

HIV/AIDS

Comparative analysis of NFHS-4 & NFHS-5 and potential scope of HIV
Self-test kits

Presented By-

Drigha Jain (1498)
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Under the guidance of

Dr. Dhirendra Kumar
Professor, IIHMR University, Jaipur

Introduction & Causes



AIDS is caused by Human immunodeficiency virus, also known as HIV

HIV/AIDS

Blood Exposure

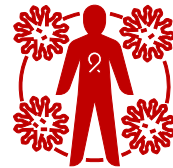
Injecting drug use
Transfusion of blood
Needle Sharing

Sexual Contact

Male-to-male
Male-to-female
Female-to-female

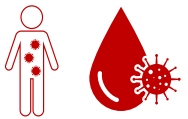
Perinatal

Transmission from mother to baby
Breastfeeding



A healthy person can get HIV infection through these modes

People living with HIV can spread the disease via



- AIDS is highly reported among sexually active people aged between 20-49 years.
- Male homosexuals, heterosexual partners, I.V. drug abusers, blood transfusion recipients, and patients having STDs are high risk group for HIV/AIDS.

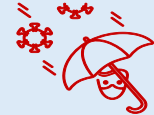
Opportunistic infections among AIDS cases

HIV weakens body's immune system and puts the body at risk of opportunistic infections (OIs)



Bacterial Infections

- Tuberculosis
- Food Poisoning
- MAC



Viral Infections

- Cytomegalovirus
- Herpes simplex virus



Fungal Infections

- Candidiasis
- Pneumocystis pneumonia



Opportunistic cancer

- Invasive cervical cancer
- Kaposi sarcoma

Anti-retroviral Therapy

ART effectively suppresses replication and restores immune system with reduction in chance of getting opportunistic infections. ART is now available free to all those who need it

Symptoms & Stages



Acute HIV -1st Stage

2-4 weeks after HIV enters the body

Fever
Headache
Fatigue
Sore Throat
Ulcers in mouth, anus, esophagus
Swollen lymph nodes
Fatigue



Chronic HIV- 2nd Stage

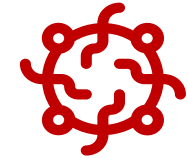
Immune cells are damaged at this stage and this stage is called clinical latency as no symptoms are shown at this stage



AIDS- 3rd Stage

Advanced stage of HIV which is AIDS

Unexplained Diarrhea
Fatigue
Night sweats
Extreme weight loss
Oral thrush
Enlarged spleen



Opportunistic infections are caused at this stage due to weakened immune system

Global and India scenario of HIV

Global Burden of HIV/AIDS

Approximately 1.3 million people contract HIV/AIDS each year, leading to around 630,000 deaths worldwide annually



39 Million PLHIV in 2022



17.4 Million Men



20 Million women



1.5 Million women

Countries with most HIV cases



South Africa with 760K PLHIV



India with 250K PLHIV



Mozambique with 240K PLHIV

Burden of HIV/AIDS in India

India is world's **Third** largest population with PLHIV 40K deaths are reported annually



3.1 Million PLHIV in 2023



1.9 Million men



1.1 Million women



68K Children

Highest prevalence of HIV/AIDS in India is in **Mizoram and Nagaland** whereas maximum number of PLHIV is in **Maharashtra**

Author	Methodology	Key Features
Atreyee Sinha, Jasmine Beryl Lydia, Gyan Chandra Kashyap	Quantitative research study	-Highlights how HIV/AIDS-related stigma, including fear of prejudice and social stigma, significantly deters individuals, especially from marginalized groups, from getting tested. -States how awareness of HIV/AIDS impacts testing decisions, emphasizing the crucial role of knowledge dissemination in shaping testing behaviors. -Aims to inform targeted public health policies to increase HIV/AIDS testing rates, focusing on communities with high stigma and low awareness.
Mansi Malik, Siaa Girotra, Debolina Roy, Saurav Basu	Cross-sectional study	-Evaluates awareness levels regarding HIV/AIDS transmission modes, including sexual intercourse, blood transfusions, and mother-to-child transmission, across different socioeconomic categories, education levels, and geographic regions in India. -Discusses prevalent misconceptions and stigmatizing attitudes that hinder HIV/AIDS prevention and treatment efforts, emphasizing the need for targeted education and awareness campaigns to combat these barrier -Survey compares NFHS rounds to track changes in HIV/AIDS awareness, stressing ongoing surveillance and interventions to reduce its impact in India.

Author	Methodology	Key Features
Aritro Bhattacharyya, Ratnakar Chakraborty, Tapasya Raj, Bijaya Kumar Padhi, Jagdish Khubchandani	Systematic literature review	-Article provides background on HIV/AIDS prevalence in India, focusing on epidemiological trends and data related to women of reproductive age, highlighting their vulnerability to the disease. - Shows disparities in understanding HIV/AIDS among women of reproductive age, stating how awareness and knowledge vary based on socioeconomic status, educational attainment, and geographic location -Prior studies indicate limitations in the comprehensive understanding of HIV/AIDS among this population, underscoring the need for targeted education and awareness programs to bridge knowledge gaps effectively.
Anand D. Meundi, MD, Ambikadevi Amma, MD, Avinash K. Shetty, MD	Cross-sectional study population- based survey	-Despite some sympathetic attitudes, stigma toward individuals living with HIV/AIDS remains widespread in the community -Highlights disparities in understanding HIV transmission pathways and protective strategies among the public. While awareness of sexual transmission is high, misconceptions about casual contact persist -Study highlights disparities in understanding HIV transmission pathways and protective strategies among the public. While awareness of sexual transmission is high, misconceptions about casual contact persist.

Author	Methodology	Key Features
Isha Jain	Literature review	• -PATH's evaluation highlights the effectiveness of (HIVST) programs in India, emphasizing increased self-care through higher testing rates and improved accessibility across demographic groups. • - Evaluation recognizes challenges like test accuracy and stigma, advocating for integrating HIVST into national health initiatives with supportive regulatory frameworks for maximum public health impact. • -Assesses the acceptability and efficacy of HIVST programs, underscoring their role in facilitating easier access to care and promoting proactive testing behaviors among the population.
Ankur Gupta-Wright, Ruanne V Barnabas, Heather Ingold, Phillippe Duneton, Ibrahim Abubakar	Review Article	• -WHO review analyzes lessons from HIV self-testing programs, noting their success in enhancing testing accessibility and enabling early diagnosis. • -Discusses challenges such as stigma and the importance of user-friendly testing kits, emphasizing their role in facilitating broader adoption of self-testing. • -Review advocates for policy changes to maximize the impact of HIV self-testing, particularly targeting vulnerable populations and aligning with global HIV goals.

Author	Methodology	Key Features
Maheswaran H et al.	Review article	-Article reviews the STAR Initiative's efforts to improve accessibility to HIV self-testing in southern Africa by integrating it with healthcare systems, garnering policy support, and fostering community engagement, particularly targeting hard-to-reach communities. - Assessment discusses critical issues such as linkage to care, ensuring quality assurance of tests, and addressing ethical considerations surrounding HIV self-testing implementation, providing insights for future public health strategies in the region.-
Babayemi O. Olakunde, Dawit Alemu, Donaldson F. Conserve, Muthoni Mathai, Margaret O	Cross sectional Survey	-The study polled young adults in informal urban settlements in Kenya to assess their awareness and willingness to use oral HIV self-test kits, providing insights into factors such as information availability, anonymity concerns, and perceived ease of use. -It identified variables affecting willingness to use self-test kits, emphasizing the importance of addressing these factors through targeted initiatives to increase awareness and acceptance of HIV self-testing among vulnerable populations.

Methodology & Objectives

Research Question

How has the status and performance of HIV/AIDS testing in India evolved from NFHS 4 to NFHS 5, and what are the key indicators influencing this trend along with the emerging role and acceptance of HIV self-test kits?

Study Design

This study employed a descriptive analysis of HIV indicators using NFHS-4 & 5 and a review of literature to analyze gaps from the comparative analysis. The approach involved a comprehensive review of existing literature and data sources, focusing on scope of HIV self test kits in India

Data Sources

- NFHS-4 & 5
- PubMed
- NCBI peer-reviewed journal articles
- NACO reports
- STAR initiative for HIV self test kit

Data collection methods

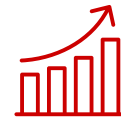
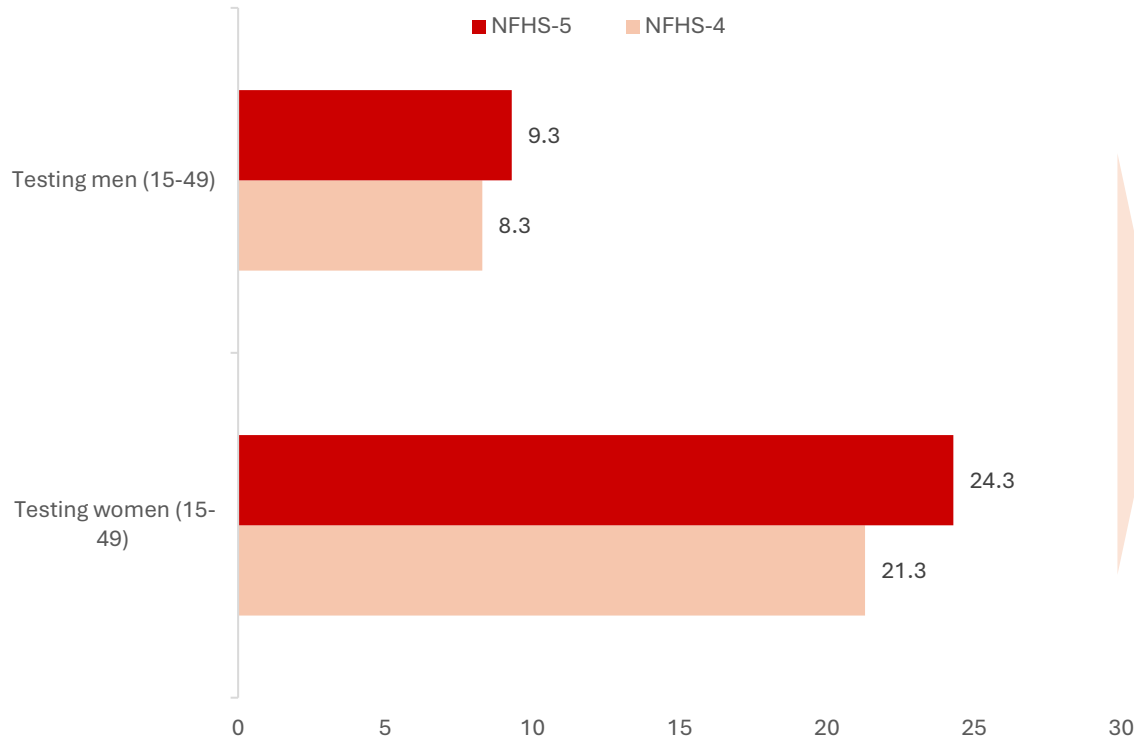
Secondary data collection was employed, gathering existing data from aforementioned sources to ensure a broad and detailed analysis of gaps in HIV Diagnostic prevalence and potential of HIV self test kits

Objectives

1. To compare and examine testing status of HIV/AIDS in India based on the NFHS 4 and NFHS 5 reports.
2. To identify if the performance of HIV/AIDS diagnostic rates in India has improved or declined over time.
3. To determine major indicators which contribute to the prevalence of HIV/AIDS testing in India.
4. To study the emerging scope and acceptability of HIV self-test kits in India.

Prevalence of HIV testing as per NFHS-4 & NFHS-5

Prevalence of HIV testing in India (%)



NFHS 4 and **5** reported improvements in HIV testing between these two consecutive surveys



In India, the percentage of people who had ever had an HIV test was 10% for men and 24% for women, both of which represented a little rise from NFHS-4



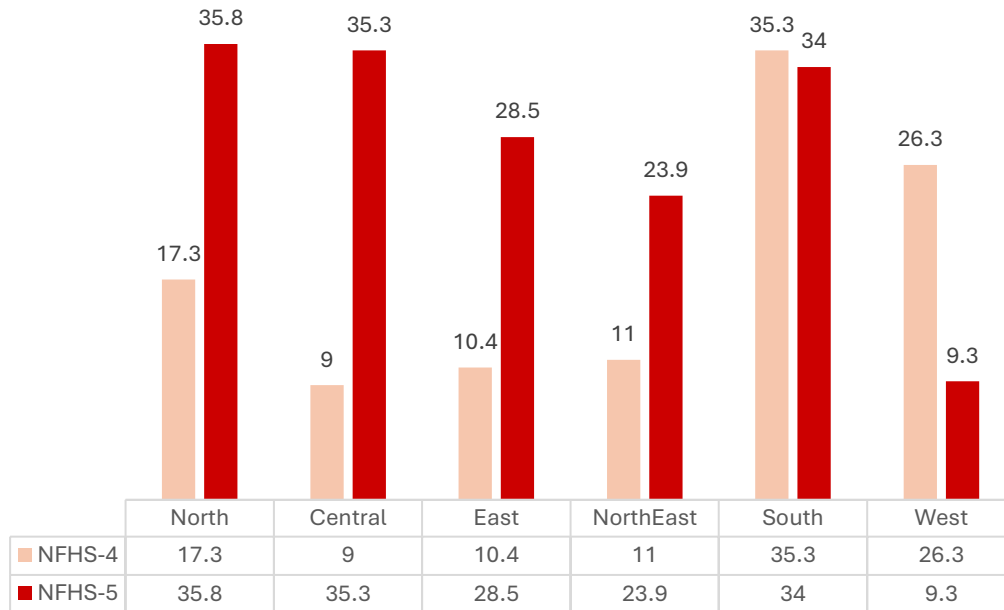
Multiple factors like knowledge, attitude, geographic constraints etc. can be responsible for the less increase in HIV testing from previous NFHS data

There was an increase in the HIV testing by **3 points** in case of women from NFHS-4 to NFHS-5 but HIV testing in men did not witness a sharp rise

Prevalence of HIV testing for different regions as per NFHS-4 & NFHS-5



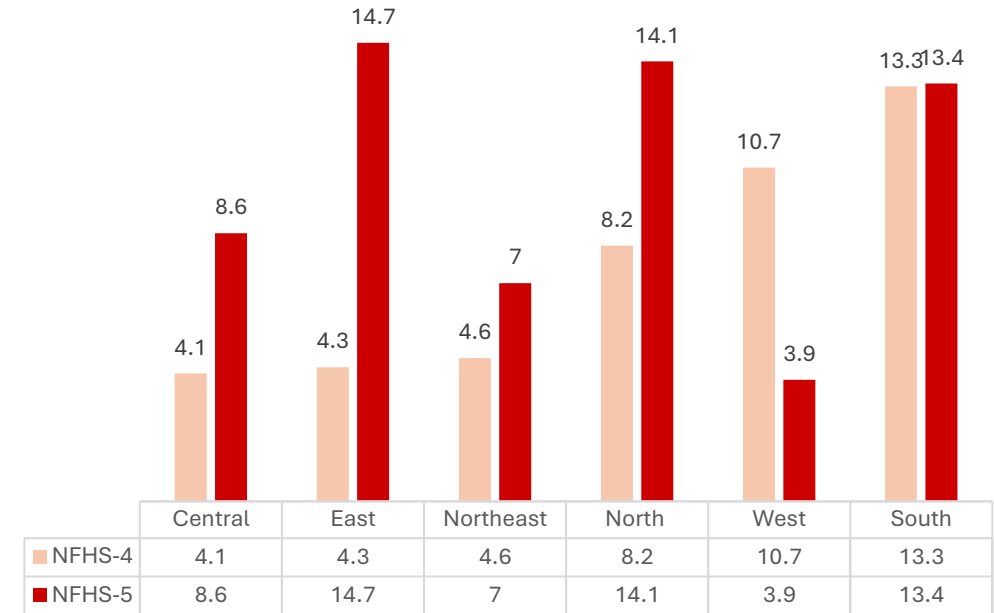
**Women tested for HIV in different geographies
(15-49 years)**



Testing of HIV in women aged 15-49 years increased in Central, North, East and Northeast India; however, in the West and South, a decline was observed.



**Men tested for HIV in different geographies
(15-49 years)**

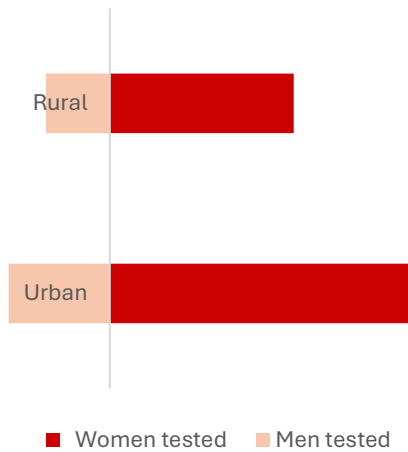


Trends in men HIV testing somehow follows similar trends like women HIV testing. As West and South India faced declining trends in HIV testing

Lack of certain testing facilities, awareness and booming stigma could be the reason behind the geographic variation of HIV testing prevalence of India

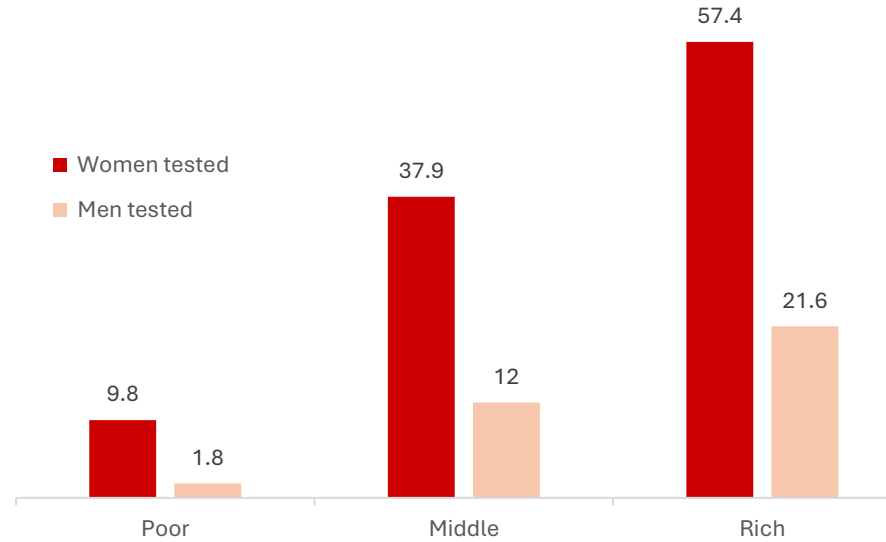
HIV testing prevalence as per NFHS-5 for residential areas, wealth indicator and education levels

Prevalence of HIV testing among men and women in rural and urban areas as per NFHS-5 (%)



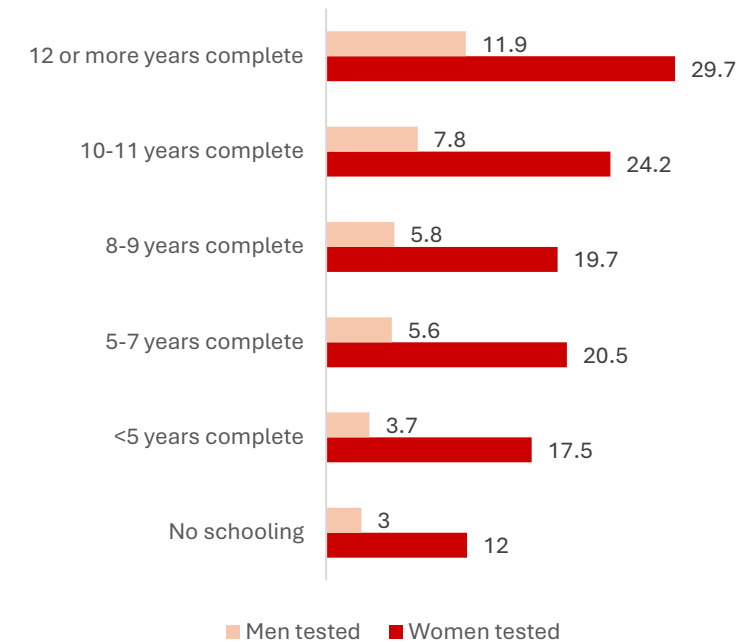
Overall HIV testing in India is reportedly high in urban residents in comparison with rural populations as per NFHS-5 data

Wealth indicator for men and women (15-49 years) NFHS-5 for HIV testing (%)



A clear correlation is highlighted from the above chart of NFHS-5 between wealth and the likelihood of being tested for HIV, with women consistently showing higher testing rates across all wealth categories compared to men

HIV testing prevalence for men and women with certain education levels NFHS-5 (%)



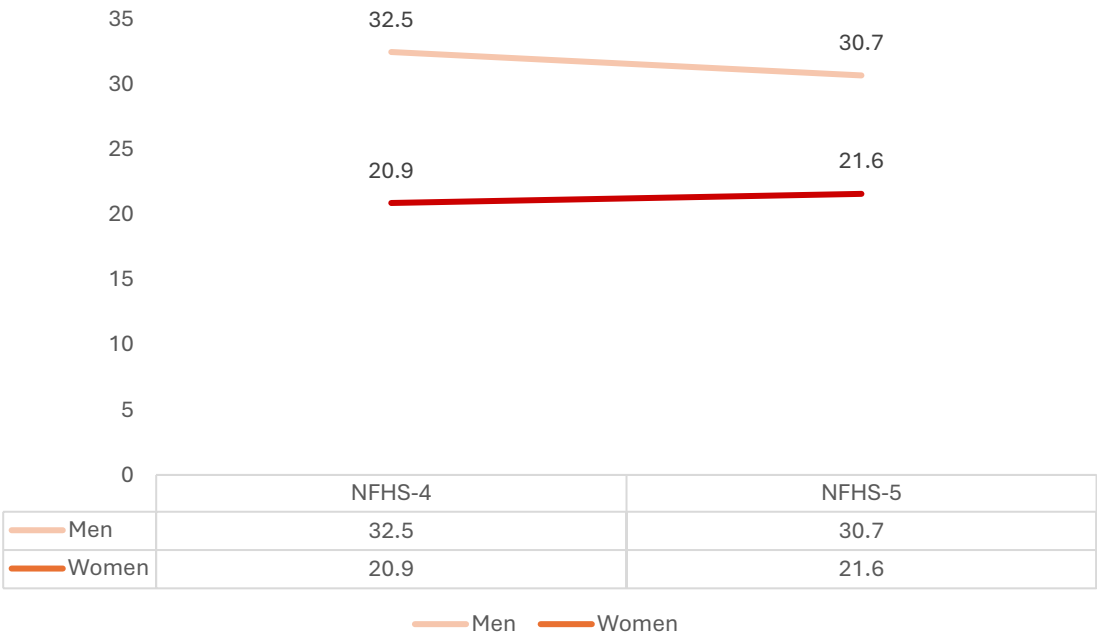
Women and men with higher levels of education are more likely to have been tested for HIV. For women, the percentage tested increases steadily with more years of schooling

Knowledge levels in men & women regarding HIV as per NFHS-4 & NFHS-5

Correct and Comprehensive knowledge about HIV/AIDS transmission and prevention had a significant positive relationship with the testing status for both genders as it enhances the odds of getting tested

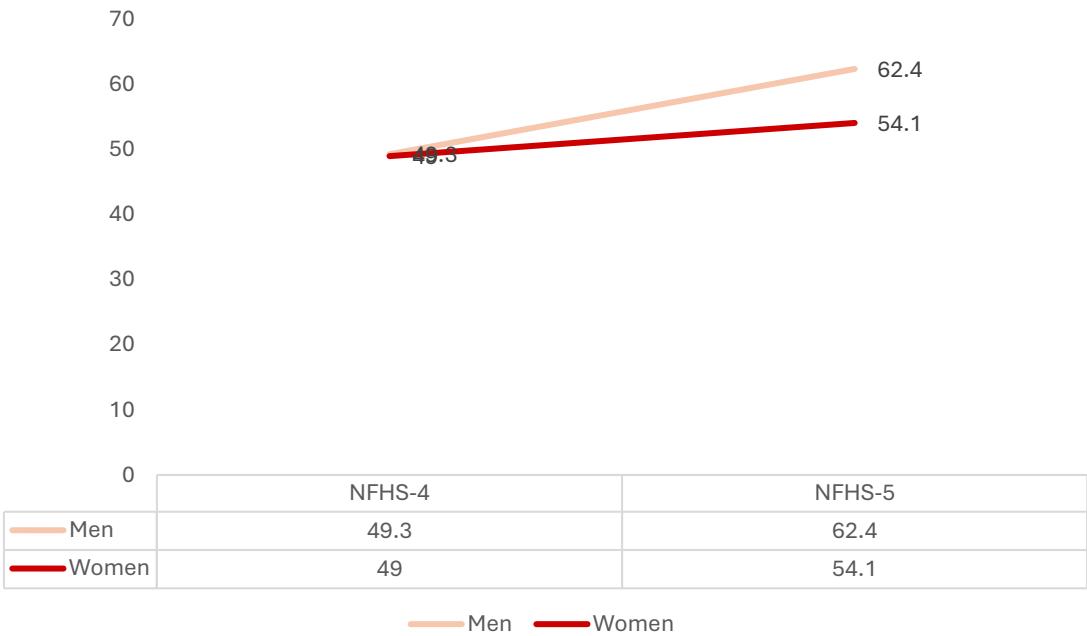


Comprehensive Knowledge around HIV/AIDS in men and women (%)



For men specifically, there has been a **downward trend** in comprehensive knowledge as compared to NFHS-4. In the NFHS-5, women's comprehensive knowledge grew by just **one point**.

Knowledge on MTCT around HIV/AIDS in men and women (%)



The percentage of women who knew of all three forms of HIV/AIDS transmission from mother to child was **62.4%**, compared to **54.1%** for males. Over time, **MTCT** knowledge showed a noticeable improvement

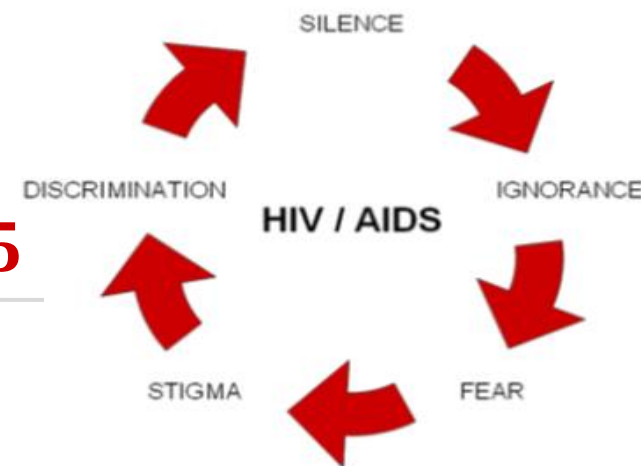
Awareness amongst male and female about HIV/AIDS as per NFHS-4 & NFHS-5

Percentage of men and women by their awareness towards HIV/AIDS as per NFHS 4 AND NFHS 5		
Gender	NFHS-4	NFHS-5
Knows about a place for HIV testing (%)		
Men	60.6	70.4
Women	45	56.7
Agrees that wife can refuse sex if husband has STD (%)		
Men	79.5	83.3
Women	77.5	87.2

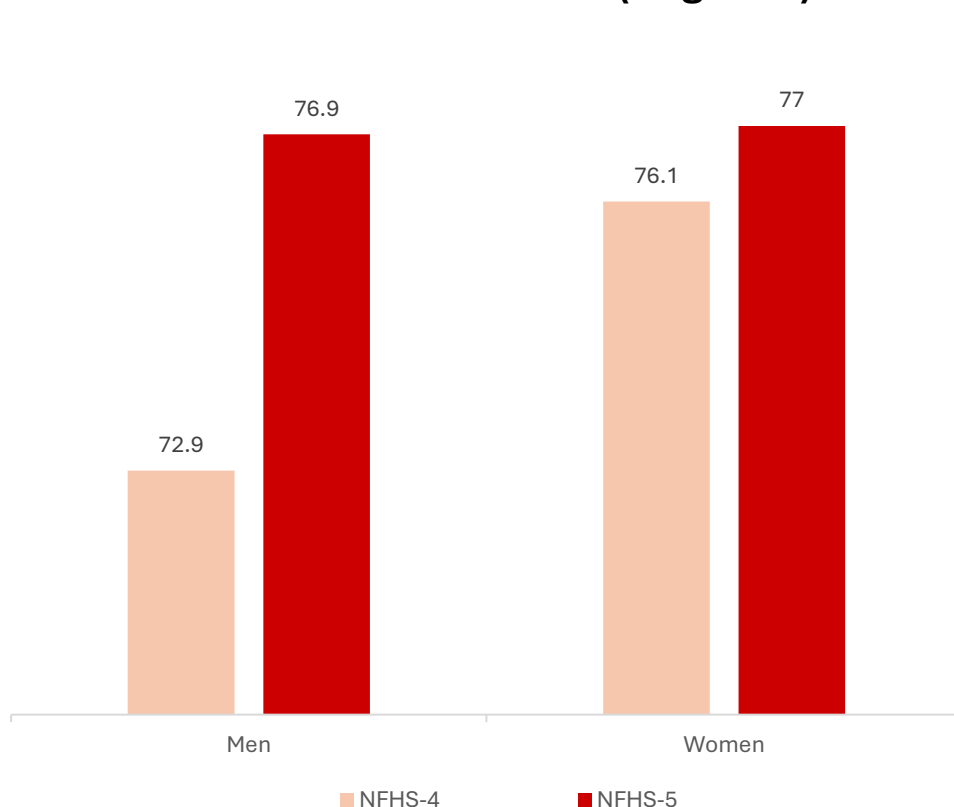


- The number of men and women who are aware of where to get an HIV test is **nearly equal**, and both are rising by **ten points**
- A higher proportion of women—from **77% to 87%**—agreed that if the partner has an STD, a woman has the right to refuse to have sex with him
- This approach to discussing sex with the husband is a sign of knowledge regarding the spread of HIV/AIDS

Stigma prevalence in Males & Females regarding PLHIV as per NFHS-4 & NFHS-5



Attitude towards PLHIV (Stigma%)



Data from India reveal internalized stigma and prevailing discriminatory attitudes as the prevalence of stigma was well pronounced among the study population since 77% of both men and women expressed stigma in the forms of social rejection of PLHIV and HIV status disclosure concerns



Higher stigma, had a significant negative correlation with testing status for both the sample groups as stigmatization in the forms of discrimination by family/friends, fear of disclosure of sexual orientation or sexual activity and resulting recrimination act as serious barriers to uptake of testing

HIV Self-Test kits

An HIV self-test kit is a tool that allows individuals to test themselves for HIV in the privacy of their own home or any other private setting. These kits typically include all necessary materials, such as a test device, a lancet for finger-pricking (for blood tests) or an oral swab (for saliva tests)

STAR HIVST Project- 3rd Phase

To advance HIV prevention and treatment, **PATH** studied the **acceptability and usability** of HIV self-testing (HIVST) in India

Community based, Private practitioners, workplace, PLHIV network-led, and virtual using **3** pre-qualified HIVST kits

Path took guidance from **NACO** for all necessary regulatory and ethical approvals to conduct the research



50 districts across 14 states

Willingness to Pay and Test Kit Preferences

The study found a strong preference for the convenience of oral fluid-based HIV test kits, with 93.7% favoring them over blood-based ones among key and high-risk populations.

User Satisfaction and Feasibility:

The study found high satisfaction with HIV self-testing kits, with 95% of users finding them easy to use, particularly in the PLHIV network 99.2% and workplace models 99.8%, except for PWIDs 89.6%.

Broad Acceptance of HIVST

The study identified strong acceptance and support for HIVST across various models and demographics

Conclusion

The **NFHS-4 and NFHS-5** data reveal both progress and areas needing improvement in HIV/AIDS testing in India. While testing rates have slightly increased overall, women have shown a more significant rise compared to men. Regions like Central, North, East, and Northeast India have improved, but West and South India have seen declines. Urban residents, wealthier individuals, and those with higher education are more likely to get tested, highlighting disparities in healthcare access and awareness. Comprehensive HIV/AIDS knowledge has improved among women but declined among men.

Despite programs to improve HIV diagnostic rates and the provision of free ART, the study emphasizes the need for better interventions to tackle HIV/AIDS. It highlights the potential of **HIV self-test kits** as a complementary tool, particularly in areas with limited conventional testing facilities, due to their confidentiality, ease of use, and ability to reduce discrimination. Future efforts should enhance education, reduce stigma, and improve testing accessibility, especially in rural and economically disadvantaged areas, to achieve more equitable health outcomes.

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THANK-YOU

