, 43.8% avoided social visits, and 44.3% felt they brought shame to their families. While 50.7% reported feelings of shame, 49.3% did not. Spiritual guilt (1.8%.) and perceived unfair treatment (10.8%) were less common.

Impact of stigma on mental health: Nearly 98.0% reported emotional distress, such as sadness or anxiety. Despite this, 74.5% felt valued, though 26.0% reported reduced self-esteem.

Key Populations

Socio-demographic characteristics: Most FSWs (60%) and IDUs (73%) were from West Tripura, while MSM were mainly from North Tripura (54%). TGs were mostly from West (50.7%) and Gomati (46.6%) districts. Majority of KPs; FSWs (92%), IDUs (85%), MSM (91%) and TGs (87.7%) belonged to 21-40 years age group. Secondary education was common among IDUs (65%) and MSM (52%), while primary education was more common among FSWs (62%) and TGs (69.9%).

Enacted stigma: All FSWs, IDUs, and MSM accessed services from both TI-NGOs and ICTC/PPTCT centres. Among TGs, only 69.5% and 56.2% accessed these services respectively. Enacted stigma written for PLHIV. The PI has done a comparison of facilities and comparison of typologies accessing these facilities which is not the question's purpose. TB testing uptake was low across all groups: 18% (FSWs), 13% (IDUs), 7% (MSM), and 8.2% (TGs).

Self-stigma: FSWs reported the least stigma, with 99% never avoiding visits and 95% never feeling they brought shame. IDUs showed more stigma: 43% avoided visits and 77% felt shame. Among MSM, 78% never avoided visits, though 38% felt shame a few times. TGs showed the highest stigma, with 83.6% frequently feeling shame and 26% avoiding social contact or feeling ashamed.

Impact of stigma on mental health: Emotional distress was highest among TGs (100%), followed by IDUs (96%), FSWs (91%), and MSM (73%).

Mental health impact was significantly associated with religion for FSWs ($p=0.016$), marital status (unmarried) for IDUs ($p=0.013$), and education ($p=0.026$) and self-employment ($p<0.001$) for MSM.

Conclusion

The present study found that most PLHIV participants did not report significant enacted stigma or discrimination in their communities, workplaces, or healthcare settings. While self-stigma and its mental health impact were noted, no significant risk factors emerged. Among key populations (FSW, MSM, IDU, TG), enacted stigma was infrequent, though IDUs and TGs reported high self-stigma expressed as shame, family dishonour, and employment challenges. Mental health impact was considerable but mitigated by strong family and peer support. Significant associations were found between stigma-related mental health effects and unmarried (IDU), and lower education or occupation level (MSM).

Recommendations

Persistent self-stigma among PLHIV and KPs can be addressed with the help of targeted interventions such as peer led support groups and public sensitisation campaigns. Educational institutions and workplaces must strengthen anti-discrimination measures. SACS may consider increasing utilisation of preventive services especially STI clinics and TB testing centres. Access to HIV/AIDS support groups, mental health services, and community-based rehabilitation programmes need to be expanded. Structured counselling services should be provided at healthcare facilities focusing on coping with stigma.

Limitations

Study could not achieve the required sample size of 100 for the TG population.

Acknowledgement

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Stigma and discrimination among People Living with HIV/AIDS and Key Populations in Uttar Pradesh

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Introduction and rationale

HIV/AIDS-related stigma and discrimination remain among the most significant barriers to prevention, treatment, and care. Stigma, defined as the social devaluation of individuals based on attributes such as HIV status, creates isolation and exclusion, while discrimination reflects its enactment through denial of services, social rejection, and unequal opportunities (1). In India, stigma persists across family, community, workplace, and healthcare settings, compounded by cultural misconceptions and moral judgments about HIV. Such stigma delays testing, hinders disclosure, undermines adherence, and exacerbates psychosocial distress (2). Internalised stigma, in particular, has been shown to increase depression among PLHIV entering care in southern India (3). Evidence also highlights that stigma within healthcare environments discourages treatment-seeking, while community-based interventions, such as ASHA-led initiatives, show promise in reducing stigma and enhancing support for women living with HIV (4).

Key populations (KPs) such as female sex workers, men who have sex with men, people who inject drugs, and transgender persons—experience multiple layers of stigma and marginalization, often linked to criminalization, violence, and social exclusion. These experiences restrict access to healthcare and weaken continuity of treatment, further heightening vulnerability (1, 4). Despite recognition of stigma as a critical challenge, intervention-focused studies in India remain limited, and research in lower-prevalence but high-burden states such as Uttar Pradesh is scarce. Given that Uttar Pradesh continues to report a significant number of HIV-related deaths annually, addressing stigma and discrimination is vital for improving service uptake and adherence. This aligns with the goals of the National AIDS Control Programme Phase V (2021–2026).

This study seeks to generate region-specific evidence from Uttar Pradesh to understand the forms, levels, and determinants of stigma among PLHIV and KPs. Findings will inform targeted, culturally relevant interventions that reduce stigma, strengthen adherence, and enhance quality of life, thereby contributing to national HIV control priorities.

Objectives

- To understand the level of stigma and discrimination among PLHIV and Key Populations in Uttar Pradesh
- To identify the determinants of stigma and discrimination among PLHIV and Key Populations

Methodology

This cross-sectional study was conducted in four districts of Uttar Pradesh— Lucknow, Meerut, Jhansi, and Varanasi selected through stratified random sampling to ensure regional representation. The study population included 800 participants: 400 PLHIV from antiretroviral therapy (ART) centres and 400 KPs (100 each of FSW, MSM, IDU, and TG) from targeted intervention (TI) NGOs.

Data were collected using a structured questionnaire assessing HIV knowledge, enacted stigma, self-stigma, healthcare access, mental health, and social support. The study employed both quantitative and qualitative methods, with quantitative data analysed using descriptive statistics (frequencies and percentages) and qualitative data subjected to thematic analysis to identify coping strategies and recommendations.

Ethical approval was obtained from King George's Medical University (KGMU), Lucknow, with informed consent and confidentiality ensured for all participants. Data collection occurred over four phases: literature review, tool selection, data collection, and analysis.

Findings

The study included 404 PLHIV (58.4% male, 40.3% female, 1.2% transgender), with the majority aged 35–45 (33.2%) and earning 0-20,000 INR monthly (83.9%). Among PLHIV, 80.9–87.7% correctly understood that HIV cannot be transmitted through casual contact (e.g., hugging, sharing food), though 2.5–3.6% believed it could, and 9.7–15.3% were unsure. Misconceptions about mosquito transmission persisted, with 13.5–15.6% believing it possible and 12.7–18.4% unsure. Condom use was recognised as protective by 68.7–100%, but 14–27.6% were unaware. Over 70% disclosed their HIV status outside healthcare settings, yet 0.6– 2.1% reported public disclosure by healthcare workers. Service denial at ART centres was rare (95.1–100% reported "Never"), but 0.8–2.4% faced frequent denial, and 1.2–2.7% experienced delays. Mental health impacts were significant, with 74.8–100% acknowledging asymptomatic HIV infection, yet 5.9–13.5% held misconceptions.

Table 1 Status of denial of services at ART Centre due to HIV positive status

Denial of services because of HIV positive status at ART Centre	Female (%)	Male (%)	Transgender	Total
ART centre				
A few times	4 (2.4)	2 (0.8)	0	6 (1.5)
Once or Twice	4 (2.4)	7 (3)	0	11 (2.7)
Never	155 (95.1)	227 (96.2)	5 (100)	387 (95.8)
Total	**163**	**236**	**5**	**404**

Qualitative findings revealed PLHIV coping strategies, including avoidance *("When someone shows negative behaviour, I stay away")*, educating others *("When people understand about HIV, they will change their thinking"),* and seeking support from family or ART centres *("Talking to others [at ART centres] is really helpful")*. These strategies highlight resilience through personal agency and community support.

For KP population, age profiles varied across the groups, with a notable concentration in younger age brackets. Among FSW, 73% were aged 18–34 years, MSM showed a similar trend, with 69% aged 18–34 years, IDU group had 72% in the 18–34 age range, TG group was the youngest, with 88% aged 18–34 years. These findings indicate a predominantly younger demographic, particularly among TG individuals, which may influence risk behaviours and intervention strategies.

The number of sexual partners, among FSW, 83% reported 0–100 sexual partners, reflecting the high-risk nature of their occupation. MSM reported 96% with 0–100 partners, IDU (100%) reported 0–100 partners, indicating lower sexual partner diversity compared to other groups. For TG, 97% had 0–100 partners. For KPs, MSM 78–84% correctly rejected casual contact transmission, but 7–12% believed it possible, and 9–11% were unsure. Mosquito transmission misconceptions were held by 10–19%, with 6–13% unsure. Condom effectiveness was acknowledged by 77–90%, though 6–23% lacked knowledge. Transgender respondents reported significant internalized stigma, with 60% frequently concealing identity due to discrimination fears, 56% experiencing anxiety, and 57% reporting sadness.

Qualitative analysis highlighted KPs' bold coping mechanisms, including visible advocacy (*"We need loud, proud campaigns showing us living our lives")*, grassroots education *("Host real talk sessions in our spaces— teach people HIV facts without preaching"*), and creating stigma-resistant communities ("*We make our own spaces*

where HIV's just another topic"). Social support was strong, with 72% reporting supportive networks, yet 37% faced rejection, underscoring the need for broader acceptance.

Conclusion

The study reveals that stigma and discrimination less significantly impact PLHIV and KPs in Uttar Pradesh, with low persistent knowledge gaps and healthcare barriers. While most PLHIV and KPs demonstrate strong HIV knowledge, little misconceptions about transmission routes (e.g., casual contact, mosquito bites) persist, particularly among 10–20% of respondents. Healthcare discrimination was negligible, though affects a minority, with 0.8–2.4% reporting service denial and 7–15% of KPs facing occasional mistreatment. Mental health challenges, including anxiety and low self-esteem, are prevalent, especially among transgender individuals (56–60% affected). Social support mitigates stigma, but rejection remains a challenge for 37% of KPs. Qualitative findings highlight resilience through avoidance, education, advocacy, and community support, emphasising the need for targeted interventions.

Recommendations

- Strengthen healthcare provider training on KP-specific care and confidentiality to reduce service denial and mistreatment
- Integrate mental health screenings and peer support groups into HIV services to address anxiety, shame, and low self-esteem
- Enforce workplace and educational anti-discrimination policies with transparent metrics and anonymous reporting systems
- Expand community-based safe spaces and family counselling to enhance social support and reduce rejection for KPs

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Barriers and Facilitators to availing Targeted Interventions, Testing and Treatment services by High-Risk Population groups under National AIDS Control Programme in select districts of Uttar Pradesh along the Indo-Nepal border: A Mixed Method Study

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Introduction and rationale

According to the National AIDS Control Organisation (NACO), an estimated 24,01,284 (19,92,058–29,06,772) people were living with HIV (PLHIV) in India in 2021 (1). The estimated adult HIV prevalence (15–49 years) has shown a consistent decline from 0.55% in 2000 to 0.21% in 2021 (2). However, HIV prevalence remains highly heterogeneous, with significant variations between and within states and across different sub-populations.

A recent study reported that adult HIV prevalence in districts along the India–Nepal border—including Balrampur, Shrawasti, and Siddharthnagar, as well as neighbouring districts of Basti, Ambedkar Nagar, Gorakhpur, and Deoria—was 1.5 to 3 times higher than the state average (3). Moreover, HIV incidence continues to be disproportionately higher among Female Sex Workers (FSW), Men who have Sex with Men (MSM), Transgender people (TG), and People Who Inject Drugs (PWID) when compared with the general population (4).

The India–Nepal border is highly porous, allowing for substantial cross-border population mobility driven by social, cultural, and economic ties. This frequent movement of people poses significant challenges to the delivery of consistent and quality HIV/AIDS prevention, testing, and treatment services. Such mobility can contribute to increased vulnerability and gaps in service continuity, particularly among key and high-risk populations.

In alignment with the Global AIDS Strategy 2021–2026, which emphasises the need to address inequalities and strengthen health systems to mitigate the impact of the HIV pandemic (5), it is essential to identify the key determinants, operational facilitators, and barriers affecting the delivery and uptake of Targeted Intervention (TI) services among High-Risk Groups (HRG) in these border districts.

Objectives

- To assess the service providers and beneficiaries (HRG) perceived barriers and facilitators to availing targeted interventions, testing and treatment services under National AIDS Control Programme in select districts of UP along Indo-Nepal border
- To assess the HIV sero-positivity and associated factors among key HRG in selected districts of UP along Indo-Nepal border.

Methodology

The present study is a mixed method study. The qualitative component included Focused Group Discussion (1 FGD per HRG group) and In-Depth Interview (IDI of 2 service providers) at selected TI site. The FGD involved 6-12 participants. The study was conducted across 8 Targeted Intervention sites in 6 districts of UP (i.e. Bahraich, Lakhimpur Kheri, Siddharthnagar, Maharajganj, Pilibhit & Gorakhpur) along the Indo Nepal Border. Total 19 FGD & 16 IDI were done between April 2024 to July 2024. FGD and IDI sessions were recorded after taking informed

consent. Barriers and facilitators with respect to delivery and receipt of free condoms and other commodities, basic RTI/STI services, regular medical checkup, counselling, risk mapping, linkages to ICTC/ART/NTEP and regular follow up of those on treatment for counselling and treatment adherence was assessed. Thematic analysis of qualitative data was done to identify themes and codes using grounded theory approach and inductive reasoning.

Quantitative component involved secondary data analysis at TI site for the period April 2023-March 2024. Sero-positivity in HRG population and association with frequency of sexual activity, number of condom use, age, presence of STI in past 3-months, unprotected sex, violence, peer with high injection drug use, use of shared needles and frequency of injectable drug use etc. was assessed. The study was approved by the Institutional Ethics Committee Dr RMLIMS, Lucknow vide IEC No. 04/24 dated 15/03/2024.

Findings

Facilitators with respect to delivery and receipt of Targeted Interventions services were ease of access to quality condoms, lubricants, needle and syringes in community settings through Peer and Outreach Worker, accessibility of TI site and supportive staff, good liaison and networking of TI site staff with district authorities, dedicated Counselling services at TI site, regular availability of ART drugs and availability of doctor consultation and medicines at TI Site.

"The Condom that we are getting now is of better quality from what we were getting earlier"- Beneficiary, Siddharth Nagar

"If we go on our own, we will have to wait for a long time for registrations" - Beneficiary, Gorakhpur

"We are informed that getting quarterly medical check-up is important"- Beneficiary, Maharajganj

"ART medicines are available regularly, if there is delay on our part, we get a call"- Beneficiary, Maharajganj

"We consult the doctor here (at TI site) or visit their clinic" – Beneficiary, Siddharth Nagar

Innovative community and stakeholder engagement techniques such as Golgappa competition, Vocational training support under government schemes such as Kaushal Vikas Yojana facilitated engagement with FSWs.

Barriers with respect to delivery and receipt of Targeted Interventions services were Irregular supply of condoms sometimes, untrained staff, distance of district hospital/ICTC and no prioritisation for HRG resulting in long waiting time, out-of-pocket expenditure, lack of privacy at district hospital, non-availability of ART Centre in some district, non-accessibility of Opioid Substitution Therapy for IDU, cross border movement of FSW & IDU and revised norms regarding coverage of beneficiaries by Peers.

"The beneficiaries asked us, initially you provided free condoms and now you are asking to purchase" - Project Manager, Maharajganj

"Some HRG members (FSWs) move to Nepal as well. We do provide them with condoms, but their testing gets delayed by a month or two." - Counsellor, Maharajganj

"The workload is quite high. Earlier, there were more peers, but now the number of peers has decreased." - Counsellor, Maharajganj

"We do not have OST Centre at our place. Because of distance, we do not go. No one is taking OST medicines."- Beneficiary, Paliyan, Lakhimpur Kheri

Transgender cited movement across districts for orchestra functions and other engagement, lack of social security and counsellor being a female as important barriers.

"We want counsellor to be a transgender, we will be more free" – Beneficiary, Gorakhpur

Among Female Sex Workers (FSWs), Bahraich reported the highest sero-positivity of 1.95%, nearly double the average sero-positivity of the six study districts (1.07%).

Among People Who Inject Drugs (PWID), Pilibhit recorded the highest sero-positivity at 11.66%, followed by Bahraich at 8.04%, both higher than the average sero-positivity of 5.78% across districts. In contrast, Siddharthnagar reported a very low sero-positivity of 0.55% among PWID.

Overall sero-positivity among Men who have Sex with Men (MSM) was 3.13%, with Maharajganj showing the highest prevalence (3.87%) and Lakhimpur Kheri, the lowest.

Among Transgender persons (TG), Pilibhit reported a high sero-positivity of 3.85%, compared to the average of 1.83% across districts.

Further analysis revealed that FSWs who experienced violence (9.7%) and TG individuals who had an STI in the past three months (14.3%) exhibited higher sero-positivity, and this difference was found to be statistically significant (p=0.013).

Conclusion

Easy access to and wide outreach of Targeted Intervention (TI) sites offering quality services—such as condoms, lubricants, counselling, and risk reduction communication—was a key enabler for service utilisation. Effective liaison between TI sites and district authorities, along with regular review and coordination meetings, was also an important facilitator in several districts, including Pilibhit, Gorakhpur, Maharajganj, and Lakhimpur Kheri. Additionally, training and capacity building of counsellors and peer educators were highlighted as crucial components for ensuring quality services.

The distance of key health facilities—such as Integrated Counselling and Testing Centres (ICTC), RTI/STI clinics, ART centres, and Opioid Substitution Therapy (OST) services was a major barrier, resulting in long travel times, out-of-pocket expenses, and also the absence of a prioritisation mechanism for High-Risk Group (HRG) populations resulted in long waiting time. These issues were prominently reported from Lakhimpur Kheri, Siddharthnagar, and Pilibhit.TI sites often had to arrange transport, food, and other logistical support to facilitate access to services.

The geographically dispersed HRG population and the implementation of revised norms for peer educators contributed to an increased workload, posing operational challenges, particularly in Lakhimpur Kheri and Pilibhit.

Cross-border movement between India and Nepal, along with seasonal migration during festive periods, was identified as an important barrier, disrupting continuity of services and regular follow-up among HRG members.

Recommendations

Emphasis should be placed on strong liaisoning and regular coordination meetings with district officials to ensure smooth implementation of Targeted Intervention (TI) services. Mechanisms to fast-track registration for High-Risk Group (HRG) members visiting health facilities, along with flexible operating hours at ICTC and OST centres, can improve accessibility. Ensuring privacy and confidentiality during service delivery and the easy availability of OST drugs and other essential commodities are critical for encouraging uptake of services.

Additionally, establishing a surveillance system in coordination with Sashastra Seema Bal, police, and other stakeholders can help ensure that HRG individuals involved in cross-border movement and seasonal migration are adequately covered for counselling, testing, and treatment services. Regular training and refresher courses for staff and peer educators are recommended to maintain the quality and consistency of services.

Limitations

The study involved data collection only at TI sites, further exploration of issues at the referral ICTC/OST/ ART centers would improve comprehensive understanding of operational issues, and will help make practical changes/recommendations with regard to the current practices in a better way.

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Stigma & discrimination among People Living with HIV & Key Populations in Uttarakhand

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Introduction and rationale

Despite major progress in HIV prevention, treatment, and care, stigma and discrimination remain critical challenges for People Living with HIV (PLHIV) and Key Populations (KPs) in India. These social barriers reduce healthcare access, adherence to Antiretroviral Therapy (ART), mental well-being, and overall quality of life. In Uttarakhand, where difficult terrain and scattered populations already limit service delivery, stigma further intensifies inequities.

Research across India has shown that fear of disclosure, anticipated stigma, and discrimination hinder PLHIV and KPs from accessing healthcare, education, and employment (1-3). Discrimination occurs in workplaces, schools, healthcare facilities, communities, and even families (4). Women and marginalised groups often face heightened stigma due to gender inequality, poverty, caste, or ethnicity. Stigma also extends beyond individuals, affecting entire families or communities (5).

Reports include denial of medical treatment, rejection by relatives, violence, and even refusal of funeral rites. Outreach workers also encounter resistance, with schools often opposing HIV awareness programmes (6). Traditional norms further equate HIV with “immoral” behaviour, deepening prejudice.

In Uttarakhand, evidence on HIV-related stigma and discrimination remains limited, despite its urgent importance. Generating localised research is essential to design context-specific interventions under the National AIDS Control Programme (NACP) aimed at reducing stigma, strengthening sensitisation, and providing effective support to People Living with HIV (PLHIV). Stigma and discrimination manifest at multiple levels—personal, interpersonal, community, and institutional—and adversely impact both PLHIV and Key Populations (KP). Addressing these challenges is not only a matter of protecting human rights but also critical for improving health outcomes and ensuring the effectiveness of HIV prevention, care, and treatment services.

Objectives

- To understand the level of Stigma & Discrimination among PLHIV & Key Population in Uttarakhand
- Identify the determinants of Stigma & Discrimination among PLHIV & Key Population in Uttarakhand

Methodology

Study involved cross-sectional design using quantitative research methods to provide a comprehensive understanding of stigma and discrimination experienced by PLHIV and KPs. A total sample of 400 adult male, female, and transgender People Living with HIV (PLHIV) was selected from Antiretroviral Therapy (ART) centers across Uttarakhand using a random sampling method. Out of the total, 177 participants were drawn from Dr. Sushila Tiwari Medical College and Hospital, Haldwani, in Nainital district. From the District Coronation Hospital, Dehradun, 172 participants were included in the study, while 51 participants were taken from JNSM Combined

Hospital, Roorkee, in Haridwar district. Thus, the final sample comprised 400 PLHIV, representing three major ART centers of Uttarakhand.

For the key population, a total sample was drawn using a random sampling method from different districts of Uttarakhand based on coverage of Female Sex Workers (FSW), Men who have Sex with Men (MSM), Injecting Drug Users (IDUs), and Transgender (TG). In the case of FSWs, a total of 100 participants were selected: 46 from Dehradun (coverage 1100), 33 from Haridwar (coverage 800), and 21 from Nainital (coverage 500). Similarly, for MSMs, the total sample was 100, which included 35 from Dehradun (coverage 520), 51 from Haridwar (coverage 750), and 14 from Nainital (coverage 200). For IDUs, again, a sample of 100 was drawn, with 30 participants from Dehradun (coverage 520), 35 from Haridwar (coverage 600), and 35 from Nainital (coverage 600). Lastly, for TGs, a sample of 100 was selected: 31 from Dehradun (coverage 80) and 69 from Haridwar (coverage 180). Thus, across all four key populations, a total of 400 participants were included in the study, proportionately representing the coverage from the three districts.

Findings

The average age of PLHIV in the study was 39.7 years. More than one-third (36%) had completed secondary education (6th to 10th class). A majority of respondents belonged to the General category (70.5%). A diverse range of occupations not specifically categorised (56%) as the respondents only mentioned 'ocupation' as other category and chose not to specify it. A majority of respondents (61.25%), reported an average annual income below ₹100,000. A majority of respondents, 267 (66.75%), reported being currently married. Around 2.5% reported having a sexual partner other than their spouse in the past 12 months. Around 30.25% respondents chose not to disclose their status beyond medical settings. For ART services, 223 (55.75%) reported never having to wait longer, while 29 (7.25%) experienced this once or twice, and a notable 148 (37%) reported this happening a few times.

For ART, DSRC/STI and TB Testing services approx. 99% respondents reported never being mistreated and same result was found for the experience of healthcare workers refusing to touch them as being very low across all types of services. 338 (84.5%) respondents said they never experienced social avoidance. A large majority of 349 (87.25%) reported never feeling shameful towards their family due to their HIV status. Around 77.5% reported never feeling shame or embarrassment due to their HIV status. The majority of respondents (92.5%) reported never experiencing discrimination by others due to their HIV positive status.

The average age of respondents across all key populations is 30.5 years. The education levels among the respondents reveal significant gaps in formal education, particularly among FSWs and IDUs, while MSM and TG respondents show relatively higher education levels. Around 7.25% of respondents are living with HIV in KPs. The majority of respondents (52.75%) have never been married, while 46.25% are currently married. The highest proportion of married FSW respondents (23.25%) reported that their spouse had been tested for HIV. Close to 72.5% of respondents reported having sexual partners outside of marriage in KPs. FSWs reported the highest average number of partners (194.64) in past 12 months.

The average duration of registration with a Targeted Intervention (TI) programme varies across key populations, with MSM having the highest average registration period (52.94 months). All the respondents across all key populations (FSW, IDU, MSM, and TG) have been tested for HIV while 6.25% reported being HIV-positive. The highest proportion of HIV-positive cases was found among IDU (3.5%), followed by TG (2%) and MSM (0.75%). FSW (8.25%), MSM (15.25%), and TG (15.25%) respondents cited high-risk sexual behaviours as their main reason for HIV testing. A significant majority (83.75%) reported no major health conditions among KPs.

More than half (54%) of the respondents reported not disclosing their KP identity to anyone other than healthcare providers. The most commonly reported experience after disclosure was a decrease in social acceptance (29%), followed by facing rumors and misinformation (23.75%) and exclusion by family members (21.25%). A significant proportion (60.5%) of Key Populations (KPs) have faced some level of social avoidance due to their identity, highlighting the persistent stigma and discrimination being encountered in their daily lives.

Conclusion

PLHIV are predominantly middle-aged, educated to at least secondary level, economically vulnerable, and mostly live in urbanised areas. The findings indicate that while knowledge of HIV transmission is generally good, gaps remain, and participation in awareness programmes is low. The report also addresses the experiences of disclosure, enacted stigma in healthcare settings, and self-stigma, revealing issues such as denial of ART services, delays in TB testing, and persistent feelings of shame and social avoidance. Finally, it touches upon the impact on mental health, the importance of social support, and the coping mechanisms employed by PLHIV, emphasising the need for improved access to support services and targeted awareness campaigns.

For KPs, strategies to scale up interventions and strengthen outreach for groups such as MSM, transgender individuals, and female sex workers, particularly in areas like Haridwar and Nainital. The recommendations cover a broad spectrum, including harm reduction, economic stability through training and welfare schemes, improved access to education and employment, and culturally sensitive engagement with diverse religious and caste communities. Furthermore, the study focuses on healthcare access and quality, HIV knowledge and prevention, and strategies to combat stigma—both enacted and self-perceived—in healthcare, social, and family settings, alongside initiatives for mental health support and effective coping mechanisms.

Recommendations

The sources highlight several critical implications for People Living with HIV (PLHIV) and Key Populations (KPs). Pervasive stigma and discrimination necessitate extensive community engagement, sensitisation, and anti-discrimination policies across healthcare, workplaces, and educational institutions. Economic vulnerability is a major concern, necessitating linkages for skill development, access to welfare schemes, and entrepreneurship opportunities for both groups. Crucially, access to comprehensive, non-discriminatory healthcare needs to be strengthened. This includes integrated mental health services, routine TB and non-communicable disease screening, and consistent HIV testing, all delivered with cultural sensitivity. Targeted, myth-busting awareness campaigns are vital to improve HIV knowledge and promote safe practices. Additionally, enhanced social support and family acceptance are crucial to mitigate isolation and build resilience.

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