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## Geographic Variation of Sexual Knowledge and Practice among the People Living with HIV/AIDS in Kerala State, India

**Jayarajan K.**

Assistant Professor, Department of Geography  
Govt. College Chittur, Palakkad, Kerala, India

**Dr. K. Lakshmi**

Professor, Department of Geography  
Madurai Kamaraj University Madurai, India

### **Abstract:**

*This study aimed to examine perceptual factors associated with knowledge about the sexual practice among the infected HIV/AIDS people in Kerala, and the relationship between the condom use and the timing of sexual debut among the partners. Analyses are based on 716 sexually experienced males and female aged 20 - 40 years who completed questionnaires about their sexual attitudes and behaviour. As per the factor analysis, five factors are grouped for the analysis. The first component which explains 25.90 % of the total variance is significantly loaded with 13 variables. The factor loading values of 13 variables lies between 0.92 and - 0.53. The second component accounts for 15.14% of the total variance grouped with 6 variables with loading values between 0.94 and -0.79 in both the direction. The third component 10.77% of total variance is contributed by 6 variables with the loading values lying between 0.95 and -0.74 in both the directions. Interestingly the fourth component explains 9.94% of total variance. It is loaded with 4 variables in both the directions. Similarly the fifth component explains 8.03% of total variance. Results indicate the males from the unemployed Muslim community and their educational status up to high school are using condoms. Majority of the HIV/AIDS infected persons have the habit of sexual contact before marriage and they are mainly truck and auto drivers in Kerala. Consequently, only a marginal association was found between agreeing that buying condoms is embarrassing and condom use at first sexual intercourse. Interventions to increase awareness about the role of condoms in preventing HIV, delay sexual initiation, and teach properly the sex education in the school itself.*

**Key words:** HIV/AIDS, Eigen value, Sex education, condom usage, spatial pattern

### **1. Introduction**

Kerala has been the most literate State in the country. The spatial pattern of male literacy and female literacy in Kerala State has not much wider difference and the status is almost similar in the pattern of all districts. The history of HIV/AIDS epidemic in Kerala State started in 1987 when a few AIDS cases were reported from Pathanamthitta district. Since then, the number of people being infected yearly because of heterosexual transmission has grown geometrically and the social factors associated with sex work have influenced the pattern and severity of the epidemic in Kerala State. The major factors responsible for this epidemic are the labour migration, Tourism, high unemployment rate, rural-urban migration, poor awareness about the epidemic among sex workers and poverty rate influenced the HIV/AIDS epidemic in Kerala State.

### **2. Study Area**

Kerala State extends from 8° 18' North to 12° 48' North latitude and 74° 52' East to 77° 22' East longitude along the coast in the south western part of India. The state is bounded by Karnataka in the north, Tamilnadu in the east and south and Lakshadweep Sea in the west with an area of 38863sq km (1.27 percent of the total area of India) the population has about 3,33,87,677 as per 2011 census. Presently, there are 14 districts and 63 Taluks. The history of HIV/AIDS epidemic in Kerala State started in 1987 when a few AIDS cases were reported from Pathanamthitta district. Since then, the number of people being infected yearly because of heterosexual transmission has grown geometrically and the social factors associated with sex work have influenced the pattern and severity of the epidemic in Kerala State.

### **3. Materials and Methods**

A structured pretested questionnaire is used to collect reliable information from the HIV/AIDS persons in Kerala State. The questionnaire was retranslated in English to ensure that the implications of the questions did not lose while translating in to regional languages. The bilingual questionnaires were also used for collecting information regarding the Knowledge about sex and practice. A total 716 respondents have been contacted based on the secondary data of the People Living with HIV/AIDS cases

from 14 districts in the year 2012. As per the reported HIV/AIDS cases in the fourteen districts 10 percent samples were collected for the analysis. The primary data are used to understand the sexual behaviour of the people living with HIV/AIDS. In this analysis information are collected and categorised in to various dimension i.e. gender wise distribution age ,religion occupation ,Knowledge about sex, sex before marriage, age of first sexual relationship, current sexual relationship, homosexuality, anal intercourse and STD .For this purpose factor analysis technique are used to understand the present condition of the knowledge about sex, practice among the people living with HIV/AIDS in Kerala

#### 4. Results

##### 4.1. HIV positive Male /Female sample respondents

In this study primary data collected from the fourteen district in Kerala state, on the total 716 samples chosen, where (51%) are male respondents and the remaining (49%) are female .The pattern of sex in the study area shows that Thiruvananthapuram and Palakkad districts have the highest number of male respondent (>50%) followed by Ernakulam, Thrissur and Kozhikkode districts occupy the moderate range of (25-50%) number of male respondents. While in Malappuram, Kottayam, Kannur, Pathanamthitta Alappuzha Kasargod Kollam, Idukki and Wayanad districts have lowest male respondent (<25%).The female respondents are maximum numbers in Thiruvananthapuram , Thrissur, Palakkad and Ernakulam districts that is (35%-39%) persons .Whereas Kottayam, Kasargode, Alappuzha ,Kannur, Pathanamthitta, Kollam, Kozhikkode, Malappuram and Idukki districts rank second with (15-30%).At the same time as Wayanad has less numbers of female respondents with HIV/AIDS (<15%) in the Kerala.

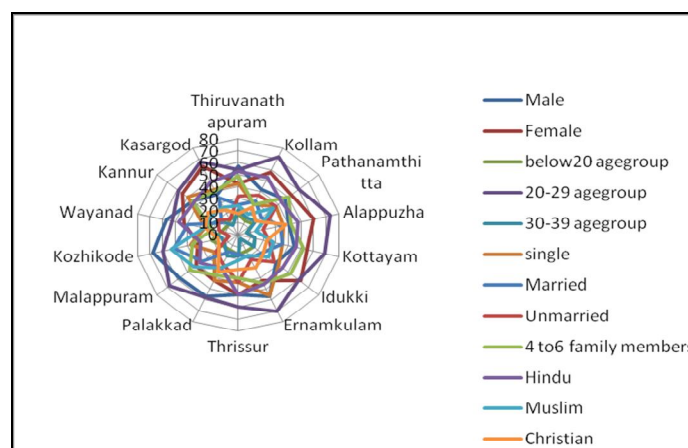


Figure 1. Personal Status Of The People Living With HIV/AIDS In Kerala  
Source: Primary Survey 2012

##### 4.2. Age Structure

Spatial distributions of age structure in the HIV/AIDS infected male respondents samples depict that adult with (20-29) age group are premier in Alappuzha district (82%) after that Malappuram (75%) and lowest in Kasargod (31%). While old adults are more in Thiruvananthapuram (40 %) and Ernakulam (38 %) and the least in Kasargod district (7 %). Usually the incidence of HIV/AIDS infections are less than 20 and 20-39 age group of male. But in the Kasargod (62%) and Wayanad (37%) incident is more in the age group of less than 20. Similar to the case of male samples (62%) nearly three fifth female adults' samples are equally infected. Amongst the respondents in female samples adults the highest is in Kollam district followed by Pathanamthitta, Kottayam, Malappuram districts (>70%). The least proportion is in Wayanad district (34%). Other districts are in medium range .Nearly one by fourth female respondent are adolescent in the study area .Among the respondents adolescent are highest in Thiruvananthapuram district (32%) followed by Kasargod district (30 %) and the lowest proportion is in Kollam (11%). While old adults in the age group of (30-39) are high distributed in Wayanad (50%) Kasargod had registered with (15%) the other districts have the ranges of (5 to 14%), lowest proportion is in Pathanamthitta district (5 %). Amongst the male respondents larger samples with (HIV/AIDS) are in the age group of (20 to 30) and (30 to 39) but in the female samples largest share in the age group of less than 20 and (20 to 30) age group.

##### 4.3. Religion

Religions strongly influence a society's socioeconomic institutions, political ethos and even the laws and personal way of life or moral behaviourism. Almost half of the male respondents are belongs to Hindus in the study area. Among the districts the highest is in Wayanad district (75%) following Idukki and Palakkad districts and others. In total eight districts are more than the State averages. The least samples are reported from Pathanamthitta district (12%). Amongst the total respondents in Kerala (23%) are Muslim religion. Muslim respondents are high in Pathanamthitta , Malappuram and Kozhikkode district While Thiruvananthapuram, Kottayam and Ernakulam districts have the least share less than (10%). The distribution of male Christian community respondents are (28%) in the Kerala State. In Kerala, Kasargod (50%), Alappuzha(45%) and Ernakulam(38%) are

the districts with the maximum percentage share of Christian community and the lowest proportion is reported in Pathanamthitta district (17%).

Nearly (54%) female respondents belong to Hindu religion in Kerala State. Among the female respondents Hindus are above the State average in Alappuzha, Thiruvananthapuram, Kottayam, Thrissur, Wayanad district (54%) the lowest in proportion was in Malappuram district (35%). Virtually one third of the female respondents belong to Muslims religion in Kerala State. Among the respondents highest Muslim female respondents are found in Malappuram (47%) following this Wayanad, Idukki and Kasargod districts register with more than the State average. The lowest proportion is found in Alappuzha district (16%). Female Christian respondents samples with HIV/AIDS are (15%) in the Kerala State. The distribution female Christians are in Ernakulam, Palakkad and Kannur district (>20%). Subsequently Thrissur, Kozhikkode, Alappuzha except Thiruvananthapuram and Kozhikkode districts (10%). The proportion of religious status is a ban with the size of the population ratio and the concentration of the religious composition.

4.4. Occupation

Occasionally occupation of a person may lead to take part in unwanted sexual intercourse and get HIV infection in their life cycle. Especially in manual labour class and low level of job position, the people pay no attention to about precautions and safety measure at the time of sexual intercourse with the co-workers or employees due to illiteracy and lack of awareness. Among the samples male respondents in the State (18%) share is belongs to the other and business sector each followed by (13%) in unskilled occupation unemployed students share in HIV/AIDS infection share is (13 %) and (12%) respectively. It is followed by truck auto Taxi drivers and Hotel staff. The agricultural workers, factories and service sector share in minimum (3 to4%). Among the male sample respondents belongs to business category as occupation with higher incidental of HIV/AIDS infection is from the Wayanad Alappuzha, Palakkad district Malappuram district has only (13%). While male other workers are the highest in Pathanamthitta district (42%) following Kottayam district (37%) and the lowest proportion was in Kannur district (7%). Male unemployed category occupied about (13%) in Kerala State. While among the respondent the highest was noticed in Kollam, Idukki and Wayanad districts (29 %) Malappuram district has only (13%).

Among the respondents other workers are the highest in number in Pathanamthitta district (42%) followed by Kottayam district (37%) the lowest proportion is in Kannur district (7%) the unemployed category of male respondents were (13%) in Kerala State, among them Kollam, Idukki, and Wayanad districts have (29%) in each district. This is followed by Kasargod, Thrissur, Kozhikkode districts. Other districts ranges from (10 to 2%) except Alappuzha, Kottayam and Ernakulam were no person was reported in this category.

Along with the male respondents male students with HIV/AIDS infection in Kerala State is (12%). Kasargod (34 percent) succeeding Palakkad, Kottayam and Wayanad district (>25 percent) have highest incidents followed by Pathanamthitta other district have below the State average. Male unskilled workers of the respondent in Kerala State are (13%). Among the respondents Thiruvananthapuram district has large numbers (32%) following Alappuzha, Kottayam and Kasargod district (>20%) and the lowest proportion was in Malappuram and Ernakulam district (<10 percent). Other district ranges in between.

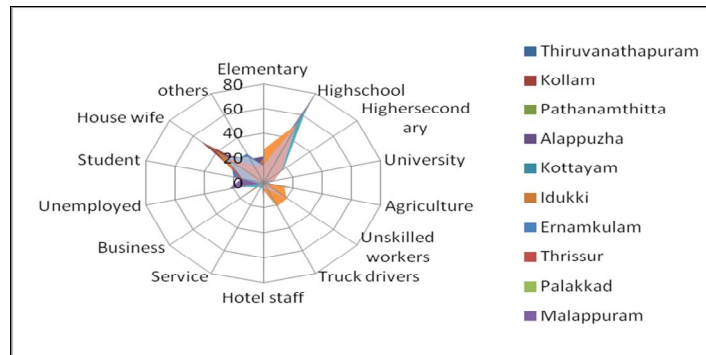


Figure 2: Educational And Employment Condition Of The People Living With HIV/AIDS In Kerala  
Source: Primary Survey 2012

Male Truck/Auto drivers with HIV/AIDS share is only (8%) in Kerala State. Among the respondents the highest was in Kozhikkode district (24%) followed by Ernakulam, Idukki and Kannur districts (14%). Kollam, Thiruvananthapuram, Palakkad and Wayanad rank next with less than (10%). HIV/AIDS infected persons belong to Agricultural workers in Kerala State is least that is (4%). Kollam (14%) and Wayanad district (12%) more numbers than Pathanamthitta and Thiruvananthapuram districts. From the sample other districts are not comes under this category of the State.

Factory workers represent (3%) percent in the State. Among the male respondents Factory workers in Thiruvananthapuram district (20 %) succeeding Alappuzha district (13 %) and Kannur (10%) While Kozhikkode district has minimum (4 %) other district has not reported in this category. (7%) of HIV/AIDS infected male sample belongs to hotel staff. Among the sample Thiruvananthapuram district (16%), Alappuzha and Idukki districts (14 percent) respectively and Kannur and Pathanamthitta ranks higher than the State average. The respondents from other districts are less than State average. Whereas Kollam, Kasargode, Palakkad districts not reported any cases. Service sector shared 4 percent among the respondent occupation in

Kerala State. Kozhikkode district has more numbers (12%) following Ernakulam, Malappuram, Kannur and Thiruvananthapuram districts. While Thrissur district has the minimum (4%). Other districts are not registered with any case.

The female sample of HIV/AIDS respondents (60%) are housewife in Kerala State. Kollam district (84%) followed by Idukki district (75 percent) register high percentage followed by Thiruvananthapuram, Pathanamthitta, Alappuzha, Ernakulam, Thrissur ,Wayanad, Kannur all are registered with above the district average (60%) Kottayam (26%) other districts rank in between.

It is worth note fact that (25%) of the female samples are students in Kerala. Thiruvananthapuram district (32%) followed by Kasargod district (30%) Thrissur, Alappuzha,Ernakulam,Kannur rank above district average .The lowest proportion was in Kollam district (11 %).Other districts are in the range of (20to 25%). About (15%) of the female sample respondents with HIV/AIDS engaged in to other works in the study area. the highest observed in Kottayam district (50%) followed by Kozhikkode district (30%) Palakkad and Kasargod districts and the lowest proportion are in Kollam and Thrissur districts (5%) than the other States.

#### 4.5. Knowledge About Sex

Spatial pattern of knowledge about sex practice exhibits variation in the share of male and female. About (37%) of the male sample respondent has knowledge about sex through books. Wayanad (83%) and Alappuzha (55%) ranked top among the districts in the present share of knowledge about sex from friends. Lowest share is in Kasargod (14%).Other district reported with moderate (30%-50%).Nearly (21%) of the male sample respondent have knowledge about sex from peer group .Kozhikkode district has high percentage (61%) followed by Kollam (33%) and Pathanamthitta (27%). Whereas Alappuzha, Kottayam, Malappuram districts reported moderate (20%-26%).Other districts are below the State average.

It can be seen ,about (41%) of the sample respondents acquire knowledge about sex from friends. out of the fourteen districts two of them are having more than (60%) i.e. Kasargod (86%) and Ernakulam (68%) ranking at the top. Pathanamthitta, Idukki, Thrissur, Palakkad and Kannur districts reported above the State average. Other districts are below the State average. Wayanad district is not reported any cases. In the study area (53%) of the female respondents attains knowledge about sex from friends. In Kasargod this category is very high with (69%) of the respondent. This is very low in Kozhikkode districts with less than (25%) of the respondent. Other districts share range from (40%-65%).

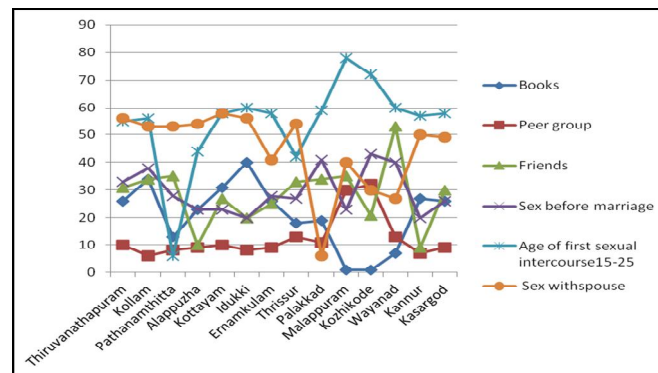


Figure 3: Sexual Knowledge About The People Living With HIV/AIDS In Kerala  
Source: Primary Survey 2012

The second major source of information about sex is from books. Nearly (47%) of the female sample respondents got knowledge about sex from books. When considering the variation among the districts, Kozhikkode (75%) and Idukki (58%) have a higher share of respondent who got knowledge about sex from books. Ernakulam, Alappuzha, Pathanamthitta districts are also got knowledge about sex from books, which is more than the average of the State. Lowest percent identified from Kasargod (31%).

#### 4.6. Sex Before Marriage

Table 5.10 indicate majority of the male sample respondent (70%) has sex before marriage. The proportion of the respondent have sex before their marriage was reported to be highest in Kozhikkode and Kollam district (88 %) and the lowest is in Kasargod district (22%). In the case of female sample respondent only (15%) of the female respondent have sex before their marriage table 5.10. The proportions of the female sample respondent have sex before their marriage was reported to be highest in Kasargod (32%) and Palakkad district (31%) and the lowest was in Thiruvananthapuram district (3 %).

#### 4.7. Age of First Sexual Relationship

The sexual relationship of the male sample respondent almost (84%) have happen in the age group of (15-25) of the remaining (16 %) has in the age group of (25-35).Confirmation of first sexual relationship highest is in Kozhikkode district (90%) following Kollam district (88%) and the lowest proportion was reported in Kasargod district (22%). While first sexual relationship started among the male sample respondent (25-35) age group are highest reported are Wayanad district (66%) percent following Kasargod district (22%) and the lowest reported in Kottayam district (8%).

The data revealed that nearly four fifth female of the sample respondent have first sexual relationship occurred in the age group of (15-25) .Confirmation of first sexual relationship with youth was highest in Kollam ,Pathanamthitta, Idukki ,Malappuram,

Wayanad and Kannur districts (100%) following Ernakulam district (96%) and even the lowest proportion was in Kasargod district (81%). Just about one fifth female sample respondents expressed sexual relationship started at (25-35) age group. While first sexual relationship started among the respondent (25-35) age group are highest reported in Alappuzha and Thrissur districts (100%) following Kottayam (35%) and Kasargod district (19%), the lowest reported in Ernakulam district (<5%).

#### 4.8. Current Sexual Relationship of the HIV Infected Samples

Almost two third of the male sample respondent with HIV infection have Sexual relationship during the last 12 month with wife in the State. While Thiruvananthapuram, Ernakulam, Wayanad, Kollam, Kannur, Pathanamthitta, Palakkad, Kasargod and Idukki districts have more than the State average. Whereas below the State average reported from Kottayam, Alappuzha, Malappuram, Thrissur and Kozhikkode districts (28%-65%). Nearly one fifth of the male sample respondent has sexual relationship with other than wife. Among the male sample respondents proportion of sexual relationship with others highest is in Alappuzha (57%) following Kozhikkode district (39%) and Malappuram (35%) and Kottayam (35%). Seven districts reported lowest proportion than the State average. While Thiruvananthapuram, Kannur and Kasargod districts not reported any response of sexual relationship with others. Sexual relationship of the male sample respondent during the last 12 month with friends is (14%) in the State. While Idukki (14%) Thrissur (19%), Malappuram (20%) Kannur (27%) Kasargod (29%) and Kozhikkode (33%) districts have sexual relationship during the last 12 month with friends than the State average. Below the state average reported from Pathanamthitta, Kollam, Kottayam, Ernakulam, Palakkad districts. While not reported in Thiruvananthapuram, Alappuzha and Wayanad districts.

Nearly (85%) of the female sample respondent has Sexual relationship during the last 12 month with partner in the study area. Kollam (94%), Alappuzha & Thrissur (93%), Kottayam (90%), Kannur (88%), Ernakulam (88%), Pathanamthitta and Kannur (85%) districts have a higher percentage than the State average. Other districts have a moderate share of Sexual relationship during the last 12 month with partner. In Malappuram district reported the lowest share (77%). Closely 15% of the female sample respondent has sexual relationship with others in Kerala State. Malappuram (23%), Thiruvananthapuram (20%), Idukki (20%), Palakkad (20%), Wayanad (20%) and Kasargod (19%) have a higher percent than the state average. Other district have the range of (6 to 15%), the lowest proportion was in Kollam district 6 percent.

#### 4.9. Homosexuality

Homosexuality is the Sexual experience (manual/oral/anal) with any male partner. From the male sample of HIV/AIDS respondents (17%) have sexual relationship with male partner in the State. It was observed that in Kasargod district (37%) followed by Kozhikkode district (30%) register high percentage followed by Kannur, Thrissur Alappuzha and Palakkad all are registered with above the district average (17%). While Thiruvananthapuram districts minimum (7%) Wayanad district is not registered with any case. Of the total male sample respondent (76%) of them have sexual relationship with male up to three times in the last year. Thiruvananthapuram, Palakkad, Malappuram, Kannur and Kasargod, Pathanamthitta, Kottayam, Ernakulam districts above the State average (76%). While the lowest proportion reported in Kozhikkode district (24%). Other districts share ranges from (40 to 80%). Whereas (24%) of the male sample respondents have sexual relationship with male partner (> 3) times in the last year. Kozhikkode district (76%) followed by Kollam district (57%) and other districts share ranges from (20-50%) i.e. Wayanad, Thrissur, Kottayam, Pathanamthitta, Ernakulam districts. Other districts are not registered with any case.

#### 4.10. Anal intercourse

All respondents were asked about their first sexual experience (anal) with partner. Nearly three fifth of the male sample respondents have anal intercourse in the Kerala. Alappuzha (100%) Wayanad (83%) Kozhikkode (71%) Malappuram (63%), Kasargod (58%) and Thiruvananthapuram (58%). Other districts reported below the State average. About (27%) of the female sample respondents engaged anal intercourse in the State. It reflects that, seven districts reported above the State average i.e. Thiruvananthapuram (58%) Wayanad (40%) Ernakulam (35%) Kasargod (32%) Malappuram (31%) Alappuzha (30%) and Kozhikkode (29%) Other districts reported below the State average and lowest identified in Kollam district (14%).

#### 4.11. Sexually Transmitted Disease (STD)

Every Sexually Transmitted disease (STD) causes some damage to the genital skin and mucous layer, which facilitates the entry of HIV into the body. The most dangerous are Syphilis, Cancroids, genital herpes; Gonorrhoea. High rates of STD caused by unprotected sexual activity enhance the transmission risk in the general population. Early treatment of STD reduces the risk of spread to other sexual partners and also reduces the risk of contracting HIV from infected partners.

#### 4.12. Awareness of STD, Self-reported STD Prevalence and Treatment Seeking Behaviour

The proportion of male sample respondents aware of STDs was reported to be (92%) in the State. Whereas Thiruvananthapuram (100%), Alappuzha (100%), Kozhikkode (100%) Wayanad (100%), Palakkad (98%) and Kottayam (92%) districts reported above the State average. While Malappuram district (74%) reported the lowest proportion of respondents had heard of STD. Nearby half of the female sample respondents were aware of Sexually Transmitted Diseases (STD) in the study area. Thiruvananthapuram district has high percentage (100%) followed by Malappuram (85%) and the lowest proportion of respondents was in Kollam district (30%). Other district share ranges from (33% -66%).

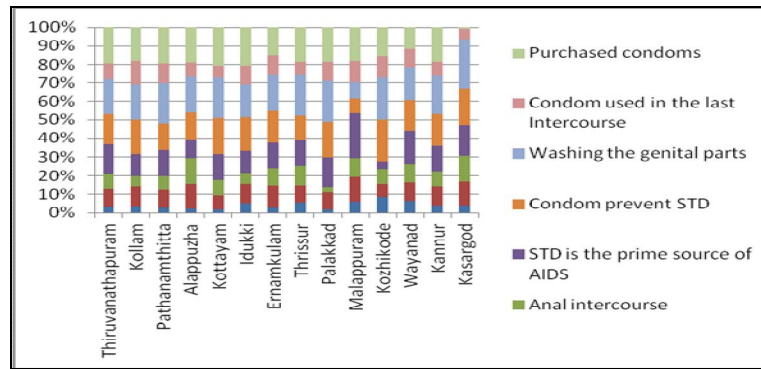


Figure 4: Condom Use Behaviour Of Among The People Living With HIV/AIDS In Kerala  
Source: Primary Survey 2012

All the male sample respondents are washing the genital parts after the sexual intercourse and they know that this will prevent Sexually Transmitted Disease (STD). While only (91%) female sample respondents believed that washing the genital parts after the sexual intercourse prevent Sexually Transmitted Disease (STD) in Kerala. Among the female sample respondent Thiruvananthapuram, Pathanamthitta, Alappuzha, Kottayam ,Ernakulam and Wayanad districts above the State average and other districts reported below the State average.

**5. Discussion**

Knowledge about sex, practice among the people living with HIV/AIDS in Kerala revealed the table 1. In this section illustrate the condition of the infected people in Kerala state through various dimensions. As per the factor loading five factors are grouped for the analysis. Table 2 explains the sexual knowledge among the infected HIV/AIDS, the **first** component which explains 25.90 % of the total variance is significantly loaded with 13 variables (see table 2).The factor loading values of 13 variables lies between 0.92 and - 0.53

	Total	% of Variance	Cumulative %
1	11.14123	25.90984	25.90984
2	6.307846	14.66941	40.57925
3	4.632353	10.77291	51.35216
4	4.277869	9.948533	61.3007
5	3.457042	8.039633	69.34033

Table 1: Total Variance Explained In The People Living With HIV/AIDS

Parameter	1	2	3	4	5
Male	0.759577	0.274894	-0.12643	-0.02503	-0.12263
Female	-0.75958	-0.27489	0.126429	0.025031	0.122634
Below20 year age group	0.472465	0.218919	-0.41877	-0.35924	0.034734
20-29 age group	-0.1885	-0.2071	0.619226	0.015352	0.62007
30-39 age group	0.033279	0.219337	-0.74297	0.294076	-0.33236
Hindu	-0.79611	-0.18486	0.092957	0.187161	0.094237
Muslim	0.850721	0.186526	-0.20589	-0.14873	-0.01652
Christian	-0.36724	-0.09825	0.296771	0.088261	-0.07343
Elementary level of education	-0.42853	0.149737	0.180064	0.441897	-0.60081
High school level of education	0.599726	0.004971	-0.02386	0.23094	0.53401
Higher secondary level of education	0.136279	-0.12549	-0.02251	-0.83614	-0.10263
Unskilled worker	0.19571	0.440985	-0.01264	0.213893	-0.1611
Truck auto drivers	0.483416	0.530025	0.108057	0.157017	-0.17813
Hotel staff	0.16742	0.065704	0.951671	0.057088	-0.13716

Parameter	1	2	3	4	5
Business	0.058712	0.02756	-0.32428	-0.28347	0.108257
Unemployed	0.886797	-0.15071	0.101125	0.114471	0.32786
Student	-0.22623	-0.4731	-0.38396	0.108277	-0.05076
Housewife	-0.88967	0.039556	-0.06449	-0.02371	0.277666
Others	-0.21519	-0.79224	0.291421	-0.04628	0.157402
Sexual Knowledge from Books	-0.85907	-0.10174	-0.10665	-0.08269	0.145796
Sexual Knowledge from Peer groups	0.928093	0.078779	0.113015	-0.03835	0.19629
Sexual Knowledge from Friends	0.147818	0.213987	-0.37121	0.555035	-0.13309
Sex before marriage	0.285703	0.757775	-0.25735	0.068378	0.079292
Age of first sexual intercourse 15-25	0.393218	0.179425	0.055849	0.285905	0.366101
Sex with spouse	-0.56348	-0.3926	0.163341	-0.19879	0.153494
Sex with colleague	0.003285	-0.10992	-0.57523	0.015599	0.506816
Sex with boyfriend	0.363964	-0.02757	0.17404	-0.11686	-0.03824
Sex with girl friend	-0.01095	-0.0276	-0.10523	-0.17657	-0.06901
Use of condom	0.522933	0.463801	0.057938	0.147993	-0.04392
Partner insist condom	-0.12494	-0.18579	0.528744	0.737939	0.092929
Anal intercourse	0.007986	-0.00887	0.761106	0.162158	-0.1504
STD	0.13762	-0.27945	-0.15116	0.862308	-0.15947
STD is primary cause of AIDS	0.303605	0.878531	0.022268	-0.01601	-0.26936
Condom prevent STD	-0.09127	0.942406	0.03581	-0.08111	-0.0182
Washing the genital parts after the sexual contact	-0.30556	0.808675	0.028699	-0.34066	-0.19082
Used condom in the last sex	0.316846	0.475807	-0.01528	0.456842	0.170328
Purchase condom	0.059717	0.020006	-0.17	0.104493	0.041051
Availability of condoms < 1hour	0.199742	-0.27247	-0.10016	0.413373	0.680196
Unpleasant staff	-0.53203	-0.13112	0.01108	0.224015	0.09701
Get Condom freely	0.712675	-0.38906	0.04346	0.17788	0.194904
Purchased condoms from Medical store	0.360027	0.255235	0.000202	0.182721	-0.73218

Table 2: Rotated Component Matrixes Of People Living With HIV/AIDS

1.Sexual knowledge among the infected HIV/AIDS persons	
Description	Eigen value
Peer groups	0.928093
Unemployed	0.886797
Muslim	0.850721
Male	0.759577
Getting Condom freely	0.712675
High school level of education	0.599726
Use of condom in the last intercourse	0.522933
Housewife	-0.88967
Sexual knowledge from Books	-0.85907
Hindu	-0.79611
Female	-0.75958
Spouse	-0.56348
unpleasant staff	-0.53203

Table 3: Sexual Knowledge Among The Infected Persons In Kerala

In both the directions. The variables with positive loadings cluster include sexual knowledge from Peer group (0.92), unemployed (0.88) Muslim (0.85), Male (0.75) getting condoms freely (0.71) educational status up to high school (0.59). Use of condom (0.52), the variables with negative loadings are added with house wife (-0.88) Sex knowledge from books (-0.85), Hindu community (-0.79) female (-0.75), last sex with spouse (-0.56) difficulty facing condom purchase is unpleasant staff (-0.53) as these are just opposite to the above cluster of variables by nature. Hence this component is called Sexual knowledge among the infected HIV/AIDS persons.

<b>2. Condom usage and Sexually Transmitted Disease</b>	
Description	Eigen value
Condom prevent STD	0.942406
STD is the Primary cause of AIDS	0.878531
Washing the genital parts after intercourse	0.808675
Sex before marriage	0.757775
Truck auto drivers	0.53
Others	-0.79224

Table 4: Condom Usage And Sexually Transmitted Disease In Kerala

The second component accounts for 15.14% of the total variance grouped with 6 variables with loading values between 0.94 and -0.79 in both the directions. Out of 6 variables 5 show positive values of loading such as condoms prevented STD (0.94), STD is the primary cause of HIV/ AIDS (0.87), washing the genital parts after the inter course reduce STD (0.80), sex before marriage (0.75), truck and auto drivers(0.53) and negatively loaded variables are other workers (-0.72). Hence this component is called STD and condom usage and STD among the HIV infected people in Kerala State.

<b>3. Primary cause of STD and AIDS</b>		<b>4. STD and associated condom usage among the People living with HIV/AIDS.</b>		<b>5. Accessibility and availability of condoms to the people living with HIV/AIDS</b>	
Description	Eigen value	Description	Eigen value	Description	Eigen value
Perception regarding STD	0.951671	Perception regarding STD	0.86	Availability of condoms < 1hour	0.6802
primary cause HIV/AIDS is STD	0.761106	Insist condoms in the last sex	0.73	20-29 age group	0.62007
condom prevent STD	0.619226	Knowledge about sex from Friends	0.55	High school level of education	0.53401
washing the genital parts control STD	0.528744	Higher secondary level of education	-0.83	Last sex with Colleague	0.50682
used condom in the last sex	-0.57523			Medical store	-0.73
purchase condom	-0.74297			Elementary	-0.6008

Table 5: Sexually Transmitted Disease Is The Primary Cause Of AIDS, STD And Associated Condom Usage And Accessibility And Availability Of Condoms To The People Living With HIV/AIDS

Table 5 shows the third component 10.77% of total variance is contributed by 6 variables with the loading values lying between 0.95 and -0.74 in both the directions. Among them all knowledge about STD (0.95), STD is the primary cause of HIV/AIDS (0.76), condoms prevent STD (0.61), Washing the genital parts after intercourse (0.52) variables have positive loadings while the remaining 2 variable namely usage of condom (-0.57) and purchase of condoms (-0.74) variables are negatively loaded variables. Interestingly the fourth component explains 9.94% of total variance. It is loaded with 4 variables in both the directions. While STD (0.86), insist condoms at the time of intercourse (0.65) and friends (0.55) variables are positively loaded, Higher secondary level of education (-0.83) is negatively loaded. So, it is stated as STD and associated condom usage among the People living with HIV/AIDS.

Similarly the fifth component explains 8.03% of total variance with regard to variables such as accessibility of condom below one hour (0.68), age group of 20-29 (0.62) high school (0.53) and sexual intercourse with colleague (0.50). While negatively loaded variable are medical store (-0.73), elementary school education (-0.60). Hence this group of variable is termed as Accessibility and availability of condoms to the people living with HIV/AIDS.



## 6. Conclusion

In Kerala the sexual knowledge among the infected HIV/AIDS persons reveals various dimension of their attitude towards sex practices. The males from the unemployed Muslim community and their educational status up to high school are using condoms. These groups collecting condoms freely from the Govt institutions. While housewife from the Hindu community have sex knowledge from the books they are in purchasing condoms from the medical store and facing difficulty. It is noted that HIV/AIDS infected people know the importance of Sexually Transmitted Disease and condom usage it will prevent the STD. They also know the importance of hygiene after the intercourse they washing their genital parts this will reduce the transmission of STD. Majority of the HIV/AIDS infected persons have the habit of sexual inter course before marriage and they are mainly truck and auto drivers in Kerala.

Majority of the HIV/AIDS infected persons believe that STD is the primary cause of AIDS it is clearly exhibits the knowledge about the STD among the infected HIV/AIDS persons in Kerala. Now they are also bother about the hygiene of the genital parts after the inter course. It is to note that the infected persons are not used condoms in the last sex with their partner and not interest to purchase condoms. So need satisfactory information to improve the awareness among the people living with HIV/AIDS.

It is noted that Sexually Transmitted disease and condom use among the people living with HIV/AIDS .During the sexual intercourse friends are insisted condoms and their educational status is up to higher secondary level. Another dominant factor is the accessibility and availability of condoms to the people living with HIV/AIDS. This component explains that the people is living with HIV /AIDS in the age group of (20-29) with high school level education getting condoms below one hour time during intercourse with their colleagues. While the status HIV/AIDS infected people elementary school education not gets support from the personals from the medical store to purchase condoms.

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