Knowledge, Prevalence and Socioeconomic Impacts of HIV/AIDS in India

Knowledge, Prevalence and Socioeconomic Impacts of HIV/AIDS in India

Dissertation submitted in partial fulfillment of the requirements for the Degree of Master of Philosophy in Applied Economics of the Jawaharlal Nehru University

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M Phil Programme in Applied Economics
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CENTRE FOR DEVELOPMENT STUDIES
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I hereby affirm that the work for the dissertation, ***'Knowledge, Prevalence and Socioeconomic Impacts of HIV/AIDS in India'***, being submitted as part of the requirements of the M.Phil Programme in Applied Economics of the Jawaharlal Nehru University, was carried out entirely by myself. I also affirm that it was not part of any other programme of study and has not been submitted to any other University for the award of any Degree.

June, 2011

Saravana Kumar R.

Certified that this study is a bona fide work of ***Saravanakumar R.***, carried out under our supervision at the Centre for Development Studies

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Dedicated to the HIV infected People who are dead and now living in search of consolations that are unattainable as of now...

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Saravanakumar R.

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Abbreviations

ANC	Antenatal Clinic
AIDS	Acquired Immuno Deficiency Syndrome
ART	Antiretroviral Therapy/treatment
CSW	Commercial Sex Worker
FSW	Female Sex Worker
HIV	Human Immunodeficiency Virus
IDU	Injecting Drug User
IIPS	International Institute for Population Sciences
MoHFW	Ministry of Health and Family Welfare
MSM	Men who have sex with men
MSW	Male Sex Worker
NACO	National AIDS Control Organization
NFHS	National Family Health Survey
NGO	Non-Governmental Organizations
PLWHA	People Living with HIV/AIDS
SHG	Self Help Group
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
UNAIDS	United Nations Joint Program on HIV/AIDS
UNGASS	United Nations General Assembly Special Session on HIV/AIDS
WHO	World Health Organization

Abstract of the Dissertation

Knowledge, Prevalence and Socioeconomic Impacts of HIV/AIDS in India

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HIV and its consequence, AIDS certainly count among the least epidemiological disasters facing today's world. It is one of the most dangerous diseases that humankind has ever experienced. Many researchers and policy makers believe that in the absence of medicine to cure this disease, the awareness and knowledge about HIV/AIDS is pre-requisite to prevent this disease. It is also imperative to curtail the stigma and discrimination related to this disease. Therefore, it is necessary to have proper awareness and knowledge regarding HIV/AIDS in the society. It is also important to understand the patterns and distribution of HIV/AIDS in India to identify the high risk populations and to implement the appropriate policies. Further HIV/AIDS has tremendous impacts at both micro and macro level in the society. Little is known on the knowledge, prevalence and socio economic impacts of HIV/AIDS in India in a comparative perspective. This study attempts to fill this research gap. With reference to knowledge, prevalence we have used information from the NFHS-3. Analysis was carried only for the high prevalence states. Multivariate analysis was used to estimate the factors associated with awareness, knowledge, and prevalence of this disease. It was observed that in all the states, men are highly aware of the HIV/AIDS than women. People belonging to different categories such as illiterate, poor, employed, STs & SCs, living in rural, Hindus, adult and above forty aged group, and those who have more than one life time partners have low awareness and low level of knowledge of HIV/AIDS than their counterparts. From the analysis of the patterns and distribution of HIV prevalence, it is observed that HIV prevalence have an inverse relationship with educational attainment and an inconsistent relationship with the wealth index. In both the categories of educational attainment and wealth index, the HIV prevalence among women is higher than that of men in all the states. It is observed that in all the states the HIV prevalence is higher among the SCs. Logistic regression technique was used to estimate the strength and the association between the potential risk factors and the HIV infection and found only three variables are statistically significant. They are, age of the person, the person had Sexually Transmitted Disease during the last twelve months and total number of life time partners. In order to examine the socioeconomic impacts of HIV/AIDS at household level, this study relied solely on an in-depth household survey at the Nanguneri block in Tirunelveli district, Tamil Nadu 75 households were chosen from each categories of with HIV and without HIV infection. Interviews were conducted to compare the economic status of both households categories. From the analyses, it was observed that the average monthly income and average monthly per capita income of non-infected households is much higher than the infected households. A similar pattern is also found in the case of their monthly household expenditures. The HIV infected households are forced to spend more on food in order to retain/maintain their life than the non infected households. The non- infected households are therefore able to enjoy a better savings out of their income. They have their savings in the form of bank deposits, RDs and SHGs. But the SHGs are the only source of saving for the HIV infected households. They also depend on widow pension and other helps from the NGOs.

Chapter I

Introduction

1.1 Background of the Study

Human Immune Virus (HIV hereafter)/Acquired Immune Deficiency Syndrome (AIDS hereafter) was an unknown disease until thirty years ago. Over the years, it began to spread all over the world, and is now considered to be the worst and deadliest disease that humankind has ever experienced (Johanson, 2007). The absence of curative drugs against HIV/AIDS is the biggest threat to mankind. HIV is a virus that attacks the body's immune system making it unable to fight infections. The National Institute of Health (NIH) defines AIDS as *"the most serious stage of HIV infection that results from the destruction of the infected person's immune system"* (Johanson, 2007). The Millennium Development Goals[1] (MDGs) aim to encourage economic and social development of any country in the world. The MDGs are eight in number, each goal having one or more targets. There are a total of 18 such targets, which are classified on the basis of the following themes: overcoming poverty and hunger, achieving universal primary education and gender equality, reducing infant and maternal mortality, fighting HIV/AIDS and other communicable diseases like Malaria and Tuberculosis (TB), and ensuring safe drinking water to all.

The United Nations Development Programme (UNDP) has set 2015 as the target for achieving the MDGs. However, it seems that the seventh target will "have halted by 2015 and *begun to reverse the spread of HIV/AIDS"*. It is estimated that there will be around 39.4 million People Living with HIV/AIDS (PLWHA hereafter) at the global level by the end of 2004, with 90 per cent in the middle and low income countries. The main factor that would contribute to this is poor knowledge about the prevention and mode of transmission of this disease (Aggar

[1]The Millennium Summit held at New York in September 2000. Eight international development goals have agreed by 192 United Nations member states and at least 23 international organizations to achieve by the year 2015.

et al., 2006). HIV and its consequences, AIDS certainly count among the least tractable epidemiological disasters facing today's world.

HIV also affects approximately 5 lakh infants every year all over the world and it is responsible for 1,800 new infections in children per day (Surjeshe et al., 2008). Surjeshe and Maniar (2008) mention that Mother to Child Transmission (MTCT) is the importance source for HIV infection for children. This is true only if the mother is affected by HIV/AIDS. The proportion of the HIV affected women has been increasing over the years. This has resulted in the increased number of children living with AIDS. The chances of child getting infected by the mother or a pregnant woman infecting her unborn child is identified to be around 25 - 30 per cent (IFAD, 2003).

Several studies[2] continue to be conducted to understand the consequences of HIV/AIDS on the agricultural sector. If a family member is affected by HIV/AIDS, farm households have to allocate both its available resources and the time of other household members to care for the victim. This epidemic will increase the nutritional demand of the infected person. It would affect the food security of other members of the household. HIV/AIDS related deaths result in the loss of agricultural knowledge and also the loss of the labour days in farm households. Among the economic consequences associated with HIV/AIDS are escalating medical expenses, loss of labour days, and a marked drop in productivity (Ghosh, 2002).

1.2 Global HIV/AIDS at a Glance

Table 1.1 shows region-wise HIV/AIDS statistics for the year 2001 and 2008. At the global level, PLWHA have increased from 28.6 million in 2001 to 33.3 million in 2009. The proportion of women living with HIV has increased from 19 per cent in 2000 to 35 per cent in 2007. In all regions, PLWHA have declined during the

[2] FAO, (2003); Jayne et al (2005); Jayne et al (2004); and Loevinsohn et al (2003) are few to mention.

period 2001-2009, though not in Caribbean. The rate of increase of PLWHA is very high in the regions of Sub-Saharan Africa and South and South East Asia. At end of 2009, Sub-Saharan Africa had 68 per cent of the global population living with AIDS. In Sub-Saharan Africa, the number of women living with HIV/AIDS is higher than that of men living with HIV.

Table: 1.1 Regional HIV and AIDS Statistics, 2001 and 2009

Region	Adults and children living with AIDS (in millions)		per cent Adult prevalence[3]		AIDS related deaths among adults and children	
	2001	2009	2001	2009	2001	2009
Sub-Saharan Africa	20.3	22.5	5.9	5.0	14,00000	13,00000
North Africa & Middle East	0.01	0.04	0.1	0.2	8,300	2,4000
South and South-East Asia	3.8	4.1	0.4	0.3	23,0000	26,0000
East Asia	0.03	0.07	<0.1	0.1	15,000	36,000
Caribbean	0.02	0.02	1.1	1.0	19,000	12,000
Eastern Europe & Central Asia	0.07	1.4	0.4	0.8	18,000	76,000
North America	1.2	1.5	0.4	0.5	30,000	26,000
Total	28.6	33.3	0.8	0.8	18,00,000	18,00,000

Source: UNAIDS 2010

Sub-Saharan Africa has the largest number of HIV/AIDS burden followed by South and South-East Asia. Sub-Saharan Africa has around 67.5 per cent world's PLWHA and 72 per cent of AIDS deaths in 2009. On the other hand, South and South-East Asia have 14 per cent of the world's PLWHA and 12 per cent of the AIDS related deaths. In 2008, of the total number of PLWHA, 60 per cent belonged to Asia, including 3.5 lakh who had become newly infected in 2007. South Asia has the second largest number of HIV/AIDS infected people and one of the fastest infection rates in the world after Sub- Saharan Africa (UNAIDS, 2009). The first HIV/AIDS case in India was discovered in the year 1986, after which HIV/AIDS cases in India were detected in all the Union Territories and states of our country.

[3] Adult prevalence refers to the prevalence among the age between (15-49 Years)

Table: 1.2 Estimated People Living with HIV in South and South-East Asia in 2001 and 2009

Countries	Adults and Children (in millions)		Number of Women	
	2001	2009	2001	2009
Cambodia	0.09	0.06	51,000	35,000
India	2.50	2.40	8,80,000	8,70,000
Indonesia	0.01	0.31	3,200	8,8000
Malaysia	0.06	0.10	6,100	11,000
Myanmar	0.25	0.24	67,000	81,000
Nepal	0.06	0.06	19,000	20,000
Pakistan	0.03	0.09	11,000	28,000
Thailand	0.60	0.53	2,20,000	2,10,000
Vietnam	0.10	0.28	39,000	81,000
Total	3.80	4.10	13,00,000	14,00,000

Source: UNAIDS (2010)

The total number of PLWHA (Adults and Children, Women) in South and South-East Asia has increased during the period 2001 to 2009. In South-East Asia, India has the largest HIV/AIDS burden followed by Thailand. Other countries with large numbers of people living with HIV include China (700,000), Thailand (610,000) and Vietnam (290,000) [www.avert.org as on august, 2010]. Indonesia, Malaysia, and Vietnam have experienced a sharp increase in the overall number of PLWHA. The rate of increase of PLWHA in Indonesia is much greater than that of the other two countries. India remains as the country severely affected by the HIV, accounting for 65.7 per cent of the South and South-East Asian population living with HIV in 2001, which, however, got decreased to 58.5 per cent by 2009. Within this, a gender aspect reveals that the share of Indian women living with HIV is higher than that of any other country in that region (table 1.2) and yet it also got decreased from 67.6 per cent in 2001 to around 63 per cent in 2009.

1.3 HIV Epidemic in India

Globally, India's rank is second in terms of HIV prevalence, but it is the first in terms of absolute numbers. The first AIDS case was discovered in India among female Commercial Sex Workers (CSW) in Tamil Nadu in 1986 and since then there has been a rapid spread of the epidemic in different parts of the country. At present, India has the world's second largest number of PLWHA, estimated to be of more than 5.0 million in 2006. Most of them are adults in the productive age group (15-49) (UNADIS, 2008). Until 2005, it was thought that, India is home to

around 5.2 million people living with HIV - more than any other country in the world (Pandey, 2006). However, it is believed that the number of PLWHA in the country declined from 2.73 million in 2002 to 2.7 million in 2008. Of this, women account for 39 per cent of PLWHA, while children account for 3.8 per cent (UNGASS, 2010). Out of the total PLWHA in the country, 60 per cent of the HIV burden is in the six high prevalence states[4]. Due to this, the number of people living with HIV/AIDS in Asia is now thought to be substantially lower than the figure published by UNAIDS in late 2006 (UNAIDS, 2007). HIV transmission in developing countries is largely driven by heterosexual intercourse. In India, it is estimated that nearly 87.1 per cent of the HIV transmission occurs only through heterosexual relations. , The HIV transmission from parent to child is found to be 5.4 per cent. Through injection drug users it is known to be of 1.6 per cent. 1.5 per cent is by homosexual relations, 1 per cent is through blood and blood products and 3.3 per cent is by other various means (UNGASS, 2010).

The statistics of the six high HIV prevalence states report that the HIV prevalence among women attending Antenatal Clinics (ANCs) is more than one per cent and it is more than 5 per cent among the STD (Sexual Transmitted Diseases) clinic patients. Within the high prevalence states, the southern segments alone accounts for 85 per cent of the HIV infections transmitted through heterosexual intercourse. But IDU is the main mode of HIV transmission in the Northern states. If the current trends continue, India could face many problems in the near future: a) by 2033, HIV could account for 17 per cent all deaths and 40 per cent of deaths from infectious diseases, b) there could be 11 million deaths due to HIV between 2001 and 2026, and c) it could also slowdown the poverty reduction goals by 23 per cent every year between 2003 and 2015 (CIIGRN, 2006).

The current estimation of HIV/AIDS in India is around 4.7 million. National adult HIV prevalence is still under one per cent in most of the regions of the country. Although national adult HIV prevalence in India is below 1 per cent, some states have an estimated prevalence well above this level see (Table 1.3).

[4] The National AIDS Control Organization (NACO) has identified six states as the high prevalence states in India. They are Andhra Pradesh, Karnataka, Maharashtra, Manipur, Nagaland and Tamil Nadu.

Table 1.3 shows HIV prevalence per 1000 population for 15 states in India. In four states, the HIV prevalence rate is higher than the national level includes Andhra Pradesh, Karnataka, Maharashtra and Manipur. In total, the HIV prevalence rate varies from 0.8 in Rajasthan to 11.3 in Manipur. Though 90 per cent of the newly infected people in India acquired it through unprotected sex the mode of HIV transmission in all over India is not the same. It differs from states to state. In the southern states the mode of transmission is unprotected sex, while in northeastern states, the widespread use of contaminated injecting equipment by two or more people on the same occasion is the main mode of HIV transmission (Becker et al, 2007).

Table: 1.3 State Wise Weighted HIV Prevalence Rate from the 2005 - 2006 India National Family Health Survey -III

State	HIV Prevalence Rate[5]		
	Men	Women	Total
Rajasthan	0.0	1.6	0.8
Chhattisgarh	0.0	1.7	0.8
Uttar Pradesh	1.3	0.5	0.9
Haryana	2.1	0.0	1.0
Jharkhand	2.3	0.0	1.1
Delhi	0.0	2.2	1.1
Gujarat	1.8	1.7	1.8
West Bengal	3.7	0.0	1.8
Orissa	3.0	1.3	2.1
Punjab	4.4	0.0	2.3
Assam	1.8	3.3	2.6
Jammu and Kashmir	4.0	1.8	2.9
Tamil Nadu*	2.4	3.7	3.1
Himachal Pradesh	2.3	3.8	3.1
Madhya Pradesh	3.3	3.6	3.4
Goa	7.5	1.7	4.5
India	5.6	3.6	4.6
Karnataka*	8.2	5.6	6.8
Maharashtra*	9.0	5.6	7.3
Andhra Pradesh*	9.5	6.2	7.8
Manipur*	15.5	7.6	11.3

Source: - National Family Health Survey 2005 - 06, India

[5] HIV prevalence rate is calculated for per thousands population.

The spread of AIDS cases are uneven in India. The southern parts of the country are more affected in comparison to other parts. In Indian society, women are more susceptible to HIV/AIDS disease, as they tend to be less educated, overworked, underpaid, and financially dependent on men. Hence, women lack the negotiation power with men and are deprived of their 'decision makings' on matters related to the use of any protective measures. Sex workers in Chennai and Mumbai accounted for the initial HIV/AIDS cases, went on to spread from high risk groups[6] to the general population. By 1997, Tamil Nadu, Maharashtra and Manipur together reported for 77 per cent of the AIDS cases in India (Ramasubban, 1998). The four high prevalence states of South India (Andhra Pradesh, Maharashtra, Karnataka and Tamil Nadu) account for 55 per cent of all HIV infection in India (NACO, 2010). If we want to prevent or arrest the HIV infection, it is necessary to get a good understanding about the prevalence of HIV/AIDS. Instead of looking into all states, it would be better if we considered the high prevalence states. So, this study is restricted to only five[7] high prevalence states, namely, Andhra Pradesh, Karnataka, Maharashtra, Manipur and Tamil Nadu.

1.4 HIV/AIDS in High Prevalence States Based on HIV Sentinel Surveillance

NACO initiated the HIV Sentinel Surveillance Survey (SSS)[8] in late 1998 to estimate the HIV/AIDS prevalence in all the States and Union Territories of India. This comes under the Ministry of Health and Family Welfare (MOHFW). The SSS estimates the HIV/AIDS prevalence in the country on the basis of the data collected from some selected sites that are spread across the country. This

[6] The risk groups are Female Sex Workers, Injecting Drug Users and Men who have Sex with Men.

[7] Nagaland has not been included in this study because NFHS-III has not collected data regarding HIV due to the then local agitations.

[8] Sentinel Surveillance survey is the annual survey conducted by India to monitor the outcomes and impact of national efforts to curtail the spread of the infection and to monitor trends in HIV prevalence amongst various population groups. It involves conducting cross-sectional sero-surveillance surveys of selected populations drawn from relevant facilities. It is aimed at providing data on the dynamics of the HIV and AIDS epidemic at the national and state levels. Among many other activities, the HSS in India primarily generate relevant data, conducts estimations and projections; determine the various types of input required for strengthening, preventing and controlling activities for different population groups in different geographical regions.

would include different sites such as Sexually Transmitted Disease (STD) clinics, Ante-Natal Clinics (ANC), Injection Drug Users (IDU) clinics and sites for Men having Sex with Men (MSM). In order to strengthen the sample size of the SSS, the number the sites were increased from 180 in 1998/99 to 232 in 2000; and from 320 in 2001 to 1,134 in 2007. Currently, India is the only country with the biggest HIV sentinel surveillance programme in the world. Most of these surveillance sites are concentrated in urban areas, though a certain number of rural sites are also sampled to get an idea of HIV prevalence in rural areas.

In 2007, the HIV burden of the country was estimated not based on the sentinel surveillance data but by conducting household survey (NFHS-3). It was also used to calibrate the HIV prevalence obtained through sentinel surveillance. This change and modifications in the data compilation was felt necessary due to the problems of estimation of the HIV burden prevailed in the SSS method[9]. As mentioned earlier, Sentinel Surveillance for HIV is conducted only among specified high risk groups such as Female Sex Workers (SWs), (MSM) and (IDUs). It also looks at the low risk group of pregnant women seeking antenatal care (ANC). Surveillance 'sites' from where blood samples are obtained for each group. Information on pregnant women was obtained from antenatal clinics in government hospitals. Government hospitals are also the sites from which samples from people with sexually transmitted diseases can be obtained. In the case of high risk groups, the sites are the 'drop-in' centers of non-governmental organizations (NGOs) providing services for these groups.

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[9] The SSS method suffered from the problems of both the overestimation and underestimation of the HIV burdens. Possibility of overestimation problem would occurred if the blood sample are drawn more from the sites of FSW, MSM, and IDUs as the probability of HIV infected cased would be very high in all these sites. On the reverse, if the blood samples are drawn more from the ANCs and Rural sites the probability of HIV infected cases would be obviously less. Such problems are solved by the NFHS - 3 as the blood samples are randomly drawn from their household survey. Nevertheless NFHS - 3 is also not fully free from the possibility of underestimation as the samples are 'controlled' more by the respondents covered by the survey.

Table: 1.4 HIV Prevalence (per 1000 population) for Five States Based on ANC and STD Sites in India (2000 -2008)

Names of Sites	2000	2001	2002	2003	2004	2005	2006	2007	2008
Andhra Pradesh									
ANC	2.0	1.5	1.25	1.25	1.63	1.75	1.26	1.0	1.0
STD	30.0	26.6	21.65	21.47	16.4	22.8	24.4	17.2	NA
Karnataka									
ANC	1.25	1.13	1.63	1.25	1.25	1.0	1.0	0.5	0.75
STD	15.2	16.4	13.55	10.4	12.0	13.6	7.57	8.4	8.33
Maharashtra									
ANC	1.12	1.38	1.0	0.75	0.75	1.0	0.75	0.5	0.5
STD	18.4	10.04	7.82	12.0	10.8	12.8	10.0	11.62	11.69
Manipur									
ANC	1.25	1.54	1.0	1.0	1.38	1.0	1.25	0.75	0.5
STD	12.1	8.84	9.6	13.0	7.2	12.2	4.8	4.08	3.15
Tamil Nadu									
ANC	1.0	1.13	0.88	0.5	0.67	0.5	0.25	0.25	0.25
STD	16.8	9.13	14.8	9.64	8.4	9.2	8.0	8.0	NA

Source: Various Sentinel Surveillance Reports
Note: ANC-Ante Natal Clinic, STD-Sexually Transmitted Disease Clinic

Based on the HIV Sentinel Surveillance Report, for both urban and rural sites, Table 1.4 shows the HIV prevalence rate in the five high prevalence states of India. According to both sites (ANC and STD), HIV prevalence is very high in Andhra Pradesh during the period 2000 to 2008. A declining trend in HIV prevalence can be observed in both sites for all the five states. However, there are differences in the rate of decline between the states. The rate of decline of HIV prevalence in Manipur is much higher than the other four states in both (ANC and STD) sites. Manipur is the state which has extremely high HIV prevalence among the IDUs compared to other states in the country. For example, a steep increase in the prevalence of HIV (0 per cent to 50 per cent within six months) among IDUs has been reported in 1990 (Sarkar and Panda, 1995). In Manipur, IDU is seen to be the predominant mode of transmission of the infection also there are evidence to indicate that the HIV/AIDS is spreading to the wives and children of injection drug users (IDUs) and thus into the general population. In Karnataka and Maharashtra, HIV prevalence is high among FSWs (Female Sex Workers) compared to other states. This may be because of the existence of the

"Devadasi System[10]" in northern Karnataka (Ekstrant 2003). Thappa et al (2007) states "...studies of the devadasi system in contemporary India indicate that it still prevails as an institution in some Hindu temples, mostly in Karnataka and Andhra Pradesh". Many women from this part of the country are supplied as sex workers to large cities like Mumbai.

Table 1.5 Reported AIDS Cases in Five High Prevalence States

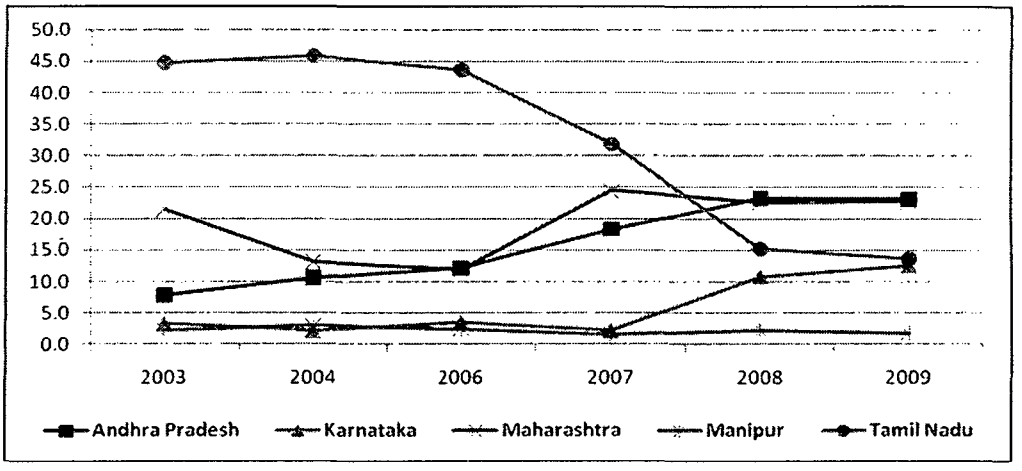
States	Number of reported AIDS cases as on					
	2003	2004	2006	2007	2008	20009
Andhra Pradesh	4,339	10,293	14,499	36,620	61,239	98,659
Karnataka	1,790	2,102	4,116	4,345	28,310	53,221
Maharashtra	11,829	12,783	14,165	48,797	59,513	97,193
Manipur	1,238	2,866	2,866	3,297	5,997	7,521
Tamil Nadu	24,667	44,492	52,036	63,517	40,038	58,153
India	55,169	96,978	1,19,445	1,99,453	2,63,423	4,27,451

Source: Various report of NACO

The table 1.5 shows the number of reported AIDS cases in five states and in India. The variation is very high between states. Looking at the distribution of reported AIDS cases in India, it is observed that in 2003 and 2004 Tamil Nadu continues to account for the largest share of reported HIV/AIDS cases (around 60 per cent of the total of five states) followed by Maharashtra (30 Per cent). It is also observed that the share of Tamil Nadu in the total of five states has drastically declined. The share of Maharashtra declined in the initial period and then started to increase. The share of Manipur was almost stable in the total number of reported cases in the five states.

[10] This is the system in which young girls are purchased and dedicated to a temple, where the girls are often used as the sexual objects to satisfy the pleasure of the temple priests and pilgrims. It was an established custom in some parts of India as early as 300 AD. By the 9th and 10th centuries, many temples were built in South India and devadasis were recruited to perform various ritual and other services. In northern Karnataka, they keep this system alive notwithstanding the passing of the Karnataka Devadasis (prostitution of Dedication) Act, 1981. In the Yallamma temple, about 10,000 young girls from poor family are dedicated every year as devadasis to the goddess before they enter their teenage years. Girls are taken from home after dedication and then auctioned once they attain their teenage.. Over a period of time it is speculated that the majority of FSWs in the border districts of Maharashtra and Karnataka are devadasis. They constitute a substantial proportion of the FSWs in Pune, Bombay, Nagpur, Hyderabad and Delhi (Moni, 1995 and Thappa et al 2007)

Figure 1.1 Shares of Individual States in the Total Number of Reported AIDS Cases in India



Source: - National Family Health Survey 2005 - 06, India

Figure 1.1 shows that the share of Tamil Nadu in the total number of reported cases in India was almost stagnant from 2003 to 2006, and after that, there was a drastic decline from 43.6 per cent in 2006 to 13.6 per cent in 2009. This is due to the awareness campaigns conducted among the general population by the Government of Tamil Nadu with the support of non-governmental organizations (NGOs). Much of the state-sponsored propaganda was directed towards checking the spread of HIV among the general population under banners like 'Pulli Rajavukku AIDS Varuma' (i.e., will Pulli Raja be infected with AIDS?). The share of Andhra Pradesh in HIV prevalence increased from around 8 Per cent in 2003 to around 23 per cent in 2009. The share of Karnataka is stable during 2003-2007, and after that started to increase, while the share of Manipur remained almost the same for all the years.

1.5 Rationale and Objectives of the Study

Evidence from India shows that HIV prevalence among risk groups and the bridge population has been declining. Recent evidence suggest that India has entered the third phase, with the infection spreading to spouses and children of the bridge population thus making the general population highly vulnerable (Ghosh, 2002). The Country Progress Report India 2010 (CPR, 2010) mentions that while there is a decline in the epidemic among FSW in South Indian states, rising

trends are also evident in the North East where the epidemic is increasingly driven both by IDU and sexual transmission. A steady decline in HIV prevalence amongst FSW has been noted, and it is attributed mainly to the efforts taken by Government and NGOs (Non-Governmental Organization). HIV prevalence among Men who Sex with Men (MSM hereafter) is stable. In some high prevalence states, there has been a decline in HIV prevalence among Female Sex Workers (FSW hereafter) and MSM. Now the alarming fact is that the HIV prevalence among the general population started to increase.

Many studies have mentioned that in the absence of a curative medicine for HIV/AIDS, the assessment of the present knowledge regarding HIV among the general population is an essential prerequisite for primary prevention[11]. All over the world, health workers, and researchers have agreed that prevention is key to curbing/preventing a pandemic. In fact, until a reliable cure is found, prevention remains the most effective weapon against AIDS. It is also agreed that prevention is possible only by educating and enlightening people about the adverse consequences of AIDS (Saidel et al., 2007). Much literature observes that awareness and knowledge about the disease HIV/AIDS is the way to reduce risk behaviour and prevent the spreading of HIV (World Bank, 1997). Additionally, it is also necessary to curtail stigma and discrimination associated with PLWHA (Sambamoorthi et al., 2004). If people are not fully aware of AIDS and have no comprehension about the ways of preventing infection, they are more prone to be infected. Women, in particular, infect their children through vertical transmission. In this context, it is necessary to spread awareness and knowledge about HIV/AIDS.

As mentioned above one of the main targets of MGDs is "have halted by 2015 and begun to reverse the spread of HIV/AIDS". If India wants to achieve this goal, it has to arrest the spread of HIV infection among the general population in high prevalence states. Accomplishing this means knowing about the

[11] World Bank (1997); S. Sarkar et al (2007); Aggarwal et al (2006); Rahman et al (2007); Singh et al (2007); Arunkumar et al (2004); Anderson et al (1990); Pallikadavath et al (2005); and Thimothy (2003).

determinants of HIV infection and also which groups of people are more vulnerable to the disease in these states. It is therefore important to discuss the patterns of HIV prevalence among the general population so as to understand the factors which are responsible for the disease.

HIV affects the most productive segments of the population. The illness and death of HIV infected individuals affects the various institutions to which they belong. The household is one of important institutions that is worst affected by this disease. Prime-age adult death is an obvious tragedy in poorer households in particular, and in any household in general (Booysen et al., 2002). The death of adult member of the household leads to the loss of a productive household member. This results in loss of income and productive capacity, as well as increased costs and changing expenditure patterns.

Households draw on assets to manage when an earning member is affected by the disease and it is difficult to cope with the lower level of assets after prime age adult death. There are changes in food expenditure and food consumption. Households affected by HIV/AIDS faces two major additional costs. The first is the increased cost of medical treatment for the HIV positive member due to frequent illnesses. The total expenditure of a household depends on its income and wealth. Well-off households may opt for very expensive private treatment, which can extend the life span of infected person. Poor households will be forced to depend on public health provisions. Though medicines are available free of cost at public health centers, there are still costs that have to be borne for transport and food. The second additional cost is the cost of a funeral when the ill household member dies. This expenditure also depends upon the household's income (Greener, 2004). So, the socioeconomic impact of HIV/AIDS at household level needs to be discussed.

Given the rationale discussed above, this study has three broad objectives as stated below:

1.6 Objectives of the study:-

(i) To understand the patterns and distribution of awareness and knowledge of HIV/AIDS in high-prevalence states.

(ii) To understand the patterns and distribution of HIV prevalence in high-prevalence states.

(iii) To study the socioeconomic status of HIV/AIDS-infected individuals and households and their livelihood strategy.

1.7 Sources of Data

To fulfill the first and second objectives, we have used data from the National Family Health Survey (NFHS-3) 2005 - 06, India, which is a large-scale household survey conducted in a representative sample of households throughout the country. This survey provides state and national information on fertility, Infant Mortality Rate (IMR), family planning, maternal and child health, reproductive health, nutrition and utilization and quality of health and family planning services. The previous surveys of NFHS-1 and 2 have provided only data regarding women. NFHS-3 is the first survey to cover both men and women at the national level. This is also the first survey to collect blood samples for HIV tests from all consenting ever-married and never-married women age 15 to 49, and men age 15 to 54, in all the sample households of Andhra Pradesh, Karnataka, Maharashtra, Manipur, Nagaland[12], Tamil Nadu and Uttar Pradesh. In the remaining 22 states, the HIV tests for men and women were carried out in only a subsample of the households (NFHS-3, 2005-06), and therefore excluded from the study.

[12] Due to local opposition in Nagaland, blood collection for HIV testing was not collected in that state. So we did not include Nagaland in our analysis.

This survey has collected information from a nationally representative sample of 109,041 households and covers 124,385 women and 74,369 men. The sample covers 99 per cent of India's population living in all 29 states. Of this, only 102946 individuals were tested for HIV nationwide. Data collection of NFHS-3 was carried out in two phases. Twelve states were surveyed in the first phase; and the remaining seventeen states were surveyed in the second phase. The first phase data was collected from November 2005 to May 2006. And the second phase data from April to August 2006. Respondents who agreed to participate in the HIV testing provided blood drops from a finger stick that were collected on special filter paper cards and dried overnight. These dried blood spot samples were sent by courier to SLR Ranbaxy laboratory in Mumbai, where the HIV tests were conducted. The Indian Council for Medical Research established an expert group to collect and test the collected samples of blood. More than 80 per cent of eligible men age 15-54 and women age 15-49 had their blood tested for HIV in the five states selected for this study. For details about the sample design, data collection and coverage please see IIPS (2008).

To fulfill the third objective of the impact of HIV/AIDS on individuals and households, we conducted a primary survey. It was conducted in the Naguneri block in Tirunelveli District, Tamil Nadu. This block has the second highest prevalence of HIV/AIDS in the district[13]. Because of high unemployment; men from this area are often employed as migrant laborers in towns and cities away from their homes. In addition, the lack of infrastructure, poor services and poor living conditions characteristic of this area further increase the vulnerability of the local population to the HIV/AIDS epidemic. To assess the socio-economic impact of HIV/AIDS, we compared the households affected by the disease with a control group of matched households that were not affected by the disease. The details regarding identification of households, sampling and data collection are discussed in chapter 4. To study the determinants of HIV/AIDS awareness, knowledge and prevalence, we have used multivariate logistic regression

[13] The District Positive Network has identified this block as second high-prevalence block in Tirunelveli district

analysis. The estimated odd ratios have been used for interpretation. For details about the methods, please refer to (Maddala, 1977)

1.8 Organization of the Thesis

This study has been divided into five chapters including the introduction. In the introduction, we discuss the background, HIV/AIDS prevalence at the global, regional, India and its major states over time, rationale for the study, objectives, data and methodology of the study. The second chapter deals with awareness, knowledge and different level of knowledge about HIV/AIDS in the high-prevalence states of India. The patterns and distribution of HIV prevalence in the high-prevalence states is described in the third chapter. In the fourth chapter, we analyzed the socioeconomic impact of HIV/AIDS at the individual and household level. Finally, we provide the summary and conclusion in the fifth chapter.

Chapter II

Patterns and Distribution of Awareness and Knowledge of HIV/AIDS

2.1 Introduction

As we have mentioned in the previous chapter, an assessment of the present knowledge of HIV/AIDS among general population is an essential prerequisite for prevention. In India, many people lack awareness and adequate knowledge about HIV/AIDS. Studies reported that there is systematic variation of awareness and knowledge of HIV/AIDS in India by gender, age, marital status, socio-economic status and place of residence. The social stigma and discrimination attached to the disease are further barriers to voluntary testing. Both the government agencies and National Governmental Organizations (NGOs) continue to carry out campaigns to create awareness about the disease.

It is reported that in India, only 61 per cent of women have heard of AIDS compared to 84 per cent of men (IIPS 2008). The awareness of HIV/AIDS has increased over time among both the rural and urban population. However, there is still a low level of awareness among certain groups of people such as scheduled tribes, rural women, the illiterate, people living in households with low standard of living and those who are not regularly exposed to the media,.

Previous studies have not looked at the level of the awareness and knowledge about HIV/AIDS among the general population (both men and women), but there are a few studies that have examined the extent of awareness about AIDS among special groups, specific regions and women. Sambamoorthi et al. (2004) reported that among ever-married Indian women who had given birth during the three years prior to the interview, only 36 percent had heard about AIDS. Further they observed that married women without antenatal care were more aware of AIDS than the women with antenatal care. Balk and Lahiri (1997) reported that among women in 13 Indian states, the awareness of AIDS was low in the populous states of West Bengal, Gujarat, Assam and also Maharashtra,

while the northeastern states have high awareness. Shreeniwas and Homan (1995) did a study covering college students (both men and women) in the major port cities of Madras in Tamil Nadu, Mangalore and Bangalore in Karnataka, and Bombay in Maharashtra. They observed that almost 98 per cent of respondents were aware of AIDS mainly because they are belonging to the most educated segment of the population living in metropolitan areas. They had information on AIDS from various sources. Aggarwal and Rous (2006) did a study among Indian women and AIDS and found that only around 45 per cent of the women had heard of the disease.

Lal et al., (2000) conducted a study among college students in Kerala to understand the knowledge and attitude towards HIV/AIDS, sexually transmitted diseases and sexuality (and they observed that the males had better knowledge than the females. A study among female students by Singh et al. (2007) at Kanpur district in Uttar Pradesh, India, to assess the accuracy in the level of knowledge and misconceptions about HIV/AIDS. They observed that most of the students had misconceptions about the mode of transmission of HIV, and believed it could spread by kissing, hugging and using common utensils. In the clinical study conducted in Vellore, Tamil Nadu by Jacob et al., (1989), only 58 per cent of the men and 29 per cent of the women who had attended a medical outpatient department for any illness, were aware of AIDS. All these studies show that, the knowledge of AIDS is greater among those who are better educated and in the higher socio-economic strata compared to others. However, none of the studies looked into the patterns and distribution of awareness and knowledge among the high prevalence states in India in a comparative perspective. In this context, this chapter makes an attempt to discuss the issues related to the awareness and knowledge of HIV/AIDS in high prevalence states.

The basic purpose of this chapter is to

(i) identify the factors associated with awareness of HIV/AIDS in the selected states.

(ii) identify the factors associated with knowledge of HIV/AIDS in the selected states, and

(iii) analyze the different levels of knowledge in selected states.

2.2 Concepts

In this study we have used the questions of 'Have you heard of an illness called AIDS?' [14] as proxy for awareness of HIV/AIDS as a disease ; and 'Is there anything a person can do to avoid AIDS?'[15] as proxy for knowledge to prevent from the HIV/AIDS and this question generated three answers 'YES' there are ways to avoid AIDS, 'NO', there is no way to avoid AIDS, and 'Do not know'. As there were very few 'Do not know' responses, we combined it along with the 'NO' category in order to have two groups, 'YES' and 'Others' as it would facilitate to carry out the multivariate analysis.

Respondents who answered 'Yes' for the question of 'Is there anything a person can do to avoid AIDS?' were further questioned for 'whether the respondent is aware of the available correct alternative preventive measures to avoid getting AIDS?[16]' and their responses of 'yes/no' were systematically observed for the study. Also we noticed some misconceptions existing in the NFHS-3 about the preventive measures and hence we do not consider them for our study[17]. We used a combination of these measures to create composite indices to assess the overall quality of an individual's level of knowledge. Finally, we assigned scores for the level of knowledge based on the respondent's answer. The interpretations for scores are: 0 - 'no knowledge', 1 to 3 - 'some knowledge', and 4 and above - 'good knowledge'.

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[14] This question has been used for proxy for awareness of AIDS. Hereafter the heard of AIDS is called as awareness of AIDS.

[15] This question has been used for proxy for knowledge of HIV/AIDS. Here after 'Is there anything a person can do to avoid AIDS?' is called as knowledge of HIV/AIDS.

[16] Of the measures given in the NFHS-3, the correct alternative measures selected and included for the current study are 'abstain from sex'; 'use condoms'; 'have only one sex partner'; 'avoid sex with commercial sex workers'; 'avoid sex with homosexuals'; 'avoid blood transfusions'; 'avoid injections'; 'avoid IV drug use' and 'avoid sharing shaving kits/razors'.

[17] The misconceptions identified by us are avoid kissing. avoid mosquito bites because by these means HIV cannot be transferred to others.

2.3 Indicators for the Analysis

The dependent variables are awareness and knowledge of HIV/AIDS and both are categorical binary variable. The logistic regression was used to understand the determinants of awareness and knowledge of HIV/AIDS. The explanatory variables have been selected using cross-tabulation and chi-square test of significance as well as based on theoretical understanding. The respondents participated voluntarily in the survey. The socioeconomic indicators included are household wealth, educational status, employment, caste, and living environment. Wealth is defined in terms of ownership of material possessions by the household and its members. The educational status of individuals is measured as the level of education attained, which is classified into four categories namely, no education, primary, secondary, and higher. Caste has been classified into four categories as scheduled caste (SC), scheduled tribe (ST), other backward classes (OBC), and others. An individual's employment status is defined as either employed or unemployed. Living environment is defined as either urban or rural. We have also included the following demographic and behavioral characteristics: age, marital status, lifetime number of partners, condom used during last sexual intercourse, STD symptoms in the past twelve and knowledge of HIV/AIDS. Age was divided into three categories as young adult (15-24), adult (25-40), and above forty. Marital status was defined as never married, currently married and divorced. The number of lifetime partners has been classified into three categories (as one partner, 2–5 partners and more than 5 partners). The natures of the last three variables are dichotomous. Many participants did not provide a response to the questions on number of lifetime partners and condom use at last sexual contact. In order to retain their otherwise valuable information in the analyses, we created 'Missing' categories for these three variables.

2.4 Characteristics of the Respondents

In this section, we describe the socioeconomic, demographic and behavioural characteristics of the respondents who participated in the survey (NFHS - 3). Among the total respondents, around 46 per cent were women and 54 per cent, men. Regarding the level of education, 18.9 per cent were illiterate, nearly 14 per cent have primary and higher level of education and more than half of respondents have secondary level education (Table 2.1).

Table 2.1: Characteristics of the Respondents According to Participation in the Survey (%), (N=60486)

Sub categories	Men in the sample		Women in the sample		Total Sample	
	No.	%	No.	%	No.	%
Education						
Illiterate	3201	11.5	8221	25.2	11422	18.9
Primary	4299	15.4	4613	14.1	8912	14.7
Secondary	15761	56.5	15762	48.3	31523	52.1
Higher	4624	16.6	4005	12.3	8629	14.3
Wealth						
Poorer	1593	5.7	1991	6.1	3584	5.9
Poor	3438	12.3	4122	12.6	7560	12.5
Middle	6384	22.9	7266	22.3	13650	22.6
Richer	8280	29.7	9085	27.9	17365	28.7
Richest	8190	29.4	10137	31.1	18327	30.3
Employment						
Unemployed	4283	15.4	18495	56.7	22778	37.7
Employed	23602	84.6	14106	43.3	37708	62.3
Caste						
SC	4736	17	5381	16.5	10117	16.7
ST	2136	7.6	2441	7.5	4577	7.6
OBC	12202	43.8	13592	41.7	25794	42.6
Others	8811	31.6	11187	34.3	19998	33.1
Residence						
Urban	15776	56.6	18523	56.8	34299	56.7
Rural	12109	43.4	14078	43.2	26187	43.3
Religion						
Hindu	21809	78.2	25033	76.8	46842	77.4
Muslims	2966	10.6	3925	12	6891	11.4
Christian	1679	6	2074	6.4	3753	6.2
Buddhist	726	2.7	836	2.6	1562	2.6
Others	705	2.5	733	2.2	1438	2.4
Age						
Young Adult	9185	32.9	11698	24.4	20883	34.5
Adult	11415	40.9	14650	69.6	26065	43.1
Above forty	7285	26.2	6253	6.0	13538	22.4
Marital Status						
Never Married	10758	38.6	7970	24.4	18728	31.0
Currently	16811	60.3	22681	69.6	39492	65.3
Divorced	316	1.1	1950	6.0	2266	3.7

Continued...

Table 2.1: Characteristics of the Respondents According to Participation in the Survey (%), (N=60486)

Sub categories	Men in the sample		Women in the sample		Total Sample	
	No.	%	No.	%	No.	%
Condom used at last sex						
No	15564	55.8	20491	62.9	36055	59.6
Yes	1062	3.8	896	2.7	1958	3.2
Missing	11259	40.4	11214	34.4	22473	37.2
Sexually Transmitted Disease						
No	27749	99.5	32369	99.3	60118	99.4
Yes	82	0.3	144	0.4	226	0.4
Missing	54	0.2	88	0.3	142	0.2
Life time Partner						
One	14835	53.2	24261	74.4	39096	64.6
Two to Four	2734	9.8	274	0.8	3008	5.0
Five or more	421	1.5	2	0	423	0.7
Missing	9895	35.5	8059	24.7	17954	29.7
Total	27885	100	32601	100	60486	100.0

Source: National Family Health Survey 2005-06

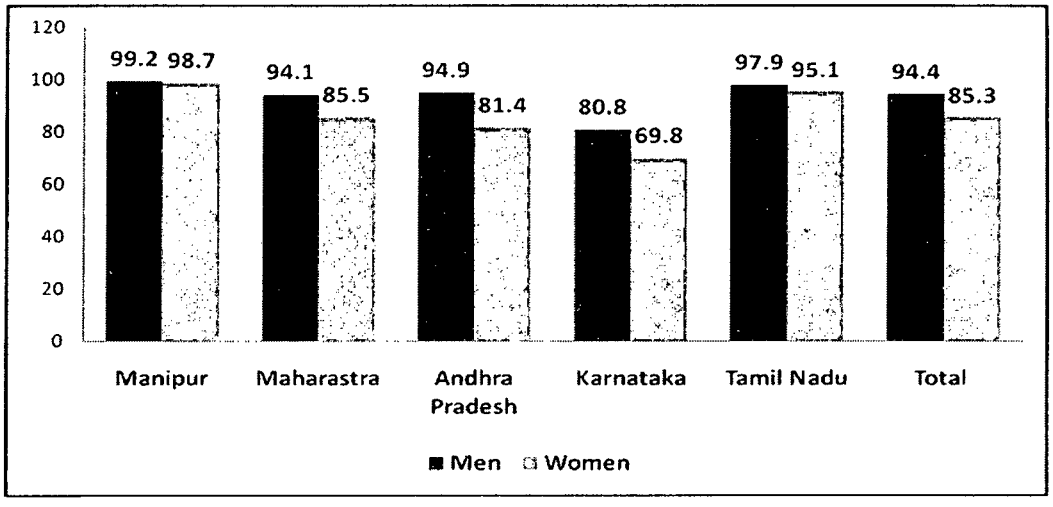
Among the illiterate respondents, the number of women is two times higher than that of men. Only around 6 per cent of respondents are in the 'poorer' category. Over 77 per cent of respondents are Hindus, while 11 per cent and 6 per cent of them are Muslims and Christians respectively. Almost two-third of respondents is 'currently married' and have only one life time partner. Among the unemployed respondents, there are three times more women than men.

2.5 Awareness of HIV/AIDS

In this section, we examine the respondents who were more likely to know about HIV/AIDS and the extent of their awareness about the transmission and prevention of AIDS. We begin by predicting who are all likely to be aware of AIDS-. We then present the multivariate analyses of the extent of the knowledge that men and women have heard about AIDS. Five states together account for around 94 per cent of men and 85 per cent of women who have heard about AIDS. This percentage varies considerably across states. AIDS awareness was lower in Karnataka for both men and women than in the other four states. The

gender difference exists in all the five states, but these differences were high in the states of Andhra Pradesh and Karnataka, and low in the states of Manipur and Tamil Nadu.

Figure 2.1 Weighted percentages of men and women who have heard about AIDS in high prevalence states



Source: National Family Health Survey 2005-06.

It is possible that there are several factors that are likely to increase a person's knowledge about AIDS. For example, *ceteris paribus*, we can expect that more educated persons will be more likely to know about AIDS than less educated persons. This is because education facilitates the acquisition of information. Similarly, we can expect people living in urban areas as more likely to know about AIDS than those living in rural areas. These hypotheses can be proved through multivariate analyses. Before proceeding to it, it is necessary to analyse the socioeconomic, demographic and behavioural characteristics of people who have heard about AIDS.

Table 2.2 Percentages of Individuals Who had Heard AIDS in High Prevalence States

Sub Categories	Manipur		Maharashtra		Andhra Pradesh		Karnataka		Tamil Nadu		Total	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Education Status												
Illiterate	91.9	95.1	68.8	57.9	84.4	61.3	65.8	43.5	90.8	84.6	78.6	63.3
Primary	98.0	98.6	84.1	75.2	91.4	80.1	79.5	61.1	96.1	94.5	89.1	81.5
Second	99.8	99.7	97.0	93.3	98.3	93.7	93.5	86.9	99.1	98.2	97.5	94.1
Higher	99.9	99.8	99.8	99.8	99.8	99.3	99.7	98.1	99.9	99.9	99.9	99.8
Wealth Index												
Poorer	98.2	91.6	72.1	45.0	77.8	50.1	68.6	38.2	93.5	83.5	78.6	63.3
Poor	98.7	95.8	82.7	64.6	89.5	62.3	76.3	51.5	96.4	89.2	89.1	81.5
Middle	98.5	98.8	91.9	77.3	92.8	70.3	86.3	65.5	97.3	94.0	97.5	94.1
Richer	99.8	99.4	95.7	87.7	96.7	85.5	93.9	82.3	98.5	97.7	99.9	99.8
Richest	99.9	99.9	99.0	96.0	99.0	95.3	98.9	93.5	99.8	99.5	78.6	63.3
Employment Status												
Un Employed	99.4	99.1	96.9	89.9	97.1	86.0	95.8	75.5	98.4	96.7	97.6	88.4
Employed	99.2	98.5	93.5	78.8	94.5	74.3	85.8	61.4	97.8	92.9	93.6	81.2
Caste												
SC	99.3	99.7	95.5	88.8	95	82.5	82.2	62.5	96.9	92.9	93.8	84.9
ST	98.7	96.5	80.5	62.0	82.1	61.6	81.3	57.2	97.4	90.9	87.9	75
OBC	99.7	99.4	95.0	85.6	94.4	76.6	89.7	74.1	98.2	95.6	94.9	84.4
Others	99.3	99.2	95.6	88.5	97.1	88.4	83.1	67.3	99.3	99.2	95.7	88.7
Place of Residence												
Urban	99.4	99.5	97	90.9	97.1	87.7	95.5	83.5	98.6	98.3	97.4	91.4
Rural	99.1	98.1	87.3	72.3	91.1	70	81.8	61.3	97.1	91.1	90.6	77.2
Religion												
Hindu	99.1	99.3	93.6	83.5	94.5	79.9	86.0	68.5	97.8	94.5	93.8	83.6
Muslims	100	99.1	94.7	90.1	96.6	85.3	92.9	74.7	98.6	99.2	96.2	87.5
Christian	98.8	96.6	99.2	96.6	65.4	88.7	95.2	91.4	98.1	97.6	97.9	95.1
Buddhist	99.5	-	95.7	90.1	-	-	-	66.7	-	-	95.7	90
Others	99.6	98.7	99.1	98.4	92	-	81.7	66.7		90	98	96.6

Continued...

Table 2.2 Percentages of Individuals Who had Heard AIDS in High Prevalence States

Sub Categories	Manipur		Maharashtra		Andhra Pradesh		Karnataka		Tamil Nadu		Total	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Age												
Young Adult (15-24)	99.3	98.6	96.2	88.6	96.2	85.6	90.1	75.7	98.7	96.1	96.1	88
Adult(25-40)	99.5	99.1	94.4	85.1	96.2	80.9	88.1	68.1	98.9	95.4	95.3	85
Above forty	98.5	98.0	90.4	80.3	91.1	74.7	81	61.6	95.6	92.7	91.1	80.8
Marital status												
Never Married	99.2	98.8	96.9	92.7	96.7	90.7	91.1	84.3	98.9	96.6	96.6	92.9
Currently	99.2	98.7	92.1	83.4	94	79.5	84.6	66.9	97.6	94.7	93.2	83.3
Divorced	97.8	98.0	94.7	80.2	57	71.8	74.1	53.8	86.1	92.5	87.3	77.6
Condom used at last sex												
No	99.2	98.7	92.0	83.2	94.4	79.8	84.6	67	97.8	95.4	93.2	83.2
Yes	99.3	99.6	99.6	96.4	99.3	91	97.9	87.1	98.7	97.2	99.2	95.3
Missing	99.2	98.7	95.7	88.1	95.5	84.5	89.7	74.8	98	94.2	95.6	88.2
Life Time Partners												
One	99.1	98.6	92.6	83.3	93.4	78.9	84.6	66.1	97.3	94.5	93.1	82.8
Two to Four	99.6	99.1	93.7	78.9	95.7	84.6	87.4	58.3	96.8	97.5	94.6	89.1
Five or more	99.9	99.4	98.5	66.7	97.5	92.1	95.7	99.5	100	-	98.1	85.7
Missing	99.3	98.8	96.4	92.4	96.4	90.2	89.9	83.5	98.9	96.7	96.2	92.6
Sexually Transmitted Diseases												
No	99.2	98.7	94	85.4	94.6	81.3	-	69.7	-	95.0	94.4	85.2
Yes	100	99.2	100	94.9		97.9	-	87.5	-	99.2	97.6	95.8
Missing	100	80.1	100	86.1		98.3	-	88.9	-	99.5	99.8	89.8

Source: National Family Health Survey 2005-06

From the above analysis it is observed that a positive relationship exists between the individual's educational attainments and awareness of AIDS. A similar relationship exists between wealth and awareness of AIDS (Table 2.2). People who belong to STs and SCs have less awareness about AIDS than their counterparts. The following groups are found to be less aware of AIDS than their counterparts: Hindus, above-forty aged group, those who have not used condoms during last sexual intercourse, those did not had sexually transmitted diseases during last twelve months, and those who had one life time partner.

2.5.1 Socioeconomic Characteristics and Awareness of HIV/AIDS

Socioeconomic characteristics of people who have heard about AIDS are broadly classified for their educational status, religion, caste, place of residence as given in table 2.2. Each of these categories is further sub-classified to capture the nuances involved within them as it enables us to have 'inter' and 'intra' variable comparisons at every level/category. This analysis also brings out the awareness gap that exists across different educational strata. The same is also applicable for each -category. From our analysis, it is observed that the gender difference exists in all the states across all the sub-categories. AIDS awareness is higher among men than that of women in all the states. Except for Tamil Nadu and Manipur, the gap within the category is much higher among women than men in Maharashtra, Andhra Pradesh and Karnataka. The gender difference/'the gap' with respect to awareness of HIV is also found high in all the sub-categories such as the illiterate, poorer, poor and middle people, and rural population, Hindus, Muslims, Scheduled Castes and Scheduled Tribes. However, Manipur and Tamil Nadu remains as exceptions since the gender gap is much lesser than the states of Maharashtra, Andhra Pradesh and Karnataka. Further it is observed that there is a positive relationship between educational attainment and HIV/AIDS awareness. It is observed that illiterate women in Manipur have high awareness than that of women of primary and secondary education in Andhra Pradesh and Karnataka. The reason for it lies in the different mode of transmission because it is the IDU in Manipur. In terms of place of residence, the awareness of AIDS is

high among those who are living in urban. Mass media could have played an important role in enhancing this awareness in the urban areas.

Individuals with higher socio-economic status as measured by educational attainment and wealth index are more likely to have heard about AIDS than individuals with less education and a lower position in the wealth index. This finding of ours coincides with that of a study conducted by *Pallikadavath* et al., (2005) for Maharashtra and Tamil Nadu. By taking the Five High Prevalence states together we find the degree of awareness is almost 100 per cent for both men and women with higher level of education (99.9 and 99.8 per cents for men and women respectively) and lowest among individuals without any education (79.3 and 60 per cents for men and women respectively). Similarly, individuals belong to highest income category are more likely to be aware of AIDS than the lowest income category and we attribute it to their higher accessibility to the mass media The roll of mass media is identified to be an important factor in the creation of awareness. For instance, in India, the NFHS-3 reports that around 80 per cent of the men and women who have heard of AIDS by Television and 30 per cent of women and 55 per cent of men have heard of AIDS by radio.

With respect to employment we find a negative relationship between individuals who are employed and the awareness about HIV/AIDS. The low awareness among the persons who are employed is attributed to the greater share of unskilled and agricultural labour in the employment category.

2.5.2 Demographic and Behavioural characteristics and awareness of HIV/AIDS

Age is one of the important factors affecting an individual's awareness of HIV/AIDS. From our analysis, it is observed that the awareness of HIV/AIDS was higher among young adults than the adults who are above forty. Within the Five states, whether taken together or individually, the HIV/AIDS awareness is high among those who have never been married. It is also observed that the awareness level among those who are divorced is lower than the other two, i.e. never and currently married, categories.

From this analysis it can be observed that awareness is high among who have risk behaviours[18]. Further, it is observed that the awareness of AIDS was high among those who have Sexually Transmitted Disease during the last twelve months, and those who have used condoms during last sexual intercourse. The awareness of AIDS is lower among women who have used condoms during last sexual intercourse than men, and this varies across the states. This is due to different mode of HIV transmission. Women in the states of Karnataka and Andhra Pradesh have a lower awareness of AIDS than women in the other states. It is also observed that in all the categories, awareness about HIV/AIDS among men is higher than that of women.

2.6 Statistical Analysis

A binary logistic regression analyses was carried out using SPSS 16.0 to estimate the strength of associations between potential risk factors and HIV awareness. We did logistic regression for men and women separately because of the pattern of awareness about HIV/AIDS are not the same (Table 2.1). Due to the low sample size, it was not possible to do logistic regression for individual states. In this model, the dependent variable is 'have you heard about HIV/AIDS?' (1=if Yes and 0=if No), which is the dichotomous/binary variable. The independent variables are education level, wealth indices of household, employment status, caste, rural/urban residence, religion, age, and marital status, use of condom, STD and lifetime sexual partner. Among the independent variables, employment status, place of residence and Sexually Transmitted Diseases are the dichotomous/binary, and all other variables are polychotomous (or multiple-category) response variables. Many participants did not provide a response to the questions on the number of lifetime partners, and condom use at last sexual contact. In order to retain the otherwise valuable information in the analyses, we created 'Missing' categories for these two variables. In both the models, we did multicollinearity tests for both men and women separately. There is serious multicollinearity problem if the tolerance value of variables is greater than 0.1 or

[18] Risk behaviour would mean, having sex with multiple partners, FSWs, IDUs and MSM.

if the VIF (Variance-Inflating Factor) is greater than 10. In our analyses it is found that all the tolerance and VIF (Variance-Inflating Factor) are less than 0.1 and 10 respectively for all the variables. So, there is no multicollinearity problem.

Table 2.3 Odds of men and women having heard about AIDS, high prevalence states in India, 2005-06 (1= Yes, Having heard of HIV/AIDS; 0=No. Not having heard of HIV/AIDS)

Sub categories	Odd		95 Per cent of CI	
	Men	Women	Men	Women
Educational Status				
Illiterate	0.014***	0.009***	[0.006 - 0.031]	[0.004 - 0.019]
Primary	0.025***	0.018***	[0.011 - 0.056]	[0.008 - 0.040]
Second	0.084***	0.050***	[0.037 - 0.189]	[0.023 - 0.113]
Higher [R]	1.00	1.00	-	-
Wealth Index				
Poorer	0.17***	0.189***	[0.12-0.23]	[0.158-0.226]
Poor	0.233***	0.277***	[0.17-0.31]	[0.235-0.326]
Middle	0.371***	0.439***	[0.28-0.49]	[0.377-0.511]
Richer	0.506***	0.625***	[0.38-0.66]	[0.540-0.725]
Richest [R]	1.00	1.00	-	-
Employment Status				
Unemployed [R]	1.00	1.00	-	-
Employed	0.933	1.201***	[0.742-1.174]	[1.109-1.300]
Caste				
SC [R]	1.00	1.00	-	-
ST	0.521***	0.509***	[0.425-0.640]	[0.437-0.592]
OBC	1.088	0.793***	[0.927-1.277]	[0.712-0.883]
Others	1.23**	1.151***	[0.692-0.996]	[0.683-0.870]
Place of Residence				
Urban [R]	1.00	1.00	-	-
Rural	0.632***	0.776***	[0.549 - 0.727]	[0.71 - 0.847]
Religion				
Hindu [R]	1.00	1.00	-	-
Muslims	1.188	1.065	[0.954-1.480]	[0.938-1.209]
Christian	4.578***	4.956***	[3.171-6.607]	[3.931-6.248]
Buddhist	1.019	0.996	[0.678-1.533]	[0.758-1.310]
Others	2.672***	4.445***	[1.535-4.650]	[2.820-7.005]
Age				
Young Adult [R] (15-24)	1.00	1.00	-	-
Adult (25-40)	0.99	1.238***	[0.805 - 1.219]	[1.119-1.370]
Above forty	0.578***	1.067	[0.462 - 0.724]	[0.946-1.203]

Continued...

Table 2.3 Odds of men and women having heard about AIDS, high prevalence states in India, 2005-06 (1= Yes, Having heard of HIV/AIDS; 0=No. Not having heard of HIV/AIDS)

Sub categories	Odd		95 Per cent of CI	
	Men	Women	Men	Women
Marital Status				
Never Married [R]	1.00	1.00	-	-
Currently Married	0.395***	0.336***	[0.254 - 0.612]	[0.203 - 0.554]
Divorced	0.347***	0.416***	[0.206 - 0.584]	[0.253 - 0.684]
Condom used at last sex				
No [R]	1.00	1.00	-	-
Yes	2.468**	1.37*	[1.204 - 5.062]	[0.955 - 1.966]
Missing	0.729**	0.746***	[0.572 - 0.928]	[0.645 -0.863]
Sexually Transmitted Diseases				
No [R]	1.00	1.00	-	-
Yes	1.394	5.641***	[0.33 - 5.887]	[2.216 - 14.36]
Missing	5.5307	1.904	[0 -]	[0.821 - 4.417]
Life time Partner				
One [R]	1.00	1.00	-	-
Two to Four	1.79***	2.66***	[1.484 - 2.164]	[1.753 - 4.056]
Five or more	4.59***	1.54	[2.234 - 9.439]	[0.152 - 15.61]
Missing	0.383***	0.526***	[0.261 - 0.563]	[0.326 - 0.849]

Note: ***P<0.01, **P<0.05 and *P<0.10 R = reference category.

2.6.1 Socio-Economic Patterning of HIV Awareness

Table 2.2 presents the adjusted odd ratios (ORs) and the 95 per cent confidence intervals (CIs) for the individuals who had heard about HIV/AIDS. It is associated with individual demographic characteristics, socioeconomic indicators, and behavioural risk factors among men and women, separately. Compared to men with higher education, men with no education (OR 0.01, 95per cent CI 0.003-0.072), primary education (OR 0.02, 95per cent CI 0.005-0.133) and secondary education (OR 0.08, 95per cent CI 0.014-0.404) have a lower odds ratio of having heard about HIV/AIDS. In other words, the odds of being aware of AIDS in the illiterate, and those with primary and secondary education was nearly 99 per cent lower than for the higher education level. Women show a similar pattern; those with higher education are associated with an increased

likelihood of having heard about the HIV/AIDS disease, whereas women with no education or primary education were associated with decreased likelihood of having heard about the disease. These results are highly statistically significant for both men and women. Compared to the richest quintile, the odd ratio of 'have heard about HIV/AIDS' of the richer quintile decreased by 50 per cent and 38 per cent for men and women, respectively, and by 83 per cent and 82 per cent for men and women in the poorest quintile. These results are also highly statistically significant.

Further, men and women who belong to a 'scheduled tribe' were less likely to have heard of AIDS with odds of around 48 per cent and 50 per cent respectively lower than those classified as 'scheduled castes'. In other words, the SC/ST population was more prone to low level of awareness of HIV/AIDS. .

2.6.2 Demographic and Behavioral Patterning of HIV Awareness

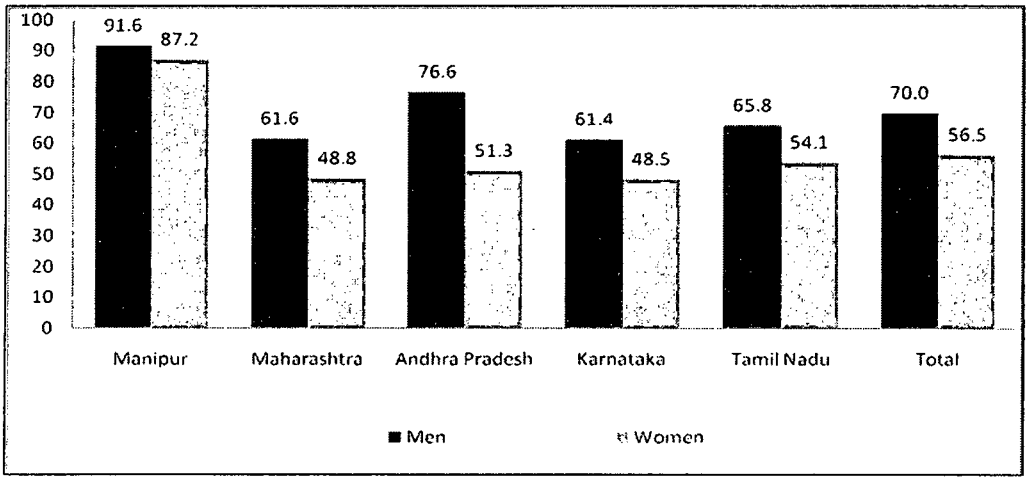
Compared to young adult men, adult men and those above forty have higher odds ratio of being aware of HIV/AIDS (Table 2.2). This is statistically significant at one per cent level. The marital status of individuals was a strong predictor of HIV awareness for both men and women, which is statistically significant. Condom use at last sexual intercourse was associated with increased odds of HIV awareness for both men and women. There were no statistically significant relationships between HIV awareness status and the following indicators regardless of gender: employment status (only for men), age and Sexual Transmitted Diseases.

2.7 Knowledge about the Ways to Avoid and Prevent HIV/AIDS

In the previous section, we made an attempt to understand individual's awareness about the HIV/AIDS. It is important to discuss knowledge about AIDS because people merely hearing about AIDS does not ensure that they are made aware of the ways by which the HIV is transmitted and various measures to prevent it. . To assess the individual's knowledge about the measures to avoid HIV/AIDS, the NFHS - 3 questioned only those respondents whoever had heard

about AIDS (i.e. awareness) that 'Is there any ways to avoid AIDS?' (i.e. knowledge). In our present study we too followed the same order to assess the knowledge about AIDS. Accordingly the results obtained for the Five states, taken together, reveal that about 94.4 per cent of men and 85.3 per cent of women were aware of AIDS. Of this, only 70 per cent of men and 56.5 per cent of women said that AIDS can be avoided (Figure 2.2).

Figure 2.2 Percentages (weighted) of Men and Women who said that there are ways to avoid and prevent HIV/AIDS in high prevalent states



Source: National Family Health Survey 2005-06

From the analysis it is observed that these differences vary across the states. In all the states, both the awareness and knowledge of HIV/AIDS among men is higher than the women. In terms of awareness, Maharashtra and Tamil Nadu were better than the other states, but when it comes to knowledge these two states are almost equal to all other three states. Comprehensiveness of AIDS knowledge was defined as accurate knowledge to questions on ways to avoid HIV/AIDS, including abstaining from sex, using condoms, having only one partner, avoiding sex with commercial sex workers, etc.

In this section, we are also going to analyse the patterns and distribution of the knowledge of HIV/AIDS, and then the different levels of knowledge about HIV/AIDS transmission and preventive methods. It is also important to discuss the knowledge of HIV/AIDS of each state separately as different social and cultural norms between states may interact with knowledge of HIV/AIDS.

Table 2.4 Percentage of individuals who know about the ways to avoid HIV/AIDS in selected states by socioeconomic, demographic and behavioural characteristics

Sub Categories	Manipur		Maharashtra		Andhra Pradesh		Karnataka		Tamil Nadu		Total	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Socioeconomic Characteristics												
Education Status												
Illiterate	71.0	74.0	34.1	25.8	62.3	40.6	37.7	31.9	46.1	29.9	51.1	39.7
Primary	84.2	81.4	45.2	31.3	70.3	48.3	48.1	35.8	56.5	41.2	58.3	44.8
Secondary	92.6	90.1	60.8	48.8	79.0	53.2	65.0	52.0	67.7	60.6	71.2	59.0
Higher	96.6	97.6	82.1	77.1	88.3	58.8	84.6	76.0	81	83.6	86.2	80.0
Wealth Index												
Poorer	70.4	57.9	33.7	24.1	62.7	43.9	45.1	27.9	60.5	34.1	51.7	34.2
Poor	86.8	75.7	44.7	34.9	72.6	45.2	45.3	37.1	67.8	41.5	61.1	46.5
Middle	89.3	83.8	50.8	38.2	74.6	46.8	56.9	45.6	62.4	42.1	67.2	52.5
Richer	94.9	91.8	60.5	41.6	75.6	46.9	66.4	50.3	63.3	57.8	71	56.7
Richest	94.3	93.6	71.7	58.2	81.6	58.6	80	59.6	72.9	73.5	77.7	64.2
Employment Status												
Un employed	91.1	87.6	64.2	49.7	75.8	51.2	72	50.3	69.2	58.1	73.8	56.1
Employed	91.7	86.8	61.1	47.2	76.7	51.4	60	45.2	65.2	48.8	69.3	56.9
Caste												
SC	93.2	94.7	59.6	48.8	75.7	52.8	58.9	41.1	61.0	46.6	64.9	51.4
ST	82.1	77.3	49.3	35.8	67.3	44.4	57.8	37.8	39.5	36.0	66.4	57.3
OBC	95.6	94.1	62.8	46.9	76.6	51.5	64.9	50.3	67.6	55.8	69.4	53.8
Others	93.6	88.2	63.7	51.6	78	51.1	56.3	51.1	68.7	78.5	74.3	61.9

Continued...

Table 2.4 Percentage of individuals who know about the ways to avoid HIV/AIDS in selected states by socioeconomic, demographic and behavioural characteristics

Sub Categories	Manipur		Maharashtra		Andhra Pradesh		Karnataka		Tamil Nadu		Total	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Residency												
Urban	94.9	92.6	64.7	50.4	77.3	51.8	71.5	50.6	63.5	58.4	71.5	57.3
Rural	89.0	82.6	53.6	44.1	75.3	50.1	54.5	46.8	68.8	48.4	67.9	55.2
Religion												
Hindu	94	89.9	60.5	49.6	78	52.9	60.7	48.9	65.4	52.3	68.9	55.8
Muslims	97	90.1	64.1	40.9	71.4	43.4	63.1	40.4	68.9	64.6	71.4	49.7
Christian	82.8	77.8	81.9	64.3	71.9	60.7	75	63.8	68	67.4	77.4	70.7
Buddhist	75	33.1	61.6	46.5	-	-	75	-	0	-	61.6	46.3
Others	92.4	88.2	78.2	66.1	-	33.3	59.2	55.6	100	55.6	87.8	79.5
Demographic Characteristics												
Age												
Young Adult (15-24)	90.7	85.8	59.9	48.6	77.2	51.2	60.8	51.5	65.8	59.6	69.4	56.8
Adult (25-40)	93	88.7	65.5	50.3	78.8	53.2	63.2	47.6	67.4	55.8	72.4	58.1
Above forty	90.5	85.7	57.6	45.4	72	46.8	59	43.6	63.3	45.9	67	52.1
Marital Status												
Never Married	91.6	88	62.8	51.9	78.6	53.4	63.6	56.5	67.3	57.1	71.6	61.7
Currently	91.6	87.2	61.1	48.1	75.5	50.9	59.9	46.2	65.1	54.2	69.2	55.1
Divorced	90.9	80.1	41.7	41.8	63.2	47.9	67.5	39.8	50	42.3	59.6	47.9

Continued...

Table 2.4 Percentage of individuals who know about the ways to avoid HIV/AIDS in selected states by socioeconomic, demographic and behavioural characteristics

Sub Categories	Manipur		Maharashtra		Andhra Pradesh		Karnataka		Tamil Nadu		Total	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
Behavioural Characteristics												
Condom used at last sex												
No	91.6	87.1	59.5	46.7	75.6	50.7	59.6	46.1	65.4	53.8	69	54.8
Yes	94.9	95.5	79.5	66.4	91.2	62.6	81.5	53.4	78.4	78.6	83	70
Missing	91.2	86.8	61	49.4	77.2	51.9	62.4	53.1	65.4	53.2	70.1	58.3
STD												
No	91.6	87.1	61.6	48.5	76.5	51.3	61.4	48.5	65.7	54	70	56.4
Yes	94.7	100	73.7	70.3	89.5	57.1	65.7	64.3	74.1	66.7	86.2	73.2
Missing	63.6	50	70	62.8	80	54.5	75	62.5		50.1	72.2	59.5
Life time Partner												
One	91.6	87.1	61.2	47.8	73.7	50.6	61	46.1	64.3	53.3	68.6	54.6
Two to Four	92.0	77.7	65.6	31.7	80.4	61.4	60.4	-	68.9	43.6	73.6	56.1
Five or more	91.4	-	79.7	50	90.9	-	63.6	-	84.5		85.2	66.7
Missing	91.5	88	60.6	52	77.4	53.2	62.1	56.1	66.4	57.1	70.4	61.5
HIV Results												
Negative	91.5	87.1	61.6	48	76.7	51.4	61.5	48.5	65.7	53.9	70.1	56.6
Positive	94.6	90.1	60	42.9	60.7	41.9	44.1	63.2	76.9	40.1	67.2	56.2
Total	91.6	87.2	61.6	48.8	76.6	51.3	61.4	48.5	65.8	54.1	70	56.5

Source: National Family Health Survey 2005-06

From the analysis it is observed that there is positive relationship between knowledge and different categories such as educational status and the wealth index. As already notified in the case of 'awareness', the 'gender gap' is also notices in the case of knowledge of HIV/AIDS in all the sub-categories of education, wealth, employment, caste, place of residence, religion, age, marital status, condom used at last sex, STD, life time partner and HIV (table 2.4). This gender gap is observed to be very high in the categories of educational status and wealth index - for the obvious reasons of illiteracy and poverty preventing the access to information. It is also observed that, the knowledge gap across the different educational strata is very high in Maharashtra and Tamil Nadu than in other states. Knowledge on HIV/AIDS among the illiterates was identified to be high in Manipur and Andhra Pradesh.

It is observed that compared to individuals who have completed secondary education in Karnataka and Tamil Nadu, illiterates in Manipur have better knowledge. Poorer women in Manipur have better knowledge than that of richer women in all other four states as well as in total. This is attributed to the differences in the modes of HIV transmission. For instance, in Karnataka and Tamil Nadu the major mode is by sexual intercourse, about which people are very shy to discuss openly. But in Manipur the mode is being the IDU, people are relatively comfortable to discuss about it openly. However, this pattern was not the same with respect to awareness. In the sub-category of caste, individuals who belong to Scheduled Tribes have less knowledge than other caste categories in all the states. In Manipur individuals who belong to Scheduled Tribes and Scheduled Caste have high knowledge than any other castes in other four states. This is mainly due to the high SC& ST samples drawn in Manipur (NFHS - 3). The gender gap in each caste sub-category is low only in Tamil Nadu. The gap between the awareness and knowledge of HIV/AIDS is low in all the categories of Manipur than that of other four states. The differences in the modes of HIV transmission is applicable here too.

Table 2.5 Odds of the knowledge of whether or not AIDS can be avoided among men and women, high prevalence states in India 2005-06

Sub categories	Odd ratios		95 % of C.I	
	Men	Women	Men	Women
Education				
Illiterate	0.195***	0.185***	[0.171 - 0.221]	[0.164 - 0.208]
Primary	0.25***	0.225***	[0.223 - 0.281]	[0.200 - 0.254]
Second	0.428***	0.397***	[0.389 - 0.471]	[0.360 - 0.438]
Higher [R]	1.00	1.00	-	-
Wealth				
Poorer	0.543***	0.48***	[0.470 - 0.627]	[0.411 - 0.560]
Poor	0.695***	0.71***	[0.622 - 0.777]	[0.636 - 0.792]
Middle	0.843***	0.872***	[0.770 - 0.923]	[0.800 - 0.950]
Richer	0.905**	0.964	[0.838 - 0.977]	[0.897 - 1.035]
Richest [R]	1.00	1.00	-	-
Employment				
Unemployed [R]	1.00	1.00	-	-
Employed	0.917*	1.176***	[0.839 - 1.002]	[1.110 - 1.247]
Caste				
SC [R]	1.00	1.00	-	-
ST	0.941	0.903	[0.826 - 1.072]	[0.791 - 1.031]
OBC	1.142***	0.974	[1.052 - 1.239]	[0.900 - 1.055]
Others	1.216***	1.258***	[1.111 - 1.332]	[1.154 - 1.372]
Place of Residence				
Urban [R]	1.00	1.00	-	-
Rural	1.169***	1.314***	[1.093 - 1.25]	[1.234 - 1.401]
Religion				
Hindu [R]	1.00	1.00	-	-
Muslims	1.118**	0.814***	[1.018 - 1.228]	[0.748 - 0.887]
Christian	1.655***	2.108***	[1.448 - 1.892]	[1.868 - 2.378]
Buddhist	0.741***	0.717***	[0.623 - 0.882]	[0.606 - 0.848]
Others	2.862***	2.779***	[2.258 - 3.627]	[2.251 - 3.431]
Age				
Young Adult (15-24) [R]	1.00	1.00	-	-
Adult (25-40)	1.158***	1.188	[1.056 - 1.271]	[1.104 - 1.279]
Above forty	0.981	1.077	[0.879 - 1.095]	[0.982 - 1.182]

Continued...

Table 2.5 Odds of the knowledge of whether or not AIDS can be avoided among men and women, high prevalence states in India 2005-06

Sub categories	Odd ratios		95 % of C.I	
	Men	Women	Men	Women
Marital Status				
Never Married [R]	1.00	1.00	-	-
Currently	0.612***	0.585	[0.507 - 0.740]	[0.373 - 0.918]
Divorced	0.524***	0.58	[0.391 - 0.704]	[0.371 - 0.907]
Condom used at last sex				
No [R]	1.00	1.00	-	-
Yes	1.386***	1.303	[1.164 - 1.649]	[1.100 - 1.544]
Missing	0.825**	0.912	[0.710 - 0.957]	[0.804 - 1.036]
STD				
No [R]	1.00	1.00	-	-
Yes	2.11**	2.386	[1.101 - 4.045]	[1.604 - 3.550]
Missing	0.906	0.997	[0.489 - 1.679]	[0.608 - 1.634]
Life time Partner				
One [R]	1.00	1.00	-	-
Two to Four	1.50***	1.503	[1.358 - 1.657]	[1.133 - 1.992]
Five or more	2.998***	1.651	[2.260 - 3.978]	[0.274 - 9.955]
Missing	0.679***	0.696	[0.573 - 0.805]	[0.449 - 1.079]
HIV				
Negative [R]	1.00	1.00	-	-
Positive	0.865	1.134	[0.645 -1.16]	[0.793 - 1.622]

Note: ***P<0.01, **P<0.05 and *P<0.10 R = reference category.
Source: National Family Health Survey 2005-06.

2.7.1 Factors associated with knowledge about HIV/AIDS

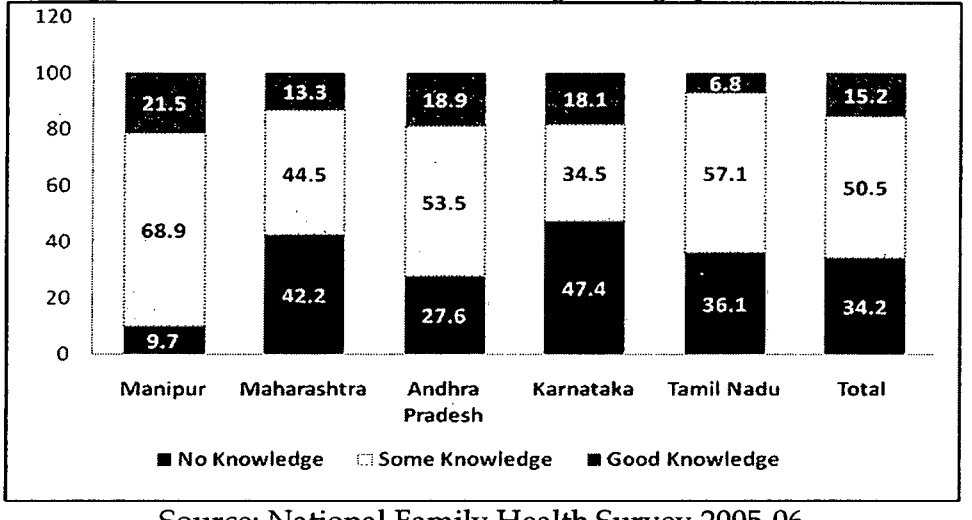
As mentioned in the beginning of this chapter, , three possible responses were recorded to the question of 'Is there anything a person can do to avoid AIDS?' (i.e. knowledge). The results of logistic regression for the knowledge variable are presented in table 2.5. In the five states, educational status of men and women were statistically significant. It was observed that there is a positive relationship between educational attainment and knowledge about AIDS. There was a substantial difference between the odd ratios for the 'higher education' category and other educational categories in both men and women. Variables such as wealth index, place of residence and religion are identified to be statistically significant. Marital status, condom used at during last sexual intercourse, had

sexual transmitted disease (STD) in last twelve months and number of life time partners were statistically significant for men and not for women. .

2.8 Levels of knowledge of HIV/AIDS

In this section, we discuss the different levels of knowledge in selected states. If the respondents answered "Yes" for the question of "ways to avoid AIDS", then he/she was asked about the different ways to avoid AIDS. We also tried to look at the different levels of knowledge about the ways to avoid AIDS. In NFHS-3, the respondents mentioned more than 15 ways to avoid AIDS. However, we have listed only ten important ways to avoid AIDS so as to be able to scale the levels of knowledge. As already mentioned , the levels of knowledge are scaled into three categories like, No Knowledge, Some Knowledge and Good Knowledge. It is also important to look at the levels of knowledge at the individual state level. Figures 2.3 and 2.4 shows the different levels of knowledge (ways of avoiding HIV/AIDS) among men and women across the states.

Figure 2.3 Men's Levels of Knowledge in high prevalent states

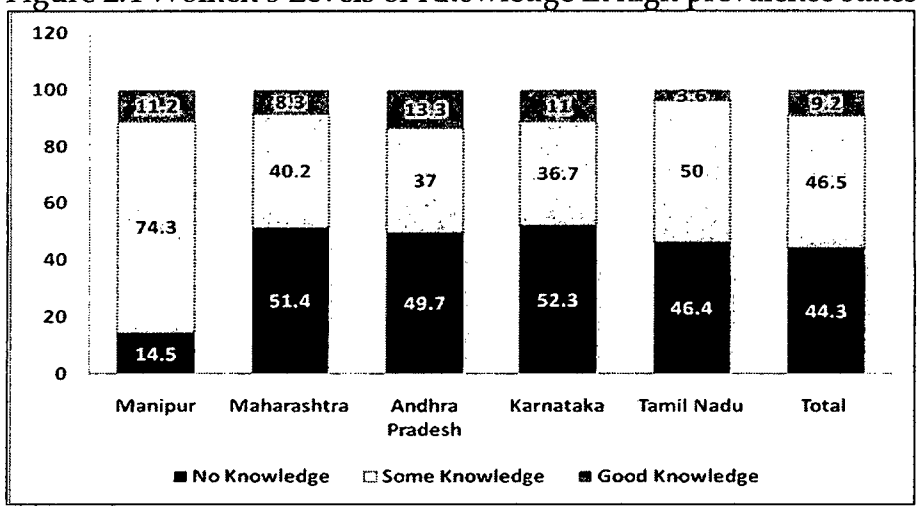


Source: National Family Health Survey 2005-06

Men with no 'no knowledge' of AIDS are high in the states of Maharashtra and Karnataka - around 42 and 47 per cents respectively. Manipur was leading in the 'some' and 'good knowledge' of AIDS among both men and women. The percentage of men and women who had good knowledge in Tamil Nadu was

lower than the other four states. But in terms of some knowledge, Tamil Nadu takes the second rank after Manipur.

Figure 2.4 Women's Levels of Knowledge in high prevalence states



Source: National Family Health Survey 2005-06

Comparing figure, 2.3 and 2.4, it is observed that men have more knowledge than the women in all the states. There is high variation in the levels of knowledge among the Five states.

Table 2.6 Percentage of Individuals having Different Levels of knowledge about HIV transmission by socioeconomic characteristics

Socio-economic characteristics	Levels of Knowledge					
	No Knowledge		Some Knowledge		Good Knowledge	
	Men	Women	Men	Women	Men	Women
Educational Attainment						
Illiterate	60.3	61.5	35.4	35.9	4.3	2.6
Primary	48.6	56.1	44.4	40.4	7.0	3.5
Second	30.9	41.6	53.4	48.9	15.7	9.4
Higher	14.3	20.4	56.9	56.9	28.8	22.6
Wealth Index						
Poorer	59.9	67.5	35.4	30.9	4.7	1.9
Poor	47.4	54.7	44.5	41.4	8.1	3.9
Middle	37.6	48.7	49.6	45.3	12.7	5.9
Richer	31.6	44.0	53.2	48.0	15.2	8.0
Richest	23.8	36.2	54.0	49.1	22.5	14.7

Continued...

Table 2.6 Percentage of Individuals having Different Levels of knowledge about HIV transmission by socioeconomic characteristics

Socio-economic characteristics	Levels of Knowledge					
	No Knowledge		Some Knowledge		Good Knowledge	
	Men	Women	Men	Women	Men	Women
Employment						
Unemployed	28.3	44.6	52.6	45.8	19.1	9.6
Employed	35.3	43.9	50.1	47.3	14.5	8.7
SC	39.5	49.1	48.9	43.5	11.6	7.4
ST	42.3	43.4	44.3	48.4	13.4	8.1
OBC	34.5	47.1	50.3	44.9	15.3	8.1
Others	29.2	39.1	53.3	49.3	17.6	11.6
Place of Residence						
Urban	30.6	43.2	52	46.0	17.4	10.8
Rural	39.1	45.9	48.6	47.2	12.4	6.9
Religion						
Hindu	35.8	44.9	49.1	46.3	15.1	8.9
Muslims	31.4	51.2	54.3	38.4	14.2	10.4
Christian	25.0	30.4	57.6	58.8	17.5	10.8
Buddhist	41.4	53.7	48.3	37.9	10.3	8.4
Others	14.2	21.8	63.1	66.5	22.8	11.7

Source: National Family Health Survey 2005-06

It is observed that there is a positive relationship between educational attainment and different levels of knowledge. Individuals belong to higher educational category have good knowledge than their counterparts. At the same time, people in the sub-categories of richest, unemployed, other castes, urban, Muslims and Christians have good level of knowledge than their counter parts.

The information given in table 2.7 also suggests that most Indian women lack knowledge about the ways to prevent HIV/AIDS. There is a lot of difference between the different levels of knowledge. In classifying the levels of knowledge, there is very small difference between the categories of 'no-knowledge' and 'some-knowledge'. But there is a big difference between the categories of 'some knowledge' and 'good -knowledge'. Women who are above forty years of age have less proportion of good knowledge (7.2 per cent) compared to men (12.9). Across the age category, young adults and adults have good knowledge.

Regarding the marital status, the never married section is having better knowledge than the other two.

Table 2.7 Individuals Levels of knowledge about HIV transmission by Demographic characteristics (per cent)

Demographic characteristics	Levels of Knowledge					
	No-Knowledge		Some Knowledge		Good Knowledge	
	Men	Women	Men	Women	Men	Women
Age						
Young Adult (15-24)	33.7	44.1	51.5	46.3	14.9	9.7
Adult (25-40)	31.4	42.7	51.6	47.6	17.0	9.7
Above forty	39.4	48.7	47.6	44.1	12.9	7.2
Marital Status						
Never Married	31.2	39.2	52.5	49.3	16.3	11.5
Currently	35.9	45.6	49.4	45.8	14.7	8.6
Divorced	48.7	52.6	40.8	41.1	10.4	6.4

Source: National Family Health Survey 2005-06

Table 2.8 Individuals Levels of knowledge about HIV transmission by behavioural characteristics (%)

Behavioural characteristics	Levels of Knowledge					
	No Knowledge		Some Knowledge		Good Knowledge	
	Men	Women	Men	Women	Men	Women
Condom used at last sex						
No	36.1	46.1	49.4	45.5	14.6	8.5
Yes	17.8	30.4	61.6	54.6	20.6	15.1
Missing	33.4	42.5	51.1	47.4	15.7	10.1
Life time Partner						
One	36.4	46.1	48.8	45.4	14.8	8.5
Two to Four	30.8	46.7	54.9	49.6	14.3	3.7
Five or more	16.6	33.3	64.1	66.7	19.2	0
Missing	32.7	39.3	51.3	49.1	16.1	11.5
Sexually Transmitted Disease						
No	34.3	44.4	50.4	46.4	15.2	9.2
Yes	17.1	27.5	69.5	54.3	13.4	18.1
Missing	30.2	41.8	56.6	40.5	13.2	17.7

Source: National Family Health Survey 2005-06

It is clearly observed that in the case of both men and women, those who have used condom at last sexual intercourse have 'good-knowledge' about the measures that can be taken to avoid/prevent HIV/AIDS. Individuals who have involved in risk behaviour have 'good-knowledge' compared to others.

2.9 Discussion and Conclusion

India is a country with a very low HIV prevalence, but in terms of absolute number, it has a large number of infected people. The epidemic is found to be in certain states in which it is concentrated among the socially disadvantaged groups who mainly suffer an educational disadvantage. . Our analysis shows there is a positive relationship between the individual educational attainment and awareness of HIV/AIDS. The highest awareness of HIV/AIDS exists among individuals with either primary or secondary education in the majority of the states in India. This finding of ours confirms with the study by Balk and Lahiri (1997) and Pallikadavath et al., (2005).

There is a consistent relationship between the household wealth index and HIV awareness and knowledge. Our results add to the body of evidence on the association between household wealth and awareness of HIV/AIDS (Balk and Lahiri 1997; Pallikadavath et al 2005, and Rahman 2007). Our analysis shows that there is positive relationship between the risk factors and awareness about HIV/AIDS. The odds of being aware of HIV/AIDS were statistically significant and higher for women than men.

From our analysis it can be observed that illiterates, SC, Hindus, and rural people are more likely to have low level of awareness and knowledge about HIV/AIDS. Individuals in Manipur are much more likely to be aware of HIV/AIDS than other states. The study reveals that factors associated with the awareness and knowledge of HIV/AIDS varies among the Indian states. As mentioned above, in the absence of medicines for HIV/AIDS, knowledge about the disease is the only way to prevent the HIV infection. If this is so, then the groups who have less awareness and knowledge about HIV/AIDS will be more prone to the infection. In the next chapter we discuss the patterns and distribution of HIV prevalence in the selected five states.

Chapter III

Patterns and Distribution of HIV Prevalence

3.1 Introduction

The estimated prevalence of HIV in India experienced a downward revision in 2007, but the patterns and distribution of HIV in the general population remains unclear. As we mentioned in the first chapter, there is a huge variation in the spread of HIV within the country, with the highest prevalence seen in Maharashtra, the southern states of Andhra Pradesh, Karnataka, Tamil Nadu and northeastern state of Manipur. The majority of HIV transmission is driven by three high-risk behaviours, such as, unprotected commercial sex, sharing of injection equipment, and unprotected homosexual relations. Suhitha Chopra (1998) argues that HIV can spread through three main routes. The first route is through sexual activity - heterosexual and homosexual intercourse when a partner is infected. The second route of transmission is through infected blood and blood products, contaminated needles and syringes. The third one is through an infected mother to her child during pregnancy, at birth or shortly after birth. The majority of infections continue to occur among populations who engage in such risk behaviours and their immediate sexual partners, with men who buy sex and their female partners constituting the largest group of people living with HIV (Tobi Saidel et al., 2008). The time lag for HIV infection to spread from high risk groups to low risk groups (general population) is between three to five years, as the infection will spread from CSWs to their clients which act as the bridge population and then to wives of these clients during this period of time.

As far as India is concerned, not many studies have considered the prevalence of HIV/AIDS among the general population (both men and women). However, a few studies have examined the prevalence of HIV/AIDS among special groups, namely, Men who have Sex with Men (MSM), clients of sex workers and PLWH, etc. Lucia Corno and Damien de Walque (2007) have done a study among couples in Lesotho. They observed that education appears to be an important

aspect of preventing of HIV infection and adopting less risky behaviour. The study observed that the pattern of HIV infection by educational attainment and wealth index was not linear. They have reported that married women who engage in extra-marital sex without using a condom were more vulnerable to HIV infection.

A study conducted among people attending for Sexual Transmitted Diseases (STD) in Pune, India (Rodrigues J et al., 1995) observed that, 60 per cent of the women were sex workers and 90 per cent of them had contact with sex workers during the three preceding months. They further observed a high prevalence of HIV-1 among women who were not sex workers. In addition, they noted that high risk sexual behaviour, including lack of condom use and number of sexual partners, was common and associated with high prevalence of HIV-1 infection in their study area. Go F Vivian et al (2004) conducted a study among Men Who Have Sex with Men in Chennai slums. They reported that MSM were at greater risk of HIV infection than non-MSM. The interesting finding was that none of the socio-demographic characteristics such as age, marital status, education and number of years of current residence were significantly associated with the infection.

Subramanian T et al (2008) conducted a study among the male clients of female sex workers in Andhra Pradesh, Tamil Nadu and Maharashtra, India. They reported that around 64 per cent of their samples had non-paying female sexual partners and 61 per cent of them had had sex with more than one FSW partner the previous month, while 39 per cent had engaged in four or more sexual acts with FSW last month. They have reported that those who have engaged in sexual activity at an early age (before 18 years old) in first paid sex were significantly associated with inconsistent condom use.

Marissa L. Becker et al (2007) conducted study in Bagalkot district of Karnataka to assess the prevalence and determinants of HIV infection among the general population. They found that the median age at first sexual intercourse was 22.5 years and 15.6 years for men and women respectively. They also found that rural

respondents were more likely to have had their first sexual experience at a younger age compared to their urban counterparts. Almost 70 per cent of their sample had never seen a condom. Helen L. Munro et al (2008) did a study in Mysore, and present HIV and STI prevalence estimates for the general population of this district. They examine the differences in the distribution of risk factors associated with HIV prevalence among men and women. They report that only around 72 per cent of their sample ever had sex, that only 3.8 per cent of the respondents reported using a condom at first intercourse and that this proportion was significantly higher in urban areas (5.6 per cent) compared to the rural areas (3.8 per cent).

Suniti Solomon et al (1998) conducted a study in Tami Nadu to understand the factors associated with the prevalence of HIV- 1 and HIV-2 infection in the urban and rural areas of Tamil Nadu. They report that urban truck drivers/cleaners are more vulnerable than rural truck drivers/cleaners to HIV infection. Of the total urban and rural truck drivers/cleaners, 64.7 per cent of urban drivers/cleaners and 16 per cent of rural drivers/cleaners were HIV positive. Newmann et al (2000) conducted a study among HIV-infected women at an HIV/AIDS centre in Chennai, India. They report that ninety-four (82 per cent) of the married, monogamous women had husbands known to be infected with HIV. Thus, their only HIV risk factor was heterosexual sex with their husbands.

All the above studies analyzed the HIV prevalence among particular groups of the population. Not many studies were conducted among the general population. To fill this gap, this chapter attempts to analyze the patterns and distribution of HIV prevalence among men and women in India.

3.2 Methods

As we mentioned earlier, we have used NFHS-3 data to study the patterns and distribution of HIV/AIDS. Several indicators have been selected to identify the determinants. Educational attainment is classified into the following categories – people who are illiterate, with primary education, with secondary education, and with higher education. The wealth index was defined in terms of ownership of

material possessions by the household. It is classified into five categories such as poorer, poor, middle, rich and richest. Broadly, people have been identified as belonging to Scheduled Castes (SC), Scheduled Tribes (ST), Other Backward Class (OBC), and others. Employment status was defined as either employed or unemployed. Finally, place of residence was classified into Urban and Rural. To understand the demographic characteristics, we have chosen a few indicators such as age group (young adults aged 15-24, adults aged 25-40, above forty), marital status (never married, currently married and divorced/separated) and behavioural characteristics. For behavioural characteristics, we included sexual behaviour/knowledge characteristics that are known to increase susceptibility to HIV, such as total number of sexual partners during lifetime (three categories representing one partner, two to four partners and five or more partners), whether condom used during last sexual intercourse, STD symptoms in the past twelve months, knowledge about HIV/AIDS, and finally age at first intercourse.

3.3 Prevalence and Determinants of HIV Infection by Socioeconomic, Demographic, and Behavioural Status

Before the conduct of NFHS-3, the estimation of HIV infection in India was based on the sentinel sites[19]. The figures on India's HIV burden were based on data from the annual rounds of the sentinel sites. This meant that, for many years, the country had been overestimating the prevalence of HIV (percentage of infected people in the population) as well as the burden of the disease (the total number of people infected). However, the estimation of HIV burden based on NFHS-3 would be approximately true because it was based on data collected from among the general population (Arvind P et al., 2006).

[19] In order to measure the extent of infection, the National AIDS Control Organization estimates in different sites known as sentinel sites across the country among high and low risk groups. High-risk groups are patients at sexually transmitted disease (STD) clinics, and group with high - risk behaviour such as female sex workers (FSW), men having sex with men (MSM), and injecting drug users (IDUs).

Table: 3.1 Probability weighted number of participants and HIV prevalence for five high prevalent states by socioeconomic, demographic, and behavioural indicators from the 2005-2006 India National Family Health Survey 3 sample (n = 57582)

Indicators	Andhra Pradesh	Karnataka	Maharashtra	Manipur	Tamil Nadu	Total
Socio economic status						
Education						
Illiterate	10.4	12.3	7.8	8.6	5.1	9.4
Primary	13.9	7.2	9.1	7.8	5.7	9.0
Second	8.7	4.1	5.3	12.2	2.7	6.3
Higher	1.9	4.8	3.8	12.1	0	4.4
Wealth Index						
Poorer	6.6	19.5	8.8	13.2	13.4	11.4
Poor	12.4	7.2	5.5	8.8	0.6	7.0
Middle	9.5	5.1	5.7	10.5	2.4	6.7
Richer	13.7	5.1	7.7	11.2	4.9	8.7
Richest	3.4	4.8	4.9	13.4	Nil	4.6
Employment Status						
Unemployed	5.2	4.9	3.0	9.7	1.9	4.4
Employed	11.8	7.9	7.8	12	4.1	8.7
Caste						
SC	15.1	9.5	5.7	2.0	4.0	7.9
ST	6	6.3	6.9	13.3	12.3	8.6
OBC	10.9	6.3	7.2	6.0	3.3	6.6
Others	5.1	6.0	5.3	13.5	Nil	7.0
Place of Residence						
Urban	9.1	5.4	5.7	12.6	2.2	6.3
Rural	10	7.7	6.5	10.4	4.4	7.9
Religion						
Hindu	9.9	6.5	6.8	10.6	3.7	7.3
Muslims	6.4	3.9	1.9	8.8	0	4.3
Christian	14.7	10.7	0	13	1.4	10.3
Buddhist	Nil	Nil	5.2	Nil	Nil	5.2
Others	0	0	6.3	12.6	0	10.5
Demographic						
Age						
Young Adult (15-24)	3.8	2.6	2.4	4.0	1.2	2.8
Adult (25-40)	15	9.4	8.8	17.5	4.2	10.5
Above forty	8.5	8.0	6.8	9.7	4.1	7.2
Marital Status						
Never Married	3.7	2.4	1.8	8.3	1	3.3
Currently	9	7.2	6.7	10.8	3.5	7.2
Divorced	54	33.9	35.6	54.2	14.8	37.0

Source: - National Family Health Survey 2005 - 06, India

Continued...

Table: 3.1 Probability weighted number of participants and HIV prevalence for five high prevalent states by socioeconomic, demographic, and behavioural indicators from the 2005-2006 India National Family Health Survey 3 sample (n = 57582)

Indicators	Andhra Pradesh	Karnataka	Maharashtra	Manipur	Tamil Nadu	Total
Behavioral Characteristics						
Ever heard of AIDS						
No	6.1	7.0	4.4	22.2	2.5	5.9
Yes	10.4	6.6	6.4	10.9	3.3	7.3
Condom used at last sex						
No	9.6	7.6	6.4	10.1	3.4	7.3
Yes	26.1	15.9	6.2	39.1	4.6	13.4
Missing	9.4	4.8	5.6	10.3	3.1	6.4
Sexually Transmitted Diseases						
No	9.7	6.7	6.1	11.0	3.2	7.1
Yes	35.7	50.0	21.3	24.4	90.9	21.0
Life time Partner						
One	9.5	7.4	7.6	10.6	3.7	7.6
Two to four	23.1	29.1	16.6	44	8.0	22.4
Five or More	17.5	32.3	31.6	72.7	20.6	24.1
Missing	3.0	1.4	0.5	6.7	1.0	2.3
Over all	9.67	6.72	6.06	11.17	3.36	7.2
Total (N)	12932	10120	15532	7995	11003	57582

Source: - National Family Health Survey 2005 - 06, India

3.4 HIV Prevalence by Educational, Wealth, Employment and Place of Residence

Table 3.1 shows HIV prevalence among individuals by socioeconomic, demographic, and behavioural characteristics for five states as together and at the individual states level. Our analysis shows that there is an inverse relationship between educational attainment and HIV prevalence for five states as a whole. However, the relationship is not uniform across the states in India. In the case of Manipur, the relationship between HIV prevalence and educational attainment is positive. From table 1 it is observed that there is an inconsistent relationship between the wealth index and HIV prevalence in India as a whole as well as in individual states. But HIV prevalence in Manipur is the highest amongst all the categories except for those who belong to the poor category[20]. HIV prevalence is

[20] HIV prevalence among the poorer category may be due to sexual contact, but among middle, richer and richest categories it is more due to the IDUs. This is because people from these three categories are able to afford the cost of the drugs.

high among those who are employed. We find that, except in the state of Manipur, HIV prevalence among those who live in the rural area is higher than among those living in the urban area. In Manipur, HIV prevalence is higher among urban dwellers[21].

3.5 HIV Prevalence by Marital Status, Condom use, and Life-time Partner

It is learnt from the analysis that HIV prevalence among people who are divorced/separated is higher than the 'currently' and 'never married' categories in all the states (Table 3.1). In all the selected states, it is observed that HIV prevalence is high among those who used a condom at last sexual intercourse. This does not mean that HIV infection was caused by using a condom, as it is not known that whether these individuals had used condoms earlier. From our analysis, it is observed that there is a positive relationship between the total number of lifetime sexual partners and HIV prevalence.

3.6 Statistical Analysis

A binary logistic regression analysis was carried out using SPSS 16.0 to estimate the strength of associations between potential risk factors and HIV Infection for both men and women separately. In this model, the dependent variable is blood test result (1=if Positive and 0=if Negative), which is the dichotomous/binary variable. The independent variables are education level, wealth indices of household, employment status, caste, rural/urban residence, religion, age, and marital status, knowledge about AIDS, usage of condom, STD, life time sexual partner, and age at first intercourse. Among the independent variables, employment status, place of residence, ever heard of AIDS' and Sexually Transmitted Diseases are the dichotomous/binary variables, while all the others are polychotomous (or multiple-category) response variables. Many participants did not provide a response to the questions on number of lifetime partners, and condom use at last sexual contact. In order to retain their otherwise valuable

[21] The main reason behind this could be that in Manipur, access to drugs in urban areas is easier than in rural areas.

information in the analyses, we created 'Missing' categories for these two variables. In both the models, we have conducted the multicollinearity test for both men and women separately and found the tolerance and VIF (Variance-Inflating Factor) to be less than .1 and 10 respectively for all the variables.

Table 3.2, Adjusted odds ratios and 95 Per cent credible intervals for the association of socioeconomic, demographic, and behavioural indicators with positive HIV status among men (n = 14777) and women (n = 15619)

Indicators	Odd Ratios		95 Per cent Confidence Interval	
	Men	Women	Men	Women
Socioeconomic				
Education				
Illiterate	2.94**	3.34	[1.15 - 7.54]	[0.70 - 15.75]
Primary	2.92**	2.99	[1.19 - 7.16]	[0.63 - 14.17]
Second	2.03*	1.89	[0.91 - 4.52]	[0.43 - 8.210]
Higher [R]	1.00	1.00	-	-
Wealth Index				
Poorest	1.24	1.45	[0.53 - 2.88]	[0.52 - 4.06]
Poorer	1.005	0.85	[0.46 - 2.16]	[0.31 - 2.35]
Middle	0.83	0.94	[0.41 - 1.68]	[0.37 - 2.37]
Richer	1.43	1.71	[0.82 - 2.68]	[0.76 - 3.86]
Richest [R]	1.00	1.00	-	-
Employment				
Unemployed [R]	1.00	1.00	-	-
Employed	1.84	1.07	[0.35 - 2.03]	[0.65 - 1.77]
Caste				
SC [R]	1.00	1.00	-	-
ST	0.87	0.53	[0.39 - 1.92]	[0.18 - 1.53]
OBC	0.85	0.89	[0.52 - 1.40]	[0.50 - 1.58]
Others	0.73	0.87	[0.40 - 1.34]	[0.44 - 1.75]
Place of Residence				
Urban [R]	1.00	1.00	-	-
Rural	1.09	1.24	[0.70 - 1.68]	[0.74 - 2.09]
Religion				
Hindu [R]	1.00	1.00	-	-
Muslims	0.55	0.49	[0.22 - 1.37]	[0.16 - 1.45]
Christian	1.20	0.81	[0.49 - 2.92]	[0.26 - 2.53]
Buddhist	0.68	0.33	[0.18 - 2.56]	[0.04 - 2.45]
Others	0.44	1.51	[0.01 - 19.5]	[0.08 - 25.9]

Continued...

Table 3.2, Adjusted odds ratios and 95 Per cent credible intervals for the association of socioeconomic, demographic, and behavioural indicators with positive HIV status among men (n = 14777) and women (n = 15619)

Indicators	Odd Ratios		95 Per cent Confidence Interval	
	Men	Women	Men	Women
Demographic				
Age				
Young Adult (15-24)[R]	1.00	1.00	-	-
Adult (25-40)	2.31**	1.3	[1.04 - 5.10]	[0.20 - 8.33]
Above forty	1.44	0.45	[0.60 - 3.47]	[0.06 - 3.20]
Marital Status				
Never Married [R]	1.00	1.00	-	-
Currently	1.03	0.24	[0.38 - 2.75]	[0.001 - 52.2]
Divorced	2.69*	2.77	[0.86 - 8.42]	[0.01 - 566.4]
Behavioural				
Ever heard of AIDS				
No [R]	1.00	1.00	-	-
Yes	0.43*	1.17	[0.17 - 1.09]	[0.66 - 2.08]
Condom used at last sex				
No [R]	1.00	1.00	-	-
Yes	1.72	0.98	[0.74 - 3.94]	[0.17 - 5.41]
Missing	2.38***	0.65	[1.23 - 4.61]	[0.28 - 1.49]
'Life time Partner				
One [R]	1.00	1.00		
Two to Five	1.72**	5.8***	[1.09 - 2.70]	[2.35 - 14.39]
More than five	2.33**	59.5***	[0.98 - 5.50]	[6.08 - 582.8]
Missing	-	-	-	-
Sexual Transmitted Diseases				
No [R]	1.00	1.00	-	-
Yes	3.85	3.733	[0.79 - 8.68]	[0.74 - 18.71]

Note: ***P<0.01, **P<0.05 and *P<0.10 R = reference category

Source: - National Family Health Survey 2005 - 06, India

3.7 Socioeconomic Patterning of HIV Prevalence

Table 3.2 presents the adjusted odds ratios (ORs) and the 95 per cent confidence intervals (CIs) for the risk of being HIV-positive associated with individual demographic characteristics, socioeconomic indicators, and behavioural risk factors among men and women, separately. Compared to those with higher education, men with no education (OR 2.94, 95% CI 1.15–7.54), primary education (OR 2.92, 95% CI 1.19–7.16) and those with secondary education (OR 2.03, 95% CI 0.91–4.52) have higher odds ratio of being HIV-positive. Women show a similar pattern; those with higher education are associated with a

reduced risk of being HIV positive, whereas women with no education or primary education are associated with an increased risk of being HIV-positive (Table 3.2). These results, however, are statistically significant for men but not for women. Compared to the richest quintile, the odds ratio of being HIV-positive increased by 43 per cent and 71 per cent in the rich category for men and women, respectively, and by 24 per cent and 45 per cent for men and women in the poorest quintile. These results, however, are also not statistically significant.

3.8 Demographic and Behavioural Patterning of HIV Prevalence

Compared to men young adult, adults (OR 2.31, 95% CI 1.04-5.1) and above forty (OR 1.44 95% CI 0.60-3.4) have higher odds ratio of being HIV-positive. But, this variable is not statistically significant. Taking marital status, only divorced/separated status for both men and women is a strong predictor of HIV status, though this is statistically significant only for men and not for women. Condom use at last time of sex was associated with reduced odds of being HIV-positive among women but not for men, although this result is not statistically significant. There are no statistically significant relationships between HIV status and the following indicators regardless of gender: employment status, caste, place of residency, religion, and Sexual Transmitted Diseases as compared to their respective reference groups.

3.9 Discussion and Conclusion

India is a very low HIV prevalence country, but in terms of absolute numbers, it has a large number of infected people. The epidemic may be concentrated in particular states and in socially disadvantaged groups who mainly suffer an educational disadvantage, regardless of gender. Our analysis reveals that there is an inverse relationship between individual education attainment and HIV prevalence. Our result coincides with the evidence of the association between individual educational attainment and HIV positive status for both men and women. The highest HIV prevalence exists among individuals with either primary or secondary education in most countries of the world. Mishra et al (2009) conducted a national household survey by taking a sample of 19 countries

and found that, out of them, six countries had high HIV prevalence among those who have completed at least secondary education. On the other hand, eight countries were seen to have high HIV prevalence among those who completed primary education. Some Indian studies have observed that the HIV prevalence decreases as the educational level increases (Solomon et al 1998, Marissa L et al 2007, Perkins J et al 2009).

There is an inconsistent relationship between the household wealth index and HIV prevalence. Our results add to the body of mixed evidence on the association between household wealth and HIV. Perkins J et al (2009) have observed that in India there is an inconsistent relationship between household wealth indices and HIV prevalence. Some argue that poverty is a factor which leads to HIV infection (Whiteside A 2002, Beegle K et al 2009, Aavert et al 2001, Shah et al 2001, Bloom et al 2002, Lagarde et al 2003 and Boerma et al 2003). On the other hand, Mishra et al., 2009 found that in the majority of countries, HIV prevalence increases with the amount of household wealth. In their survey of 19 countries, HIV prevalence is high in 12 countries among individuals in the highest position of the household wealth index, while in four countries HIV prevalence is high among those in the fourth (next-highest) wealth quintile. In the African countries like Senegal and Ghana, HIV prevalence is highest in the third quintile.

In our analysis, there is positive relationship between total lifetime sexual partners and HIV prevalence. The odds of being HIV-positive are more statistically significantly for women than for men. Perkins J et al 2009 and Mishra et al 2009 have observed the same relationship between the lifetime partner and being HIV positive in India. This may be due to the fact that the probability of a woman getting the infection from an infected man through sexual intercourse is higher than the possibility of a man getting the infection from an infected woman (Nag 1996). If a condom is used as a preventive method, then the lifetime sexual partner will become irrelevant. Kamal and Huda (2008) argue that the correct and consistent use of latex condoms can reduce the risk of transmission of HIV, some other STIs, and of unintended pregnancy. Santhya et al (2007) argue that

countries like India, where marriage marks sexual initiation for girls, but not necessarily for boys, early marriage may expose adolescent girls to the risk of acquiring STIs or HIV. Young married women are likely to have unprotected sex with their husbands because of the pressure to prove their fertility and misconceptions about condom use within marriage. This is true in the case of pre-marital and extramarital sexual relations. In our analysis, the interesting finding is that HIV prevalence is high among those who used condoms during last sexual intercourse.

The above analysis shows that there is an inverse relationship between individual education attainment and HIV prevalence. On the other hand, there is positive relationship between total lifetime sexual partners and HIV prevalence. Still, an inconsistent relationship exists between the household wealth index and HIV prevalence. The other finding is that HIV prevalence is high among those who used condoms during last sexual intercourse. Also, it is not known that whether these individuals had used condoms during previous sexual intercourse. It may be observed from our analysis that illiterates, Scheduled Castes, Hindus, and rural people are more vulnerable to HIV infection in all the four states, while in Manipur it is just opposite. In Manipur, categories such as the more educated, richer and richest, Christian and other religions, and rural population are more vulnerable to HIV infection. Our study observes that in all the four Indian states except Manipur, illiterate, poorer and poor, and rural people are more vulnerable to HIV infection. However, in Manipur, people who have secondary and higher education, the richer and richest, and urban people are more vulnerable to HIV infection. The study reveals that factors associated HIV prevalence do not remain the same across the states, therefore regions/state specific policies and interventions are needed to combat the spread of HIV/AIDS in India.

Chapter IV

The Socio-economic Impacts of HIV/AIDS at the Household Level

4.1 Introduction

So far we have discussed about the awareness, knowledge and prevalence of HIV/AIDS in India. Another important aspect of our study is to explore the impact of HIV/AIDS and hence this chapter is designed to deal with it. In doing so, we confine it to unearth the socio-economic impacts of HIV/AIDS on households and at the individual level. This disease has both the macro and micro economic impacts. At macro level, it affects every sector of the economy and at the micro level it affects the households. As stated in previous chapter, this is a disease that affects the most productive age group of the population. At the household level, the other non-infected members, mostly the dependents, must contend not only with an emotional loss, but also with medical and funeral expenses, and the loss of income and services that the infected adult member would otherwise contributes. . As we mentioned in the introduction chapter, sometimes, the household experiencing an adult death draws on its assets to manage the shock inflicted by this disease. It is very difficult to cope with the low level of assets after the death of the HIV infected adult in prime age (Greener, 2004).

HIV/AIDS affects all assets of infected households - human, financial, social, physical and natural. The First and most immediate impact of HIV fall on human capital (sickness or death). With respect to human capital, AIDS is capable of generating new poverty as the affected household suffers a sudden fall in their total household income owing to the diversion of the household's resources towards caring for those affected, or total loss of income due to death of a breadwinner (Serpell, 1999). Secondly, HIV/AIDS affects the household's financial capital. When the household is faced with the costs associated with morbidity and mortality of HIV/AIDS, they cope with past savings, borrowing

money (from neighbours, relatives, friends and money lenders), and taking additional loans with high rate of interest (Koestle 2002). It is estimated that there is a decline of households' income between 48 per cent and 78 per cent when a household member dies of HIV/AIDS, which is not inclusive of the funeral cost (Walker 2002). In addition to all of these, the HIV/AIDS also has social costs and affects the social capital of the AIDS infected people. This refers to the stigma and discrimination related to the disease. The rate at which friends and relatives abandoning/excluding the HIV infected person are very high (Masanjala, 2007).

Basu et al (1997) have done a study on the household impact of adult morbidity and mortality to mainly understand the impact of adult illness and death on households, as opposed to the impact on the national economy. To them, (i) the infected household try to manage their economic requirements on their own to the maximum possible extent otherwise they are forced to depend on their friends and relatives. However the success of such dependency is strongly influenced by the local institutional setup where the socio-cultural factors have a main say. (ii) Household problems are identified to be so severe in the case of nuclear family as the entire responsibility/burden of nursing the patient and running the family falls on to the wife.

Das et al. (2006) have done a study on Economic Cost of HIV and AIDS in India. They reported that the morbidity of HIV males is significantly higher than that of HIV females, which may reflect that usually husbands are infected earlier. They also found that the HIV families have lower physical health as compared to non-HIV families. They reported that most of the families experienced a loss in income following the HIV diagnosis, an increase in medical expenditures, and a curtailing in nonmedical expenditures. Two thirds of families received support from relatives. In many cases, the increased financial needs (owing to lower income and higher expenditures) were financed by liquidating family assets or borrowing from other family or moneylenders. The per capita incomes of the HIV and non-HIV families are not significantly different from each other.

Families headed by widows have the lowest income. In comparing married families with HIV and families headed by widows, it is interesting to note that while income falls for both families, per capita consumption does not. The main reason for this is likely the rather large amounts of net external funding.

A study by ILO (2004) assessed the Socio-economic Impact of HIV/AIDS on People Living with HIV/AIDS (PLWHAs) and their families in India. They conducted it in four states and found that the people are from economically poor. Their average monthly expenditure on food and treatment increased substantially and in the income also declined by one-third. A study by Duraisamy *et al. (2003) on* the economic impact of HIV/AIDS in patients and households in South India also confirmed the same findings of ILO (2004). Duraisamy highlighted that the medical expenditures constituted a significant economic burden on a sample of affected households in south India, with roughly 40-70 per cent of AIDS-related expenditures being financed by borrowing. While studying the economic impact of HIV/AIDS at household level in India Gupta (1997) found that around 22 per cent of annual expenditure is spent on health. It was observed that majority of the respondents reported that they spent their health expenditure out of their own packets. Singh (2003) assessed the socio-economic impact of adult deaths due to AIDS on households and their coping strategies for Sangli district in Maharashtra, India and found that the households with HIV/AIDS related deaths were instrumental for the depletion of their savings, expenditures on consumer durables. They had to sell their assets to supplement income. The worst was that they had to withdraw their children from school too.

In general we do not have many studies at the micro level examining the socio-economic impacts of HIV/AIDS at household level. Hence in this chapter we intend to fill in this research gap. In the previous chapter we have discussed about the awareness, knowledge and prevalence of HIV/AIDS for theFive high prevalence states in India. Nevertheless, to study the socio-economic impacts of HIV/AIDS, we have restricted our analysis only to Tamil Nadu mainly for want of time and familiarity with the region. Within Tamil Nadu, Tirunelveli is

notified as a high prevalence district by the NACO. Within the district, the District Positive Network (i.e. DPN) identified Nangunneri Block as a Block with high HIV prevalence. It is for these reasons we have also chosen the Nangunneri Block for our micro level study as the case in Tamil Nadu.

The main objective of this chapter is to study the socio-economic impact of the HIV/AIDS epidemic on the households and the coping mechanisms adopted by the affected households. To understand this, we have compared the infected household's characteristics with that of the non-infected households and selected the following characteristics for this purpose. Characteristics selected are: sex of the household head, marital status, educational attainment and occupational structure. To analyse the quantitative and qualitative aspects we have used the following variables such as income, expenditure, borrowing, consumption, savings and household assets, coping strategies and finally the stigma and discrimination attached to this disease.

The next section 4.2 deals with the sampling methods and collection of data and the profile of the drawn sample households. The third section deals impact of HIV/AIDS in an economy. The fourth section deals with the income and expenditure of the households and the last section deals with the coping mechanisms available for affected households and stigma and discrimination of HIV/AIDS.

4.2 Sampling and Data Collection

Identification of the respondents/participants for the study, particularly in the affected households, requires ethically meticulous research conduct. Because due to many false notions, myths and secrecy surrounding the disease and the fear of stigma, people living with HIV/AIDS will not voluntarily cooperate, as a respondent, in the normal course. Given such situation selection of samples/respondents, convincing for an interviews are the real challenge that any study of this nature need to face. The current study is in no way exception to this reality. The researcher, only after winning over the confidence of the

respondent got them on a voluntary basis and the essential information pertaining to the current research were obtained systematically.

The role of different NGOs in Tirunelveli were so crucial that the researcher had to met them in the initial phases of the research initially to convince them of the very purpose of the present study. Otherwise permission to meet the respondents can be denied by the NGOs. Their introduction of the researcher to the HIV infected people indeed felt as a must in approaching the respondents of the Nanguneri Block.

The list of HIV/AIDS affected individuals was collected from District Positive Networks. From the list, we have randomly selected 75 infected households for this study. It accounts for 10 per cent of the HIV population in Nanguneri Block. If one or more member of the household was affected by HIV/AIDS, it is treated as the HIV-infected household. To capture the socio-economic impact of the infected households we have also selected 75 non-HIV households who are the neighbors of the HIV respondents (i.e. neighborhood sample) - to have them as the controlled group.

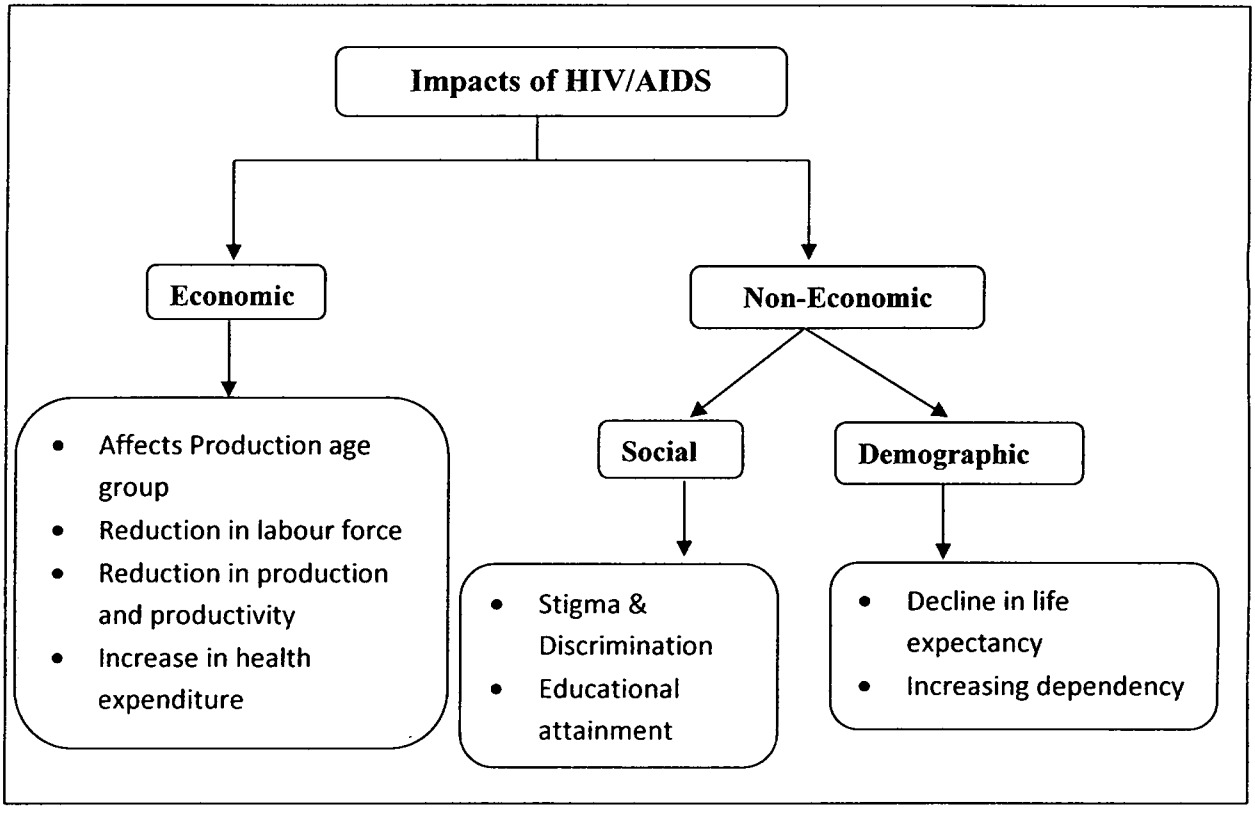
The same set of questionnaires were administered in the survey - one for HIV-affected households and another for non-infected households (See Appendix 4.1). Before finalizing the questionnaire for the HIV infected - households it was circulated to the NGOs for their feedback and based on their feedbacks the questionnaire was standardized. We conducted focus group discussion with individuals affected by the HIV/AIDS to collect qualitative data to understand their coping strategies and supports received from the government and NGOs.

4.3 Impact of HIV/AIDS on the Economy: A Conceptual Framework

AIDS affects all the three sectors (i.e. primary, secondary and tertiary sector) of the economy. People in the age group of 18-50 years are more prone to the HIV infection and play an important role in each sector of the economy. The impact of

HIV/AIDS in the economy is presented in figure (4.1). The impact of HIV/AIDS on the economy is broadly classified into two - 'economic' and 'non-economic'.

Figure 4.1 Impacts of HIV/AIDS for an Economy



The economic impact of HIV/AIDS is seen in the way it affects the productive age group, labour force, production, productivity and health expenditure of a country. The age composition of the infected individuals reveals that this disease mostly affects the productive age group (14 - 59 yrs.). In India, 90 per cent of the current infection is among people below 50 years. This has a significant implication for the overall economic and social development of the country. The consequences of the increasing dependency ratio in the population pyramid are alarming. Implication of it is realised in the reduction of the labour force affecting the supply of labour for agricultural activities and its productivity as well[22]. The disease also reduces the supply of labour force in many other sectors. It also

[22] Readers are reminded of not to get confused with the conventional arguments that in India the marginal productivity of agriculture labour (MP_L) is either zero or negative due to the high population pressure on land. Reduction in agriculture labour due to HIV infection, therefore, cannot be expected to increase the MP_L as it would reduce the population pressure on land. On the contrary, given the small and medium level of farm cultivation in the rural economy, the possibility of traditional knowledge on faming is not getting transferred to their descendants due to HIV deaths. Hence, the productivity is negatively affected due to the lack of farming knowledge.

substantially affects the demography, health, economy and social fabric of developing countries. Demographic impacts include lowering of life expectancy at birth [23](UNAIDS 2002), increasing death rate and increasing child mortality rates, resulting in a growing number of orphans. Lori Bollinger and Stover (1999) argue that HIV/AIDS also affects the educational attainment level of the country in two ways: firstly, by reducing the supply of experienced teachers due to illness and HIV-related deaths, and secondly, by increasing the number of school dropouts and decreasing school enrolment. Also, children may be kept from going to school in order to take care of the HIV affected family members.

4.4 Profile of Individuals

4.4.1 Profile of Sample Households and Characteristics of HIV/AIDS Affected Individuals

In this study, we interviewed 75 households each from HIV and non-HIV infected households. The aggregate sample of this survey consists of 150 households with 612 individuals. The 75 HIV households had 104 HIV positive individuals. All the 612 individuals of the 150 households were classified and tabulated according to the characteristics of gender, marital status, religion, education and occupation

[23] In sub Saharan Africa, the average life expectancy was reduced to 47 years from 62 years. In Botswana also, the life expectancy at birth dropped to a level that was not witnessed by the country since 1950.

Table 4.1 Socio-Demographic Characteristic of Participants, N-612

	Affected HHs		Non-Affected HHs		Aggregate Total	
	No	%	No	%	No	%
Gender						
Male	33	31.7	273	53.7	306	50
Female	71	68.3	235	46.3	306	50
Age						
Young Adult (<24)	14	13.5	297	58.5	311	50.8
Adult (25-40)	69	66.3	122	24.0	191	31.2
Above forty	21	20.2	89	17.5	110	18.0
Educational attainment						
Illiterate	22	21.2	67	13.2	89	14.5
Primary	30	28.8	181	35.6	211	34.5
Secondary	25	24.0	135	26.6	160	26.1
Higher	27	26.0	125	24.6	152	24.8
Castes						
SC	45	43.3	231	45.5	276	45.1
OBC	45	43.3	254	50.0	299	48.9
Others	14	13.5	23	4.5	37	6.0
Religion						
Hindu	84	81	457	90	541	88
Christian	20	19	51	10	71	12
Marital Status						
Never Married	15	14.4	301	59.3	316	51.6
Married	39	37.5	196	38.6	235	38.4
Widow/Divorced	50	48.1	11	2.2	61	10.0
Occupation						
Farmer	5	4.8	24	4.7	29	4.7
Agricultural Labour	21	20.2	120	23.6	141	23.0
Skilled/Semi-Skilled	5	4.8	31	6.1	36	5.9
Service	12	11.5	8	1.6	20	3.3
Beedi	13	12.5	70	13.8	83	13.6
Truck Drivers/Clears	1	1.0	8	1.6	9	1.5
Housewife	4	3.8	23	4.5	27	4.4
Student	13	12.5	92	18.1	105	17.2
Unemployed	2	1.9	15	3.0	17	2.8
Others	28	26.9	117	23.0	145	23.7
Total	104	17.0	508	83.0	612	100

Source: Primary Survey 2011.

Our sample interestingly and unexpectedly consists of equal number of men and women. However, the prevalence of HIV among women is higher than the men. This result coincides with the result of macro level analysis in chapter 3. . The HIV prevalence among women is two times higher than men. It is observed that HIV prevalence among the adult population is much higher than that of young adult and above forty age groups. Compared to Christians, Hindus are more vulnerable to HIV infection. The HIV prevalence among Widows and married people is higher than that of never married people. Nearly 37 per cent of the infected individuals are living with their spouse.

4.5 Socioeconomic Impacts

4.5.1 Gender

The gender distribution of the affected and non-affected household heads is given in Table 4.2. Around 65 per cent of the infected households are headed by women, which is almost two times higher than the households headed by males. On the other hand, the majority (93 per cent) of non-infected households are headed by males, while only 7 per cent are headed by females. This implies that the female heads of affected households had lost their spouse by this disease. It clearly shows that females are more vulnerable to HIV infection, which is also revealed by the macro level analysis in the previous chapter3. It is also important to look at the age distribution of the HIV-infected household heads.

Table: 4.2 HIV and Non-HIV sample population across gender

Sex of Household Heads	Households	
	Affected	Non-affected
Male	26 (34.7)	70 (93.4)
Female	49 (65.3)	5 (6.6)
Total	75 (100.0)	75 (100.0)

Source: Primary Survey 2011.
Note: Figures in bracket are percentage

4.5.2 Age Distribution

The age distribution of household heads by HIV/AIDS status is presented in table 4.3. The table suggests that HIV prevalence is high among the young (25-40 yrs.) households' heads (50% and 81% for men and women respectively). Out of 75 affected households, 26 households are headed by men and 49 by women. It is observed that the women heads are more vulnerable for this disease. There is a high variation of HIV prevalence among women household heads than that of men.

Table: 4.3 HIV and Non-HIV Sample Population across Age

Age	Sex of respondents of the affected HHHs		
	Male	Female	Total
Young adults (<25)	1 (3.8)	5 (10.2)	6 (8.0)
Adult (25-40)	13 (50.0)	40 (81.6)	53 (70.6)
Above 41	12 (46.2)	4 (8.2)	16 (21.3)
Total	26 (100.0)	49 (100.0)	75 (100.0)

Source: Primary Survey 2011.
Note: Figures in bracket are percentage

It is observed that adult (25-40 yrs.) household heads are more vulnerable to HIV infection. Though around 72 per cent of the households were headed by the adults (25-40 yrs), within this category women heads are more vulnerable to HIV infection than that of men heads. There are 49 households headed by women. Around 82 per cent of these women heads are in the adult age group (25-40 yrs). This is also important to mention that 10.2 per cent of the affected heads were run by women below the age of 25. Around 8 per cent of female household heads are in the above forty one age category. Further, more women HIV household heads were infected at a younger age than males. The majority of women heads are under the age groups of young adults (below 25 yrs.), and adults (25-40 yrs.), which shows that the family responsibilities are higher for women than men.

4.5.4 Marital status

Table 4.4 explains the marital status of the household heads by their HIV status. It is observed that around 95 per cent of non-affected household heads are living with their spouses compared to only 36 per cent of the affected household heads. Around 64 per cent of affected household heads are not living with their spouse; of these almost all are widows and they along with their children move to the house of widow's parents in search of securities.

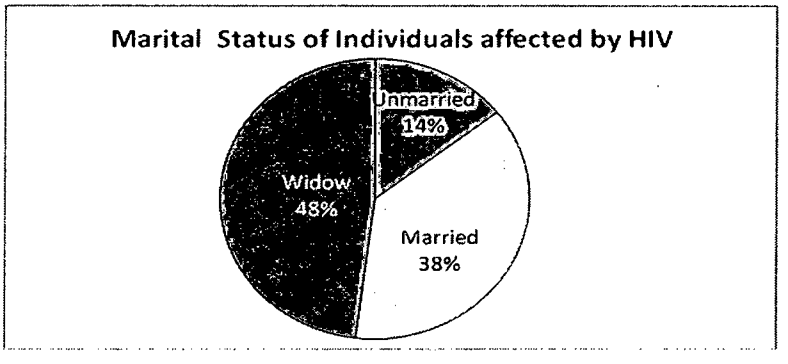
Table: 4.4 Distributions of Household Heads and Individuals by Marital Status

Marital Status of Heads of HHs	HIV Households	Non-HIV Households
Married	27(36.0)	68 (94.7)
Widowed	48(64.0)	07(05.3)
Total	75(100.0)	75(100.0)

Source: Primary Survey 2011.
Note: Figures in bracket are percentage

As a result, widows with dependent children became more vulnerable to poverty and become vulnerable to the socio-economic pressures. These widows are denied of their right to access to land, labour, inputs, credit, etc. For them, NREGA is becoming a major employment provider.

Figure 4.2 Marital Status of HIV-affected Individuals



Source: Primary Survey, 2011

Figure 4.2 show that marital status of HIV infected individuals. Our sample consists of 104 infected individuals; out of this, 14 per cent are unmarried. Of this, 12 per cent of the individuals are less than 15 years of age, and most of them are

students. The future of them is really a worrying factor. In the field survey we came across a specific and unique case of one HIV infected men marrying another infected woman.

4.5.5 Religion

In our sample, majority of the households were headed by Hindus and 93 per cent of them are infected with HIV and 81 per cent are non-infected. . In the case of Christians it shows a low level of HIV infection. However one need to be aware of their low sample size also (Table 4.5).

Table 4.5 Religion of Household head by HIV/AIDS Status

Religion	Household HIV status	
	HIV	Non-HIV
Hindu	70(93.3)	61 (81.3)
Christian	5 (6.7)	14 (18.7)
Total	75(100)	75(100)

Source: Primary Survey 2011
Note: Figures in bracket are percentage

4.5.6 Education

Across different educational categories the level of HIV prevalence almost remained without much difference as it can be evidenced from table 4.6. Because if the prevalence rate for illiterate is 29.3 per cent; the same stance at 25.3 per cent for the higher educational category. Hence we are compelled to observed that the HIV illness has no relation to the level of education although, the illiterate are more vulnerable to this disease as per the survey conducted.

Table 4.6 Household level of education by HIV/AIDS status

Level of Education of Head of HHs	Household HIV status	
	Affected	Non-Affected
Illiterate	22(29.3)	7(9.3)
Primary	16(21.3)	35(46.7)
Secondary	18(24.0)	17(22.7)
Higher	19(25.3)	16(21.3)
No of HHs	75(100.0)	75(100.0)

Source: Primary Survey 2011.
Note: Figures in bracket are percentage

4.5.6 Occupational structure

Table 4.7 explains the occupational structure of the household heads. While interpreting this table, we have to keep in mind that around 65 per cent of the HIV-infected household heads are women and most of them are widows. More than half of the non-HIV household's heads are agricultural labourers (52 per cent) and 14 per cent are skilled/semi-skilled workers. In the affected households, nearly 32 per cent of the heads are engaged in NREGA (National Rural Employment Guarantee Act) work. Two reasons behind this are that the work burden in NREGA is relatively low compared to the work of agricultural labourers (coolis) and that the workers are assured of the minimum subsistence wage. Also it is learnt from the respondents that most of the features of NREGA[24] are more suitable to them. However, the preference for NREGA work among the general population is low due to the complaint of less wages in NREGA (Albin T, 2011, Nair et al 2009).

Table: 4.7 Household heads by occupational structure

Occupations of HHs Heads	Household HIV Status	
	Affected	Non-affected
Farmer/Cultivator	5 (6.7)	10 (13.3)
Agricultural labour (Cooli)	18 (24.0)	39 (52.0)
Skilled/Semi-Skilled/Other	2 (2.7)	11 (14.7)
Beedi rolling	9 (12.0)	2 (2.7)
Service(NGOs)	11 (14.7)	2 (2.7)
Drivers/Truck/Cleaners	2 (2.7)	5 (6.7)
Others(like NREGA)	24 (32.0)	2 (2.7)
Un employed	4 (5.3)	4 (5.3)
Total	75 (100)	75 (100)

Source: Primary Survey 2011.
Note: Figures in bracket are percentage

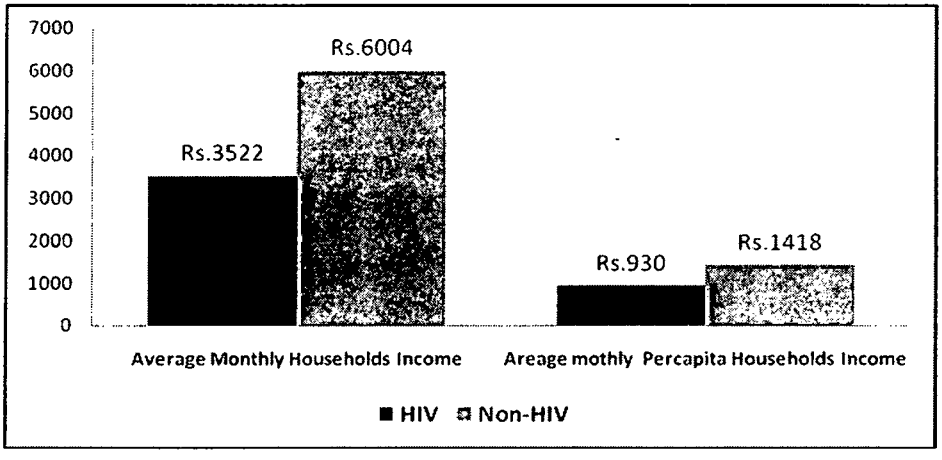
[24] For more details on the features of the NREGA refer to appendix 4.2.

Another important source of occupation for the HIV household heads is the NGOs. Nearly 15 per cent of the HIV infected household heads are women who are employed in different NGOs. The economic status of this 15 per cent of the households is relatively better than that of the other HIV-infected households.

4.6 Details of Households Income

To compute the average monthly incomes of household in our sample, data was collected on all major sources of income, including salary, wage and self employment. The earnings from various categories were then summed up to obtain monthly household income. The data shows that the HIV affected households have lower levels of income than that of unaffected households. Affected households are poorer than non-affected households, regardless of whether income is measured at the household level or individual level (Figure 4.3). There are also significant differences in the composition of the income of affected and non-affected households (Table 4.8). The HIV affected households are more dependent on non-employment sources of income (which consists primarily of government and NGOs grants).

Figure: 4.3 Incomes among HIV and Non-HIV Households



Source; Own calculation from Primary Survey 2011

From the above figure 4.3, it can be clearly observed that the income gap between HIV/non-HIV households is very high. The average monthly income of the unaffected households is double time higher than that of affected households.

There are two reasons for this. One is the poor physical condition of the affected members and the second, it is observed from the group discussion that, the maximum days they can work in a month would vary between 15 to 20 days only.

The second part of table 4.8 shows that composition of monthly income of affected and unaffected households. It is observed that the wage income is the main source of income for both affected and unaffected households. But the proportion is little low for non-infected households. The second important source of income is salary income. The share of salary income in total monthly income is high for infected households than non-infected households. This is due to around 15 per cent of the infected households heads are working in HIV/AIDS related NGOs. Another important source of income for infected households is pension (widow pension). The share of agricultural and allied activities in total income is high for non-infected households than that of infected households.

Table: 4.8 Income and its composition among HIV and Non-HIV Households.

A. Income	HIV	Non-HIV
Average monthly household income (in Rs)	3522	6004
Average monthly per capita household income (in Rs)	930	1418
Sample (n)	75	75
B. Composition of monthly income (%)		
Agricultural and allied activities	6.1	16.5
Trade	5.0	2.3
Self employment (Beedi rolling)	5.6	9.5
Salary Income	22.6	16.9
Wage Income (Cooli)	39.5	37.8
Transfer income	3.0	12.0
Other income (e.g. pension)	18.2	5.0
Total	100.0	100.0

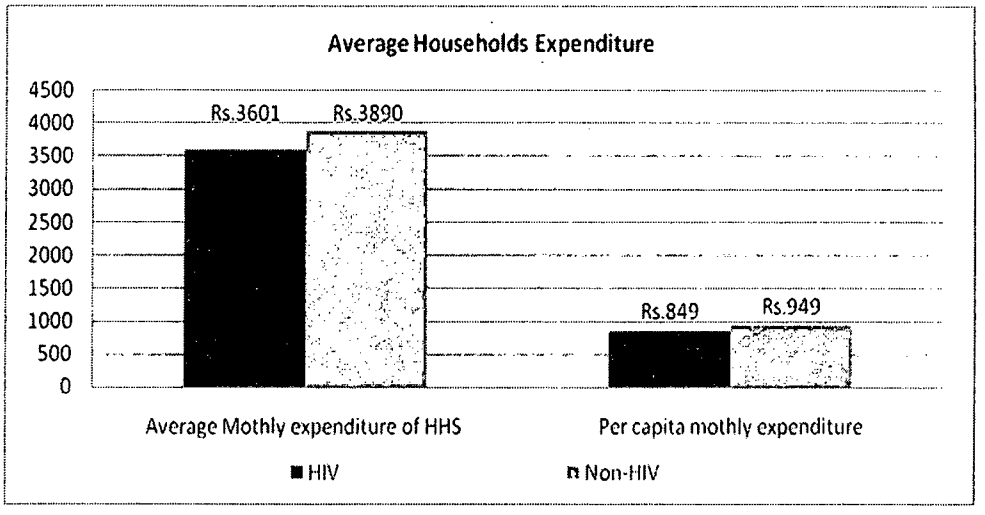
Source; Primary Survey 2011

4.7 Details of Households Expenditures

As in the case of income, affected households are also poorer than non-affected households when expenditure is used as a measure of socio-economic status (Table 4.9 and Figure 4.4). Average monthly household expenditure and average

monthly per capita expenditure is lower in the affected group of households than in the non-affected households.

Figure: 4.4 Average Monthly Households and Per capita expenditure



Source: Primary Survey 2011

The monthly expenditures of the households are clearly explained in table 4.9. Both the per capita and average household monthly expenditure are higher for non-affected household than for affected households. The income differences between affected and non-affected households are very high compared to expenditure. This implies that even though the affected households have lower income compared to the non-affected households, their expenditure is almost equal to the non-affected household. The only coping strategy they have used to overcome their vulnerability is borrowing from others. We have examined the expenditure pattern in detail. Expenditures are commonly classified as food and non-food expenditures. What we could learn from it is the average monthly expenditure of affected households is higher than average monthly income. It implies that they are managing this through borrowing. It is observed from the discussion that majority of the affected households are borrowing from SHGs. On the other hand the average monthly expenditures of non-affected households is less than their average monthly income. It implies that they are able to save.

Table 4.9 Composition of Monthly Expenditure for Affected and Non-affected Households

Expenditure items	Household HIV/AIDS Status	
	Affected	Non-affected
Food	62.8	50.2
Clothing	4.5	7.6
Education of Children	3.5	4.1
Transport	10.0	13.4
Medical	5.9	3.5
Electricity	3.1	3.1
Fuel	2.3	4.0
Entertainment	2.9	3.2
Others	5.0	10.8
Total	100.0	100.0

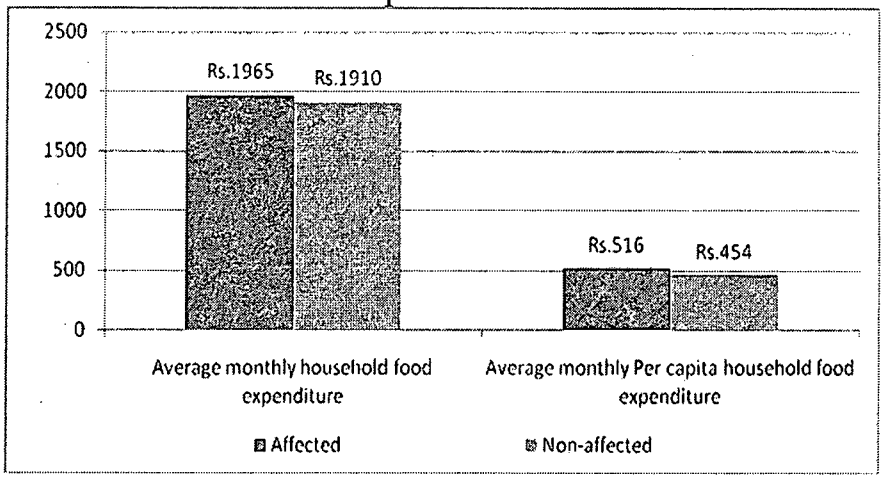
Source; Primary Survey 2011

The breakup of monthly expenditures of the households is shown in table 4.9. The table revealed that the share of expenditure for food (62.8 per cent) and medical (5.9 per cent) was greater for HIV affected households than non-affected households. On the other, the share of expenditure on cloth, education and other expenditure are lower for HIV infected households than non-infected households. When we look at the monthly food expenditure, it is higher for HIV household than the non-HIV households. From the group discussion it is observed that the affected people are advised to take nutritious food by doctors. Given this it is important to look at the composition of monthly expenditure on food by the households which is explained in table 4.10. As expected the data suggests that the proportion of expenditure on medical care was higher for affected households (5.9 per cent) than the non-affected households (3.5 per cent).

4.4.4 Composition of Food Expenditure

Both average and per capita monthly expenditure on food is high for the affected households compared to the non-affected households as shown by figure 4.5. The proportion of expenditure on food is higher for the HIV-affected households (62.8%) than the non-infected households (50%). This is because HIV patients have been advised intake of nutritious food by doctors and health workers.

Figure 4.5 Households Monthly Average and Monthly Per capita Food Expenditures



Source; Primary Survey 2011

Comparing households that were affected by illness with households not affected by illness, it was observed that the share of food expenditures of affected households is allocated to buy pulses, edible oil, and beverages was lower than the non-affected households. Instead, HIV affected households spend more on meat, vegetables and fruit compared to non-HIV affected households.

Table 4.10 Share of Monthly Food Expenditure among HIV and Non-HIV Households (%)

Items	Affected	Non-affected
Cereals	11.5	14.0
Pulses	3.0	4.2
Edible oil and vanaspati	2.5	3.3
Milk and milk products	8.0	8.2
Sugar	3.4	3.6
Vegetables and Fruits	38.1	35.6
Meat, Fish and Eggs	23.4	17.0
Beverages (Tea, Coffee etc)	3.0	6.0
Processed food like bread, biscuits, snacks etc	7.1	8.1
Total	100	100

Source; Primary Survey 2011

4.8 Households' Coping Strategies to Mitigate Medical Care for HIV-Related Illness

The social, economic and health burden imposed on the households by HIV/AIDS results in various coping strategies including disposal of assets, borrowing and withdrawal of children from school and alteration in economic

activities. The HIV-infected households have both types of resources, namely human capital (the number of family members, their education and their earning capacity) and physical capital (durable goods, productive assets and land). It is observed from the survey that HIV-infected households are using both human and physical capital as coping strategies.

Once individuals suffer from HIV/AIDS-related illnesses and ultimately die, their families are immediately affected by the reduction of their income and wealth. The reduction of income results from the reduced time spent on working and the increased medical expenditure. Other members of the same HIV family may also rearrange their time schedules to minimize the income loss so as to maintain their level of consumption.

Table 4.11 Sources of Finance for Financing Medical Care for HIV-Related Illness (%)

Coping strategies	HIV/AIDS affected households
Wage/Salary	16.0
Sell assets	17.3
Past savings/Dissaving	32.0
Borrowings	34.7
Total	100

Source; Primary Survey 2011

The data suggests that the majority of the affected households either sold their assets or borrowed to meet the medical expenses. Up to 17 per cent of households have sold their assets to meet medical expenses, while around 35 per cent of the households borrowed money. The sale of assets includes agricultural land, house, vehicles, livestock, and jewels, etc. For the households that borrowed funds or assistance, the study sought to examine the source of borrowing. We found that major source of borrowing was from friends, relatives, family members and moneylenders. Those who borrowed from moneylenders are paying a high rate of interest, which is higher than the other sources. Around 32 per cent of the households have used past saving as a main coping strategy. Whoever borrowed money from the moneylenders at high rates of interest burdened themselves with a heavy debt.

4.9 Asset Depletion Due to HIV/AIDS

It was estimated that the amount of average asset depletion by the HIV affected household was Rs.43, 706. It however ranges from Rs.5000 to Rs.4, 00,000. For majority of affected households, (40 per cent) the asset depletion was in the range Rs.25001 to Rs.50000. It is important to note that, around 9 per cent of the infected households had asset depletion amounting to more than Rs.100000 (see table 4.12).

Table 4.12 Asset depletion of affected households

Values asset depletion (in Rs)	No. of infected households
Less than 25000	20 (26.7)
25001 to 50000	30 (40.0)
50001 to 75000	6 (8.0)
75001 to 100000	12 (16.0)
More than 100000	7 (9.3)
Total	75 (100.0)

Source: Primary Survey 2011
Note: Figures in bracket are percentage

These findings reveal the important role played by formal/informal network of family, friends, neighbors, government, NGOs and the community in the financing of HIV-related health care services. The coping mechanisms and the type of support received by the affected households are tabulated in table 4.13.

Table 4.13 Types of support from NGO's for affected households

Types of supports	Number of HHs	%
Money	48	64.0
Clothing	8	10.7
Nutritional	14	18.7
Others	5	6.7
Total	75	100.0

Source; Primary Survey 2011

The data shows that out of 75 affected households, 64 per cent receive support from government in the form of money as widow pension. Of these, around 18.7 per cent of households received support from NGOs in the form of clothes, educational materials for their children and nutritional food. Only those who

have less than 300 CD4 (cluster of differentiation 4) count are eligible to get nutritional food. It comprises dates, biscuits, ragi, wheat, groundnut, Bengal-gram, etc. This is, however, not uniformly provided by all the NGOs as it very much depends on the funding agency's discretionary. Apart from this, all affected individuals were eligible to get nutritional/vitamin tablets. In addition, patients are also given counseling to ensure emotional and mental strength.

4.10 Vulnerability of HIV/AIDS among Women

In chapter 3, we have learned that women are more vulnerable for HIV prevalence. We therefore made an attempt to understand the gender aspect of AIDS. From our survey it is observed that most of the women received the HIV from their husband at their earlier age and became widows. . Majority of widows said, '...the society does not allow women live alone. The moment their husband dies they become an object to be watched. In the earlier stage of the infection, we had to put up with indecent comments from many of our relatives and even friends...' Once the adult male of household is infected with HIV, the whole responsibility of the household rests heavily on the woman. In our study, most of the women were found nursing their infected husband/other adults. It is in this process the women were forced to quit their regular jobs because of their nursing responsibilities. Women become the head of the household once their husband dies of HIV. In our study around 64 per cent of the HIV infected women respondents are the household heads. .

From the field survey it is observed that majority of infected women got married at younger stage mostly through the arranged marriage institutional setups. In the arranged marriage system, the girl does not know much about the background of the groom and also do not have the power to say no to the choices of their parents. Having lost the family assets in the process of nursing their HIV infected husband, they are even driven out of their home once they become a widow. If the widows do not have their parents the situation becomes further worse as they need to support not only the self but also the children. In some cases, the infected widows are not even able to visit their voluntary organizations

for treatments as they have to be absent from their very limitedly available bread winning activities on the days of their visits to the voluntary organization. If they stop or become irregular for their treatments it will cost their life without any delay - a very pathetic nature of life style to which they are thrown into.

4.11 Stigma and Discrimination Faced by HIV Patients

The social impact is learnt to be much worse than the economic impact. Social impacts are related to the emotional and physiological status of the individuals affected by this disease. The stigma and discrimination towards people living with HIV leads to severe consequences related to their right, health care services, freedom, self-identity and social interaction (Mawar, 2005). According to UNAIDS, "Discrimination against HIV/AIDS is one of the most significant human rights abuses and also slow down the full participation and integration of the people living HIV/AIDS in the society/community". To capture these aspects we have conducted a 'focus group' discussion among the people living with HIV/AIDS.

It is learnt from the survey that majority of the widow respondents disclose of their HIV status only among their very close family circle. It includes parents, spouse, andchildren to a very limited extent. This is mainly due to the fear of women/widow getting the stigma of "loose character" and being blamed/viewed as the donor of HIV infection to their husband even though the actual story is just the opposite. To quote incidents/cases in this context would be of worth.

1) Kayalvizhi (name changed) a HIV positive widow aged 27 said, *"...My in-laws say that, my husband (i.e. their son) got this HIV disease only from me. And they tell this to everybody. I sometimes think, why should I live with such insult? It is better to die. But I am still living only for my children"*

2) Shanmuki (name changed) a HIV positive widow aged 40 said She was married to a man 19 years ago. Her husband was a HIV carrier even by then but he and his family hidden all the information until the time of marriage. In the

course of her wedded life she came to be aware of all the facts from the doctors and by then she also received the HIV from her husband. She became a widow at the age of 30. She has three male children. Except for the 1st child all the other 2 children are also infected with HIV. She says after her husband's death, she was almost abandoned by her parents-in-law. To quote her, *"...after my husband's death, my mother-in-law and sister-in-law stopped talking to me. I was not allowed inside the kitchen. One day, when I wanted to enter the kictchen, my mother-in-law asked me to go to the church and comeback. But by the time I returned, I found the kitchen was locked and found my mother-in-law also had left the house."*

4.12 Conclusion

In this chapter, our attempt has been to analyse the socio-economic impact of AIDS on the households via a comparative framework involving affected and non-affected households. As we expected, affected households face more severe problems than the non-affected households in terms of socio-economic conditions. The prevalence of HIV among women is higher than the men. This result coincides with the result of macro level analysis in chapter 3. It is observed that HIV prevalence among the adult population is much higher than that of young adult and above forty age groups. The HIV prevalence among Widows and married people is higher than that of never married people. Nearly 37 per cent of the infected individuals are living with their spouse.

The resources in the HIV affected households have to be shared among larger numbers of mostly economically inactive persons (HIV victims) than is the case in non-affected households. Affected households spend more on food (%) than non-affected households. From the survey it is observed that majority of the people living with HIV/AIDS have to eat nutritional food to maintain the minimum level of CD4 count but they do not have the required financial resources or income to meet it.

Our analysis indentified different expenditure patterns between the households of HIV infected and Non-infected. In terms of the composition of regular household expenditure, the HIV infected households allocate relatively more to food and health care; and less to clothing and education when compared to non-

infected households. It is observed that borrowings and the utilization of the past saving are becoming the common coping strategies among the HIV affected households. In addition, they also rely heavily on government grants as an important source of income (i.e., widow pension). Non-affected households have a better standard of living than affected households, whether it is measured by income or expenditure. In sum, what we can say is that the HIV infected households have all possible reasons to enter into the status of severe poverty.

Chapter V

Summary and Conclusion

Over the last 30 years, HIV/AIDS has emerged as a major challenge to the health of millions, and ultimately to the development of the world. The impact of this disease is realised even in the demographic changes through mortality and morbidity. It is also capable of affecting every sectors of the economy from individuals and households to small and large business activities. HIV as an epidemic is capable of slowing down the economic growth, and reducing the per capita income of the country. As we had already mentioned in the text, though limited studies are available only among 'specific groups', in our knowledge, no studies are available on the general population. An overall observation made by different study is that the HIV prevalence among the 'bridge population' has declined but it is alarmingly on the rise among the general population. Therefore, in order to prevent the increasing HIV prevalence among the general population, it is important to analyse and identify the vulnerable groups among the general population. The present study basically did aim at this very end and in its due course we discussed about the socioeconomic impacts of in it too. Studies of this nature would be of much help to implement certain appropriate policy to protect them from such vulnerability.

Given the above context, we had the following objectives.

(1) to understand the pattern and distribution of awareness and knowledge about HIV/AIDS,

(2) to analyse the pattern and distribution of HIV prevalence, and

(3) to assess the socioeconomic impact of HIV/AIDS at the household and individual level.

To fulfill the First and second objectives, we have used data from the National Family Health Survey (NFHS-3) 2005 - 06, India. It is a large-scale household

survey conducted in a representative sample of households throughout the country. Based on the NFHS-3 data, we analysed the awareness, knowledge and the prevalence of HIV/AIDS in high prevalence states. To study the determinants of HIV/AIDS awareness, knowledge and prevalence we have used multivariate logistic regression analysis. The estimated odd ratios have been used for interpretation. The third objective of study is to analyse the socio-economic impacts of HIV/AIDS at the households' level. In the absence of secondary data on economic status, it was obtained by means of a field survey. The primary data was collected from Nanguneri block in Tirunelveli district, Tamil Nadu. This district is one of the six high HIV/AIDS prevalence districts in Tamil Nadu. We collected data from 75 HIV-infected households and 75 Non-HIV infected households to compare the socio-economic status of both sets. Basically, we tried to examine if there is any divergences between the households in terms of income, expenditure, saving and debt at the micro level. We also tried to look at the coping mechanisms available for HIV-infected households; and the stigma and discrimination of HIV/AIDS.

5.1 Awareness and Knowledge about HIV/AIDS and its determinants

In the first chapter, we analysed the patterns and distribution of the awareness and knowledge of HIV/AIDS. It is noticed that the awareness of individuals is higher than the knowledge of HIV/AIDS. It was observed that in all the Five high prevalence states, men had a better awareness about the HIV/AIDS compared to women. Our study observed that among the five states, Manipur was ranked the highest in terms of awareness and knowledge about the HIV/AIDS prevention measures. Tamil Nadu is better in terms of awareness, but not in terms of knowledge and the levels of knowledge. People belong to the following categories have low awareness and knowledge than their counterparts. They are illiterate, poorer, employed, STs and SCs, rural, Hindus, adults, and the above forty age group, and who have more than one life time partner. We did logistic regression to estimate the strength of association between socio-economic, demographic and potential risk factors and HIV awareness and knowledge. From the logistic regression, we observed that categories/factors

such as educational attainment, wealth index, caste, place of residence and number of lifetime partners are highly statistically significant for awareness and knowledge. However, the sub-categories/sub-factors within each categories determining the awareness and knowledge about HIV/AIDS showed some inconsistencies between the High prevalence states in India. For instance, illiterate women in Manipur have better knowledge about HIV/AIDS than women who have completed secondary education in other four states.

5.2 HIV/AIDS Prevalence and Determinants

We have discussed about the patterns and distribution of HIV prevalence in India in Chapter 3. It is observed that, except in Manipur, there is an inverse relationship between educational attainment and HIV prevalence. It is observed that there is an inconsistent relationship between the wealth index and HIV prevalence for Manipur but the same is not true for the other four states as the HIV is more prevalent among the economically poor and poorer. Except in the case of Manipur, HIV prevalence is high among the people living in the rural areas.

We also discussed the patterns and distribution of HIV prevalence based on the socio-economic, demographic and behavioural characteristics It is found that there is positive relationship between total lifetime sexual partners and HIV prevalence for all the Five high prevalence states. The other finding is that HIV prevalence is high among those who used condoms during the last sexual intercourse because, one has no knowledge on whether these individuals had used condoms or not during their previous sexual intercourse. It may be observed from the analysis that illiterates, Scheduled Castes, Hindus, and rural people are more vulnerable to HIV infection in all the four states except for Manipur.

5.3 Socioeconomic Impacts of HIV/AIDS

Chapter four analysed the socio-economic status of HIV-infected individuals and households. It is observed that, the prevalence among women is higher than the men. The proportion of AIDS-affected females was twice as high as that of AIDS-affected males. It is further observed that HIV prevalence among adult population is much higher than that of young adult and above forty age groups. Compared to Christians, Hindus are more vulnerable to HIV infection. The HIV prevalence among Widows and married people is higher than that of never married people. To obtain this result we have used the following socioeconomic variable such as, sex of the household head, marital status, educational attainment and occupational structure. To capture the economic and; quantitative and qualitative aspects of the HIV impact, the study made use of the following variables: income and expenditure, borrowing, savings and asset depletion, consumption expenditure, coping strategies, and finally, the stigma and discrimination attached with this disease.

From our analysis it is observed that both average monthly income and average monthly per capita income of the non-infected households are much higher than that of infected households. A similar pattern also exists in the case of the monthly expenditure of households. We have also looked into the composition of monthly expenditure. The amount spent on food is higher in HIV-infected households than in the non-infected households. The non-infected households have higher monthly average saving than the infected households. The form of saving is different for both types of households. For non-infected households, the forms of savings include bank deposit, RD, and SHGs but the HIV-infected households have their savings, if at all, only with their SHGs. The households headed by widows are coping with widow pension and assistance from NGOs to make up for the loss of their income due to the disease. It is clearly observed that non-HIV households are much better off than the HIV households.

5.4 HIV/AIDS Stigma and Discrimination

From the field survey, we observed that the stigma and discrimination attached to this disease is very high. The stigma and discrimination is the worst for women than men. Once women are infected with this disease, they are looked down by society and almost viewed as a prostitute.

5.5 Policy Implications

Both government and non-governmental organizations are engaged in fighting the battle against HIV/AIDS. They have taken several measures to prevent the spread of the disease among 'risk' groups and the 'bridge' and 'general' population. Interventions include breaking the chain of HIV transmission through infected blood; ensuring that those at higher risk are aware of their HIV status; prevention of transmission from mother to child during delivery; treatment for STI and STDs; provision of condoms and education for youth and the general public. As result of these measures, the spread of new HIV infection has shown a declining trend. Our analysis shows that the SCs, Hindus, poorer, young adult population (15-24 yrs) and rural people are more prone to HIV infection and have low levels of awareness, knowledge and prevalence. Differential patterns and distribution of HIV/AIDS awareness, knowledge and prevalence across the states indicates that the socio-economic and cultural factors seem to interact with each other in determining the knowledge and prevalence. Given the regional dimensions of the causes of HIV/AIDS, national policy should be flexible enough to accommodate the regional dimension, particularly at the implementation stage. Empowering the state governments - down to the district levels - could be considered as one of the very effective policy measures to combat the problems of HIV/AIDS. It is also important that the government should give more priority to the most vulnerable groups.

People Living with HIV/AIDS face greater problems in terms of finding employment and access to medical care and nutritional food. Another important

problem is that they also have to confront with the stigma and discrimination from the community and within the family. If the Government is serious about fighting HIV/AIDS, it should enact certain law against such stigma and discrimination towards PLWHA.

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Appendix 4.1

Centre for Development Studies

MPhil Programme in Applied Economics, 2009-2011

Questionnaire for Field Survey

Confidential

(For Research Purpose only, your name and identity will not be revealed under any circumstance)

Survey Questionnaire on Socio-Economic Impacts of HIV/AIDS on Households

Section 1: Household Characteristics

(1.1) Name of household head:	
(1.2) Religion of the household head: (Hindu-1 Muslim-2 Christian-3 Other-4)	
(1.3) Caste of the head of the household: (SC-1 ST-2 BC-3 Others-4)	
(1.4) Household Size:	
(1.5) Type of house: (Pucca-1 Semi-Pucca-2 Kutcha-3)	
(1.6) Is there electricity? (Yes-1 No-2)	
(1.7) What is the main source of drinking water? (Private Tap-1 Private Hand Pump-2 Public Tap-3 Public Hand Pump-4 Tubewell-5 Supply Tanker-6 Well/River/pond-7 Any other-8)	
(1.8) Is there a separate space for cooking? (Yes-1 No-2)	
(1.9) Type of fuel mostly used for cooking: (Firewood-1 Coal-2 Kerosene-3 LPG(Gas)-4 Cow dung-5 Electricity-6 Others-9)	
(1.10) Does the household have a toilet? (Yes-1 No-2)	
(1.10 a) If yes, type of toilet: (Service latrine-1 Septic tank-2 Flush system-3 Any other-9)	
(1.11) Does your household own any agricultural land?	

(Yes-1 No-2)	
(1.11 a) If yes, How much land does the household own (Acres)?	
(1.12) Does the household own any livestock? (e.g. cow, buffalo etc.) (Yes-1 No-2)	
(1.13) How many household members have been tested HIV positive?	
(1.14) Did your household change the place of residence after one of your family members was detected HIV Positive? (Yes-1 No-2)	
(1.14 a) If yes, where did you move?	
(1.14 b) What were the reasons for changing	
(1.15) No of HIV positive persons	

Section- II Demographic Characteristics of Household Members

Sl. No	1	2	3	4	5	6	7	8
	Name	Relationship to the head	Sex	Age	Marital Status	Education	Occupation	Sector
1)								
2)								
3)								
4)								
5)								
6)								
7)								
8)								
9)								
10)								

Column 2 - Relationship to Respondent: respondent = 1, spouse of the respondent = 2, son/daughter of the respondent = 3, sister/brother of the respondent = 4, father/mother of the respondent = 5, father/mother in law of the respondent = 6, other relatives of the respondent = 7.

Column 3 - Sex: male = 1, female = 2,

Column 5 - Marital status: married = 1, unmarried = 2, widow/widower = 3, divorced = 4, separated = 5.

Column 6 – Education: primary = 1, middle = 2, high school = 3, higher sec = 4, UG = 5, PG = 6, above PG = 7, technical education= 8.

Column 7 – Occupation: Farmer/cultivator-1 Agricultural labourer-2 Construction and related work-3 Skilled/semi-skilled/Other non-agricultural labourer-4 Service (Govt./Pvt.)-5 Petty business/small shop-6 Large business/medium to large shop owner-7 Small artisan in household and cottage industry-8 Self

employed/professional -9 Truck drivers/cleaners -10 Housewife -11 Student -12 Unemployed -13 Others -99

Column 8 – Sector: Agriculture and allied activities-1 Mining and quarrying-2 Manufacturing-3 Electricity, Gas and Water-4 Construction-5 Trade-6 Transport, Storage and Communications-7 Hotels and Restaurants-8 Finance, insurance, real estate and business services-9 Health (hospitals/nursing home, clinics, laboratories, diagnostic centers etc)-10 Community, social and personal services-11 Tourism (Tour operators, travel agents etc)-12 Not available- 13 Others-99.

Section III: Household Income and Expenditure

3A. Total Household Income during the Last One Year (Rs)

<table>
<tr><td>Sources of Income</td><td>Value (Rs)</td></tr>
<tr><td>3.1 Income from agricultural and allied activities</td><td></td></tr>
<tr><td>(a) Income from farm, orchards etc
(Income is derived by deducting the Expenses from Production)</td><td></td></tr>
<tr><td>(b) Income from Livestock, Poultry, sericulture etc</td><td></td></tr>
<tr><td>(c) Income from renting of tractors/pump sets & other implements</td><td></td></tr>
<tr><td>Total Income from Agriculture and Allied Activities (4.1)</td><td></td></tr>
<tr><td>3.2 Income from Trade/Business/petty Shops etc</td><td></td></tr>
<tr><td>3.3 Income from self employment like Artisan</td><td></td></tr>
<tr><td>3.4 Salary income (of all the household members who have salaried income)</td><td></td></tr>
<tr><td>3.5 Wage income earned by the household members
(calculate the wage income earned during the year by all the members by asking the wage rate and the number of days worked in a normal month)

<table>
<tr><td>I.D</td><td>No of Days worked in a month</td><td>Average daily wage (Rs)</td><td>Monthly income</td><td>Annual income</td></tr>
<tr><td>1</td><td></td><td></td><td></td><td></td></tr>
<tr><td>2</td><td></td><td></td><td></td><td></td></tr>
<tr><td>3</td><td></td><td></td><td></td><td></td></tr>
<tr><td>4</td><td></td><td></td><td></td><td></td></tr>
</table>
Total Wage Income</td><td></td></tr>
<tr><td>3.6 Income from Rent, Interest, etc.</td><td></td></tr>
<tr><td>3.7 Transfer Income (remittance from household members living in other places)</td><td></td></tr>
<tr><td>3.8 Any other income (e.g. pension)</td><td></td></tr>
<tr><td>Total Income from All Sources (4.1 to 4.8)</td><td></td></tr>
<tr><td>3.9 Did the household liquidate any assets or borrow any money after one of the family members test positive in order to cope with the financial</td><td></td></tr>
</table>

burden/loss of income etc.? (Yes-1 No-2) If yes, what did they sell? (Multiple answers possible) Agricultural Land-1 House Property-2 Jewellery etc.-3 Sale of Bond, Share etc.-4 Vehilcles-5 Household goods-6 Livestock-7 Borrowings-8 Other (specify)-9	
3.9 (a) How much money they raised? Rs	

3B. Household Savings, Borrowings and Lendings during the Last One Year

3.10 Did the household save in the following forms during the last one year? (Yes-1 No-2)	
If yes, how much did the HH save?	
Type of Savings	
Cash/Bank Deposit	
Purchase of Jewellery	
Purchase of agricultural land	
Purchase of house/flat/plot	
Self Help Groups, Chit fund etc.	
Total (Rs.)	
3.11 Did the household borrow any money in the last one year? (Yes-1 No-2)	
3.12 If yes, how much?	
3.13 Did the Household lend/make remittance to outsiders? (Yes-1 No-2)	
3.14 If yes, in which term? (Lent money-1 Made remittance-2 Both-3)	

3.15 Does the household own any of the following items? (Yes-1 No-2)

1)	Fan	12)	Computer
2)	Bicycle	13)	Moped/M.Cycle/Scooter
3)	Radio/Transistor	14)	House/Flat/Plot
4)	Tape Recorder	15)	Car/Jeep/Van
5)	Television B/W	16)	Bullock cart
6)	Television	17)	Tractor
7)	Television- Colour	18)	Thresher
8)	Refrigerator	19)	Tube well
9)	Telephone	20)	Any Other (Specify)
10)	Mobile phone		

11) Washing machine		

3C. Total Household consumption Expenditure

I Expenditure on Food Items During Last month

	Unit of measurement	Quantity Consumed	Approx Price (Rs.) per unit	Total Value (Rs)
3.16 Cereals a) Rice b) Wheat c) Coarse cereals (Jawar, bajra, maize etc)	 Kg Kg Kg			
3.17 Pulses	Kg			
3.18 Edible oil and vanaspati	Litre			
3.19 Milk and milk products	Litre			
3.20 Sugar	Kg			

Particulars	Total values (RS.)
3.21 Vegetables and Fruits	
3.22 Meat, Fish and Eggs	
3.23 Beverages (Tea, Coffee etc)	
3.24 Processed food like bread, biscuits, namkin snacks etc	
3.25 Spices	
3.26 Other food items	
3.27 Total I	

II Expenditure on Non-Food items during Last Months

Particulars	Total Value (Rs.)
3.28 Fuel (LPG,Kerosene, fire wood etc.)	
4.29 Electricity	
3.30 House Rent	
3.31 Transport (including own vehicle)	
3.32 Entertainment	
3.33 Telephone	

3.34 Toilet articles (toothpaste, soap, detergents, shaving cream etc)	
3.35 Alcohol	
3.36 Bid/Cigarette/Hukka/Tobacco	
3.37 Total II	

III Other Annual Consumption Expenditure During the Last One Year (Rs.)

	Total Values (Rs.)
3.38 Clothing	
3.39 Food wear	
3.40 Durable Goods a) Automobiles b) Electronic Appliances c) Other durable goods (e.g furniture, pressure cooker etc)	
3.41 Education of Children	
3.42 Medical (OPD)	
3.43 Medical (Hospitalization)	
3.44 Travel	
3.45 Repairs and maintenance of house, vehicles etc.	
3.46 House tax, vehicle insurance etc.	
3.47 Other major expenditure (e.g. wedding, social events etc.)	
3.48 Total III (Other Annual Exp.)	

Appendix 4.2

No	Salient Features of The NREGA
1	Adult members of a rural household, willing to do unskilled manual work, may apply for registration in writing or orally to the local Gram Panchayat
2	Employment will be given within 15 days of application for work, if it is not then daily unemployment allowance as per the Act, has to be paid liability of payment of unemployment allowance is of the States
3	Work should ordinarily be provided within 5 km radius of the village. In case work is provided beyond 5 km, extra wages of 10% are payable to meet additional transportation and living expenses
4	Wages are to be paid according to the Minimum Wages Act 1948 for agricultural labourers in the State, unless the Centre notifies a wage rate which will not be less than Rs. 60/ per day. Equal wages will be provided to both men and women
5	Wages are to be paid according to piece rate or daily rate. Disbursement of wages has to be done on weekly basis and not beyond a fortnight in any case
6	Work site facilities such as crèche, drinking water, shade have to be provided