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Recent trends in HIV infection in India

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Abstract
The multi-dimensional nature of vulnerabilities that result from HIV and AIDS are at first glance difficult to comprehend and measure. At the global level, focus is increasing on the relationship between HIV and AIDS and other socio-economic issues. In India, the impact of HIV and AIDS is not very visible due to the low prevalence rate and large population size. In such a scenario, it is even more important to document both human and economic dimensions of HIV and AIDS. The additional financial burden imposed on households with PLHIVs is forcing them further into poverty. An important indicator is reduction in the aggregate income of the PLWHA households surveyed by around nine percent. This has a devastating impact considering that most of the sample households were from the low income group. In this paper an analysis is made to analyze present HIV status in the country.

Keywords: prevalence, PLHIVs, new infections, HIV, state, NACO

Introduction
The first AIDS case in India was detected in 1986 and since them HIV infection has been reported in all States and Union Territories. India had responded promptly to the HIV / AIDS challenge at the initial stage if self by setting up an AIDS Task Force under the Indian Council of Medical Research and a National AIDS committee headed by the Secretary, Ministry of Health & Family welfare. In 1990, a Medium Term plan (1990-1992) was launched in four states – Tamil Nadu, Maharashtra, West Bengal and Manipur and four metropolitan cities – Chennai, Kolkata, Mumbai and Delhi. The plan facilitated targeted IEC campaigns, establishment of surveillance system and safe blood supply.
The first phase at National AIDS control programme (NACP-I) was launched by the Government of India in 1992 to combat the Human Immune Deficiency Virus (HIV) infection and Acquired Immune-Deficiency Syndrome (AIDS) in the initial stage itself. However, with the evolving trends of the HIV/AIDS epidemic, the focus of the subsequent phases of the programme (NACP-II in 1999, NACP-III in 2007 and NACP-IV in 2012-2017) shifted from raising HIV/AIDS awareness to behaviour change, from a national response to a more decentralised response and to increasing involvement of NGOs and net works of people living with HIV (PLHIV).
A modified strategy has been designated based on the lesions learnt from the previous phases of the programme, and through this, the Department of AIDS Control (DAC) reiterates its commitment towards prevention and control of the disease in its fourth phase of NACP-(NACP-IV).NACP-IV aims to accelerate the process of reversal, further strengthening the epidemic response in India through a cautions and well-defined integration process. The main objectives of NACP-IV are to reduce new infections and provide comprehensive core and support to all PLHIV and treatment services to all those who require it.

Objectives of the Study
1. To study the spread of the HIV/AIDS at National Level.
2. To understand the concepts of 'infected' and 'affected' HIV/AIDS families.

Review of Literature
Olatunji Joshua Awoleye and Chris Thron (2015) analyze the determinants of HIV infection to enable improvements in HIV programming in Nigeria and other developing countries. Political, work environment, healthcare service, social network, lifestyle, and gender

determinants are predominant over others. As per the study the level of political commitment to HIV control is extremely low. More than 90 per cent of funding is from foreign sources. Stigmatization leads to delayed and inadequate treatment; and economic and social hardships for HIV-positive individuals. New infections are emerging at increasing rates among individuals engaging in sexual relationships such as men having sex with men (MSM) and female sex workers (FSW). HIV control in Nigeria is financially over dependent on foreign intervention. Political action is required to formulate and implement a human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS) policy that provides legal, social, and economic support for people infected and affected by HIV/AIDS. Measures are required to inform about scientific safeguards against infection, and to reduce HIV stigma among the general population and healthcare workers in particular. The author concludes that the most-at-risk populations require education, legal and economic support, and access to effective health care without negative repercussions, in order to minimize new infections.

Ramalingam Sekar and Manoharan Mythreyee (2016) considers that the management of HIV has now become simpler and cheaper than ever before, because of the increased access and wide availability of low-cost generic drugs and fixed dose combinations of drugs. According to authors the major limitations of ART is its inability to act on viral reservoirs and latently infected cells. Hence, the current theme of HIV research is mainly focused on finding ways for HIV cure to avoid drug toxicities and economic burden associated with lifelong ART.

Deepika Chowdary S. *et al* (2018) [3], make an assessment the knowledge, attitude, and behavior regarding HIV/AIDS among engineering students in and around Guntur, Andhra Pradesh. As per the study out of 400 students, 257 (64.2%) were males and 143 (35.7%) were females. Maximum students (97.2%) indicated they know about HIV/AIDS. Eighty-nine percent (89.7%) of the students responded that needle prick injury can transmit HIV infection, whereas 82.5% of the responders knew that HIV/AIDS affects immune systems. A total of 66.5% of individuals agreed that there is no cure for HIV/AIDS and 72.0% of individuals responded that HIV/AIDS cannot be transmitted through saliva and 20.5% of the students felt that it is necessary to isolate the infected individuals from general public. The author concludes that in addition to medical and para medical students, it is very important for the youth to be aware of HIV/AIDS and its social implications.

Sahana Jayaraman *et al*. (2019) [4] carried out a study with the objective to assess reasons for patients being lost-to-care (LTC) at an urban health centre (Philadelphia, PA, USA) that provides access to oral tenofovir/emtricitabine (TDF/FTC) as pre- exposure prophylaxis(PrEP) to patients ages 13-30 years through a drop-in model of care. The study reveals that of the 99 patients preliminarily identified as LTC, 19 completed the survey. Reason(s) for becoming LTC included: 47 per cent (9) relocation, 11per cent (2) transportation difficulties to/from clinic, 26per cent (5) financial/insurance problems, 5per cent (1) perceived medication side effects, 16per cent (3) trouble remembering to attend appointments regularly, 5per cent (1) difficulty with daily medication adherence, and 0 per cent social stigma. Furthermore, 21 per cent (4) remain at high-risk of HIV/STI acquisition after becoming LTC. The main study limitations are selection bias and small sample size, where the small sample size did not allow for statistical significance.

Table 1: Percentage of Adult HIV Prevalence in States and Union Territories (15-49 yrs), 2019

S. No	State/UT	Estimate	S. No	State/UT	Estimate
1	Andaman & Nicobar	0.14	19	Madhya Pradesh	0.1
2	Andhra Pradesh	0.69	20	Maharashtra	0.36
3	Arunachal Pradesh	0.06	21	Manipur	1.18
4	Assam	0.09	22	Meghalaya	0.54
5	Bihar	0.18	23	Mizoram	2.32
6	Chandigarh	0.19	24	Nagaland	1.45
7	Chhattisgarh	0.2	25	Odisha	0.14
8	Dadra & Nagar	0.23	26	Puducherry	0.35
9	Daman & Diu	0.17	27	Punjab	0.27
10	Delhi	0.41	28	Rajasthan	0.11
11	Goa	0.27	29	Sikkim	0.07
12	Gujarat	0.2	30	Tamil Nadu	0.23
13	Haryana	0.21	31	Telangana	0.49
14	Himachal Pradesh	0.12	32	Tripura	0.1
15	Jammu & Kashmir and Ladakh	0.06	33	Uttarakhand	0.13
16	Jharkhand	0.09	34	Uttar Pradesh	0.1
17	Karnataka	0.47	35	West Bengal	0.09
18	Kerala	0.08	India		0.22

Source: India Hiv Estimates 2019, ICMR – National Institute of Medical Statistics
Ministry of Health & Family Welfare, Government of India National AIDS Control Organization.

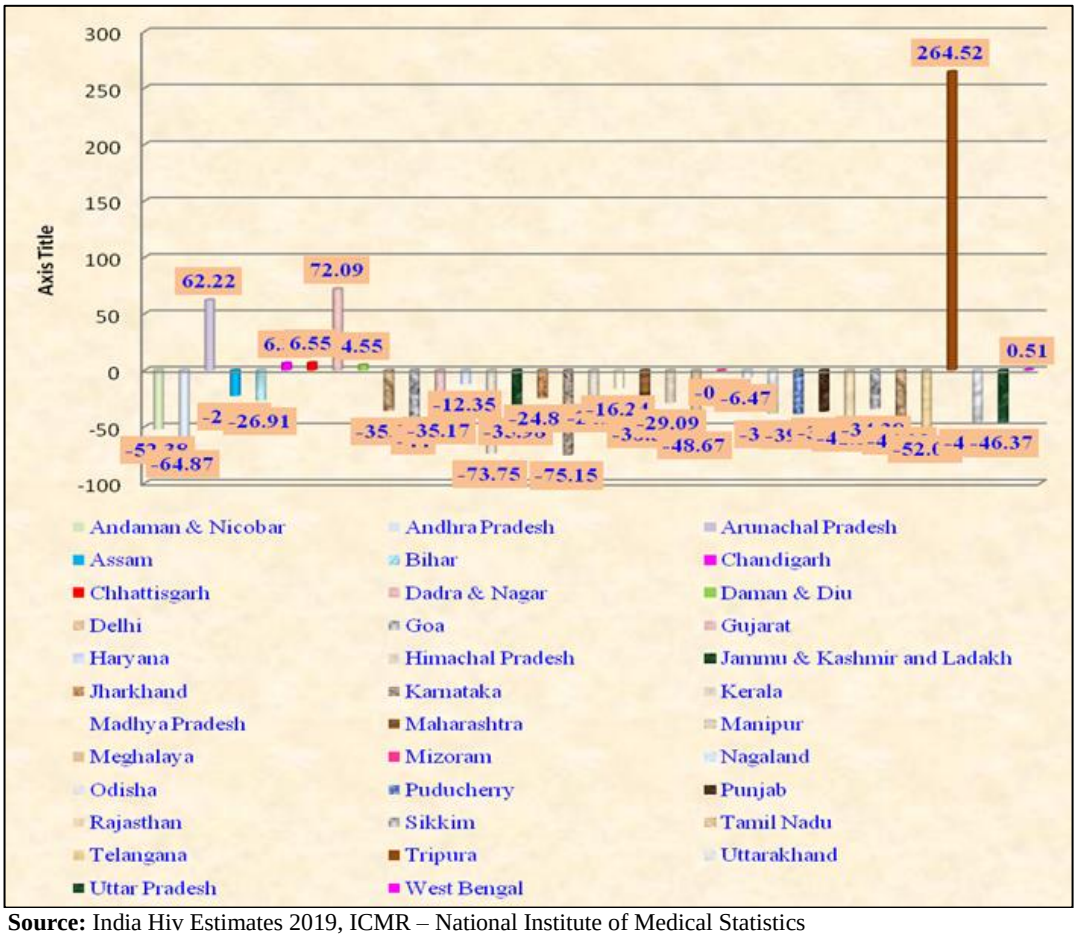
It is evident from table 1 that the percentage of adult prevalence in the age group of 15 to 49 years is highest in Mizoram (2.32 per cent). It is followed by Nagaland and Manipur in second (1.45 per cent) and third (1.18 per cent) places respectively. The state of Andhra Pradesh occupies fourth place with 0.69 per cent of prevalence of HIV among the adults in India. Lowest per cent of 0.06 per cent of prevalence of HIV is registered in the Union Territories of Jammu & Kashmir and Ladakh and also in Arunachal Pradesh. At national level the HIV prevalence stood at 0.22 per cent.

Table 2: Total number of PLHIV Living in States and Union Territories-2019 (In thousands)

S. No	State/UT	Estimate	S. No	State/UT	Estimate
1	Andaman & Nicobar	0.49	19	Madhya Pradesh	59.3
2	Andhra Pradesh	313.73	20	Maharashtra	396.35
3	Arunachal Pradesh	0.66	21	Manipur	28.56
4	Assam	21.22	22	Meghalaya	11.28
5	Bihar	134.49	23	Mizoram	20.05
6	Chandigarh	2.36	24	Nagaland	22.55
7	Chhattisgarh	42.52	25	Odisha	49.15
8	Dadra & Nagar	0.75	26	Puducherry	4.77
9	Daman & Diu	0.47	27	Punjab	65.83
10	Delhi	67.94	28	Rajasthan	62.98
11	Goa	4.53	29	Sikkim	0.35
12	Gujarat	103.51	30	Tamil Nadu	154.61
13	Haryana	44.76	31	Telangana	157.51
14	Himachal Pradesh	7.05	32	Tripura	2.86
15	Jammu & Kashmir and Ladakh	6.04	33	Uttarakhand	10.96
16	Jharkhand	22.75	34	Uttar Pradesh	160.6
17	Karnataka	269.47	35	West Bengal	74.2
18	Kerala	24.21	India		2,348.86

Source: India Hiv Estimates 2019, ICMR – National Institute of Medical Statistics Ministry of Health & Family Welfare, Government of India National AIDS Control Organization.

It can be inferred from table 2 that the two-thirds of PLHIVs were living in 7 states i.e. Maharashtra. Andhra Pradesh, Karnataka, Uttar Pradesh, Telangana, Tamil Nadu and Bihar. As per the NACO estimates among the total number PLHIVs highest number is registered in Maharashtra with 396. 35 thousands. It is followed by Andhra Pradesh with 313. 73 thousand PLHIVs, which in turn is followed by Karnataka with 269.47 thousands of PLHIVs. Nearly 40 per cent of PLHIVs were living in South Indian States/ Union Territories of Andhra Pradesh, Karnataka, Tamil Nadu, Kerala, Telangana and Puducherry. The share of these 17 States/Union Territories in total PLHIVs of India is less than 5.35 per cent. In all these states the PLHIVs share is less than 1 per cent of total PLHIVs at national level. Lowest per cent of PLHIVs is registered in Sikkim (0.01 per cent) and Daman &Diu (0.02 Per cent).



Source: India Hiv Estimates 2019, ICMR – National Institute of Medical Statistics Ministry of Health & Family Welfare, Government of India National AIDS Control Organization.

Fig 1: State/Union Territory Wise Total Number of Annual New HIV Infections-2019 (in thousands)

Figure 1 show that in terms of actual figures of new HIV infections Maharashtra registered highest number (8.54 thousands) of new cases. It is followed by Bihar and Uttar Pradesh with 8.04 and 6.72 thousands of cases in second and third places respectively. In these three states together one-third (33.66 per cent) new cases were registered. The Telugu states of Andhra Pradesh and Telangana with 2.82 thousands of new cases stood in ninth and tenth places respectively. In 3 States/Union Territories lowest number of new cases i.e. 0.02 thousand cases were registered in 2019. The percentage of change in new annual cases in 28 States/ Union Territories is showing declining growth of -75.15 per cent to -0.51 per cent. On the other hand the percentage of change in new annual cases is showing upward trends in 7 States/ Union Territories i.e. Tripura, Dadra &Nagar, Arunachal Pradesh, Chhattisgarh, Chandigarh, Daman & Diu and West Bengal. Among these highest positive percentage of change is registered in Tripura (9264.52 per cent). In this regard it is followed by Dadra & Nagar, Arunachal Pradesh with 72.09 per cent and 62.22 per cent respectively. Whereas, in Karnataka highest (-75.15) negative percentage of change in new annual cases is registered. It is followed by Himachal Pradesh (-73.75 per cent) and Andhra Pradesh (-64.87 per cent).

Conclusion

In the erstwhile high prevalence States of Andhra Pradesh, Karnataka, Maharashtra, Tamil Nadu and Telangana, the decline in AIDS-related deaths has ranged from 70% to 80% (between 2010 and 2019), which has been a major reason for the decline seen at the national level. Meghalaya, Arunachal Pradesh, Tripura, Jammu and Kashmir, Jharkhand, Assam, Sikkim, Bihar and Delhi have exhibited a stable to rising trend in AIDS-related deaths. This is an area of concern and needs exploration and appropriate programmatic response. The status of HIV/AIDS epidemic in the States of north-eastern India is indeed alarming. Except for Manipur, the HIV prevalence in these States has shown a stable to rising trend due to a relatively higher number of annual new HIV infections. Annual new HIV infections have, in fact, increased in Arunachal Pradesh and Tripura while being almost stable in Mizoram and Nagaland during the study period.

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