

## Routes of Infection, Socio Economic Factors And HIV Status of The Children of The HIV Infected Women Attending ART Centres in Imphal, Manipur State, India.

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**Abstract:** A cross sectional study to find out the routes of infection, socio economic factors and HIV status of children of HIV infected women attending ART centres in Imphal, Manipur State, India, during April 2009 to October 2012. Study was carried out on 442 women on ART in 2 hospitals in Imphal City, RIMS & JNIMS, Manipur. Mean age of the women was 37.62 years in the age group of 35-40 years, 34.2% got married when they were 20-25 yrs, followed by those 15-20 years (29.9%). 55.7% were widows, 33.9% of the women were living with their husbands. Majority (57.9%) were Hindus. 57.7 % were from nuclear families. 26.0% had completed high school, while 8 women (1.8%) were post graduates. Majority were housewives (31.9%), 19.5% were having small scale businesses. Majority of the husbands (18.3%) were unemployed. 68.8% had income less than Rs 5000 per month. 76.2% were staying at their husband's place. 86.2% of the women got the virus from their husbands who had been intravenous drug users (IDUs). Majority (28.7%) had 2 children. 65.8% of the women had children who were not infected with HIV. 6.1 per cent women reported that at least one of their children had died due to this virus. Study was planned to document the problems faced by the HIV infected women regarding their overall health status in depth and to offer suggestions based on their coping strategies, and to help them to live a healthier life.

**Keywords:** AIDS, ART, HIV, JNIMS, RIMS, MACS, NACO.

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### I. Introduction

The HIV virus can be transmitted through unprotected sexual intercourse with a person already carrying the virus, transfusions of contaminated blood and its by-products, the use of un-sterilized instruments, and from an infected mother to her child before or during birth, or through breastfeeding<sup>(1,2)</sup>. HIV infection is predominantly a sexually transmitted disease worldwide. The most common mode of infection, particularly in developing countries, is heterosexual transmission<sup>(3)</sup>. As per the statistics of UNAIDS on World Aids Day report 2012<sup>(4)</sup>, worldwide, women constitute more than half of all people living with HIV/AIDS. Among young people aged 15-24, the HIV prevalence rate for young women is twice that of young men. In developing countries, infections in females are growing more rapid than in males, with women of childbearing age the fastest growing subgroup of the HIV infected population<sup>(5)</sup>. India is one of the largest and most populous countries of the world, home to perhaps one of every eight people with HIV infection<sup>(6)</sup>. In India, most women, regardless of age or socioeconomic status, get infected by their husbands who are engaged in sex with other partners, who could include sex workers<sup>(7)</sup> (Saran S, 2000). Today, nearly 40% of all HIV infection in India is among women. More than 80% women got infected by their husbands<sup>(8)</sup>. During the early 90s, the belief that people who are drug users would mend their ways if they were married made parents marry off their wards at a very young age. Most of the men have now died, leaving behind acutely vulnerable wives and their children<sup>(9)</sup> (Chitra A, 2010). Of India's 35 states and territories, 6 have very high prevalence rates (Andhra Pradesh, Karnataka, Maharashtra, Manipur, Nagaland, & Tamil Nadu). Manipur, a small state in the north-east region of India, is a state with the highest concentration of HIV/AIDS in India. HIV/AIDS has emerged as a serious public health emergency. As of January 2011, a total 31256 positive cases were found. Out of these, 10109 are female cases. Sero positivity rate per 100 samples is 8.0.<sup>(10)</sup> (MACS, 2012).

## II. Materials & Methods

A cross sectional study was carried out on 442 HIV infected women, 15-45 yrs, attending ART OPD centres of the 2 hospitals in Imphal city, Manipur. Regional Institute of Medical Sciences (RIMS) & Jawaharlal Nehru Institute of Medical Sciences (JNIMS). Study period was from April 2009-October 2012. Ethical approval and clearance was done by Institutional Ethical Committee, RIMS; and from Project Director, Manipur AIDS Control Society (MACS). Subjects were contacted at the ART centers when they come to collect their ARV medications and also for overall check-ups.

They were explained and convinced about the importance and significance of the study. With promises to keep the information confidential, consent form was produced for her signature for entry to study. Information relevant to the objectives of the study was collected personally in the specially designed pre-tested schedule. Necessary secondary data was gathered from concerned physicians, hospital records, etc. The socio-economic and personal information with respect to age, religion, marital status, education, occupation, income, information on husband, family, children, risk factors etc were studied. Results are reported as number of cases/frequencies along with percentages for the categorical variables. This study was a small section of a PhD research work carried out in the department of Biochemistry RIMS, on the Nutritional profile of the women on ART in the state

## III. Aims & Objective

To find out the routes of infection, socio economic factors and HIV status of children of HIV infected women attending ART centres in Imphal, Manipur

## IV. Results

**4.1: Age:** a) Present age: Average mean age of the women in the sample population was 37.62 years, with a minimum of 21 and a maximum of 61 years.

**Table-1:** Distribution of subjects with respect to age & at marriage

Parameters	No. of cases (n=442)	Percentage (%)
a) Present age	Less than 25 yr	6 1.4
	25- 230yr	27 6.1
	30 - 35yr	120 27.1
	35 - 40yr	136 30.8
	40 - 45yr	97 21.9
	45 - 50yr	34 7.7
	50 and above	22 5.0
b) Age at marriage	Not married	20 4.52
	15 - 20yr	132 29.9
	20 - 25 yr	151 34.2
	25 - 30yr	83 18.8
	30 - 35yr	41 9.3
	35 yr & above	15 3.4

Majority of the women in the sample population were in the age group of 35-40 years (30.8%) followed by those in the group of 30-35 years (27.1%) and those from the 40-45 year group with 21.9 per cent. 6.1 per cent were in the age group of 26-30 years, with a minimum number of women (1.4%) in the age group of less than 25 years.

**b)Age at marriage:** Majority(34.2%) got married when they were 20-25 yrs, followed by those getting married around 15-20 years (29.9%),18.8 per cent women married when they were 25-30 years, some(9.3%) at 30-35yrs and some(3.4%) as late as above 35 years of age.

**4.2: Marital status:-** More than half of the women in the sample population (55.7%) consisted of widows, 33.9 per cent of the women were living with their husbands and family. 3.2 per cent of the women were divorcee while 4.3 per cent still unmarried and single, whereas, 2.9 per cent had been widowed but had remarriage again.(Fig-1).

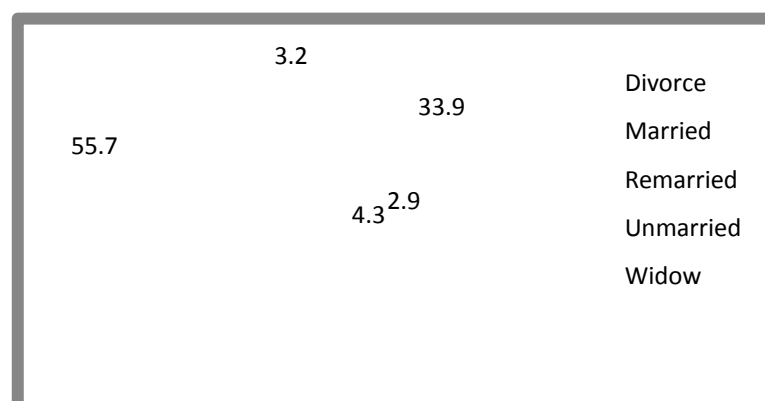


Fig-1: Percentage distribution of subjects according to marital status

**4.3: Religion:** Majority of the respondents (57.9%) were Hindus followed by 37.8 per cent Christians (scheduled tribes), whereas only 4.3 per cent were Muslims (OBC-M) (Table-2a).

**4.4: Caste:** The percentage of respondents belonging to general category, who were the Hindus, were highest (55%) (Table-2b). Schedule tribe referred to the Christians, and OBC-M (other backward classes) were the Muslims).

**4.5: Family Type:** It was observed that 57.7 per cent of the women were from nuclear families and 41.2 per cent were from joint families. The joint family system comprised of the couple, their children, with one or two in-laws. 5 women in the sample (1.1%) were reported to be living alone at home (without any children) or in rented rooms near their place of present occupation (Table-2c).

**4.6: Education:** The educational level of the respondents ranged from illiterate and primary level to postgraduate levels (Table-2d). It was observed that few (7.0%) were illiterate while on the other hand, the largest percentage of the respondents had completed high school level (26.0%) followed by those completing middle school (15.6%) and higher secondary level (15.8%). A good number of women (17%) were graduates while 8 women (1.8%) were post graduates.

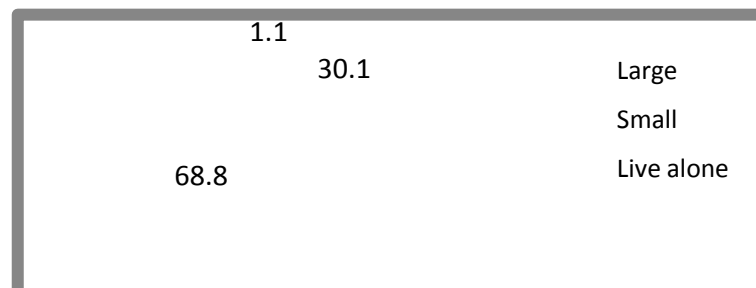
**4.7: Occupation:** Regarding the occupation of the women, majority were housewives (31.9%), 19.5 per cent were having small scale businesses of their own, common business was that of having a small shop at the gate of their residence, while 15.6 per cent of the women were self employed and earning some income for themselves. 6.6 per cent were government employees and 3.6 per cent were teachers in private schools. Some women (10.4%) were working in NGOs (Non government organizations) working for the cause of PLWHAs (people living with HIV). Few women were farmers (9.7%), and daily wage earners (1.6%) (Table-2e).

**Table-2** Distribution of subjects with respect to socio-economic factors

Parameters		No. of cases (n=442)	Percentage (%)
a) Religion	Hindu	256	57.9
	Christian	167	37.8
	Muslim	19	4.3
b) Caste	General	243	55.0
	OBC(M)	19	4.3
	SC	13	2.9
	ST	167	37.8
c) Family Type	Joint	182	41.2
	Nuclear	255	57.7
	Live alone	5	1.1
d) Educational status	Illiterate	31	7.0
	Primary level	74	16.7
	Middle school level	69	15.6
	High school level	115	26.0
	Hr Secondary level	70	15.8
	Graduate	75	17.0
e) Occupation of subject	Post graduate	8	1.8
	Unemployed	5	1.1
	Self employed	69	15.6

	NGO	46	10.4
	Daily wage earners	7	1.6
	House wife	141	31.9
	Farmer	43	9.7
	Business	86	19.5
	Govt. employed	29	6.6
	Teacher	16	3.6

**4.8: Family size:** Majority of the women (68.8%) belonged to small family; 30.1 per cent belonged to large family while 1.1 per cent lived alone by themselves. Small family is referred to when the family consists of 1-5 persons, i.e., one or two adults with one, two or three children, whether joint or nuclear (Fig 2).



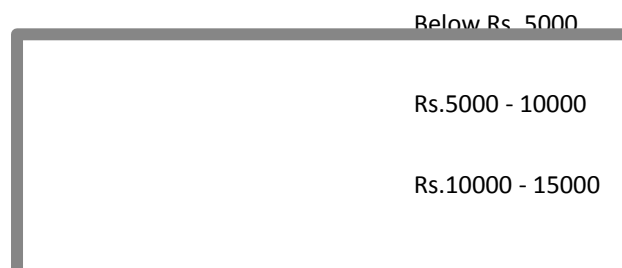
**Fig-2:** Percentage distribution of subjects according to family size

**4.9: Occupation of husband:** Regarding the occupation of the husbands of the women in the sample population, whether living or expired, information collected revealed that majority (18.3%) were unemployed, followed by those in business (17.6%), farmers (12.4%), self employed (11.1%), few (2.5%) in NGOs, contract works (4.3%), police (8.8%), government employees (8.4%), private school teachers (3.4%), drivers (5.4%), and in the forces (4.5%). Does not arise implied the percentage against the women who were single (Table-3).

**Table-3: Distribution of subjects with respect to husband’s occupation**

Parameters	No. of cases (n=442)	Percentage (%)	
Husband’s-Occupation	Unemployed	81	18.3
	Self employed	49	11.1
	NGO	11	2.5
	Contractor	19	4.3
	Police	39	8.8
	Farmer	55	12.4
	Business	78	17.6
	Govt. employed	37	8.4
	Teacher	15	3.4
	Does not arise	14	3.2
	Driver	24	5.4
	Forces	20	4.5

**4.10: Income:** More than half of the respondents had monthly income less than Rs. 5000 per month (68.8%) followed by those having income of Rs.5000-10,000 per month (25.1%) and very few (4.3%) were from families of monthly income of Rs.15000 and above (Fig-3). Average income was 3990.42, with a minimum of 1000 per month and a maximum of 40,000 Rs per month.



**Fig-3:** Percentage composition of subjects according to monthly family income \*(2009 data)

**4.11: Place of stay:** Information gathered regarding present place of stay of the women, is presented in Table-4. Majority of the women (76.2%) were still staying at their husband’s place with their children and in laws, whether they were widows or if their husbands are still living.

**Table-4:** Distribution of subjects with respect to present place of stay

Parameters		No. of cases (n=442)	Percentage (%)
<b>Place of stay</b>	Husband's house	337	76.2
	Maternal house	98	22.2
	Relative's house	2	0.5
	Rented house	3	0.7
	Employers place	2	0.5

But a sizeable percentage (22.2%) returned to their parents and stayed at their maternal place after they became widows or after separation/divorce from their husbands. Some women in the sample (0.5%) stayed at relatives places, or in rented rooms (0.7%) (specially if they work and need to live far from home), or at employer’s place (0.5%) if they happen to be a maid/helping hand of a family.

**4.12: Risk Factor**

Maximum (86.2%) of the women in the sample population got the virus from their husbands who had previously been Intravenous drug users (Fig-4b). Some women (4.5%) reported to have had blood transfusions in the past and said the virus might have entered their system via the blood. Some women (4.3%) reported that their husbands were not drug addicts but got the virus through extra marital affairs.

**Table-5:** Risk factors

Risk factor	N=442	%
Husband Ex-IDU	381	86.2
Husband other women	19	4.3
Self Ex-IDU	8	1.8
Boyfriend IDU	8	1.8
Blood Transfusion	20	4.5
Accidental exposure	6	1.4

Few women (1.8%) admitted to have got the infection from their boyfriends as they had pre marital sex, and few women (1.8%) admitted to have had shared needles when they had been addicts and were using drugs through intra venous injections. Another 1.4 per cent reported to have got the virus from accidental exposures to the blood of HIV infected people (Table-5).

**Table-6:** Distribution of subjects with respect to information on children

Parameters		No. of cases (n=442)	Percentage (%)
a)No. of children living	No children	56	12.7
	1	111	25.1
	2	127	28.7
	3	88	19.9
	4	34	7.7
	Above 4	26	13.7
b)Children dead due to HIV	No deaths	409	92.5
	1	27	6.1
	2	5	1.1
	4	1	0.2
c)children living with HIV	1child positive	85	19.2
	2children positive	17	3.8
	Does not arise	49	11.1
	Negative status	291	65.8

**4.13: Children:** a) Number of children: Information gathered regarding the children of the women in the sample revealed that, majority (28.7%) had 2 children, followed by those with 1 child (25.1%), and 19.9 per cent with 3 children, 7.4 per cent with 4 children while 13.7 per cent had 4 to 9 children. 12.7 per cent women comprised single women and childless women(Table 6).

b) Children dead due to HIV: Majority (65.8%) of the women had children who were not infected with HIV. 6.1 per cent women reported that at least one of their children had died due to this virus, while 1.1% had 2 children dead, and 0.2% had so far 4 children dead from HIV infection. No deaths of any children were reported

by 92.5 per cent of women.

c) Children living with HIV: Regarding living children but infected and living with the virus, 19.2 per cent women had one infected child, while 3.8 per cent had 2 infected children. The group does not arise (11.1%) in the table depicts single women and childless women while 65.8 per cent women had children but tested negative and living without infection from the virus.

## V. Discussion

More than half of the women in the sample population (55.7%) consisted of widows. Widowhood presents a myriad of economic, social and psychological problems, particularly in the first year or so after the death of the spouse. A major problem for both sexes is economic hardship. But few women in the sample had remarried again while 4.3% consisted of single unmarried women. Information gathered regarding the children of the women in the sample revealed that, majority (28.7%) had 2 children. While 12.7 per cent of women comprised of single women and childless women, majority (65.8%) of the women had children who were not infected with HIV but 19.2 per cent women had one child infected with HIV virus, while 3.8 per cent had 2 children with the virus. There were two women who were pregnant in the study. They discovered their HIV status when they went for antenatal check-up. They had been on ART for more than six months but had not completed one year, and currently were on PPTCT programme. Pregnancy complicated by HIV is considered high risk<sup>(11)</sup> (Montgomery K S, 2003).

## VI. Summary & Conclusion

Study consisted mostly of widows with low earning power, low income, mostly suffering from anemia, liver problems and lipid abnormalities, anorexia, heartburns, giddiness, coupled with HIV infected children who were also on ART and depended on them. Low nutrient intake, escalated by lower financial capability was again complicated with lack of knowledge about improved dietary practices, the different types of food, their relation to health and in different disease conditions etc. All of these may be attributable for the poor nutritional status, the discomforts experienced, and their vulnerability to opportunistic infections.

In Manipur, there is no substantial project or steps taken up to provide any nutritional supplements to these women with HIV/AIDS and their children who were the actual victims of this dreaded disease. Therefore, this study was planned to document the problems faced by the HIV infected women regarding their overall health status in depth and to offer suggestions based on their coping strategies, and to help them to live a healthier life.

## VII. Acknowledgements

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