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Original Research Article

Awareness of RTI/STI and HIV/AIDS among women in Kerala: a district level analysis based on DLHS-4

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ABSTRACT

Background: Many of the reproductive tract infections and sexually transmitted infections (RTI/STIs) are preventable and curable. Kerala is one of the highest literate states in India, but women in Kerala had very low knowledge in sexually transmitted infections and HIV/AIDS. The objective of the present study was to assess the level of awareness on RTI/STI and HIV/AIDS among women in Kerala with inter district variations on awareness among women in RTI/STI and HIV/AIDS. Another objective of the study was to find out the association between socio economic characteristics and awareness on RTI/STI and HIV/AIDS.
Methods: Data for the present analysis comes from the district level household and facility survey-3 2007-08 (DLHS-3) and district level household and facility survey-4 (DLHS-4), 2015–16. DLHS is a nationally representative household survey, primarily conducted to monitor and evaluate the implementation of reproductive and child health program across the districts of India. To assess the level of awareness on RTI/STI and HIV/AIDS among women in Kerala with inter district variations on awareness among women in RTI/STI and HIV/AIDS data of DLHS-3 and DLHS-4 were used for analysis and to find out the association between socio economic characteristics and awareness on RTI/STI and HIV/AIDS, data of DLHS were used.
Results: Only 48% of women in Kerala had heard of RTI/STI in Kerala, but 75.8% of the women had heard about HIV/AIDS. Knowledge on RTI/STI and HIV/AIDS among women in all the districts in Kerala had fallen from the DLHS-3 to DLHS-4.
Conclusions: Decentralized field level interaction of health workers with IEC programs in both rural and urban areas regarding STIs/RTIs and HIV/AIDS should be strengthened along with effective mass media activities.

Keywords: RTI/STI, HIV/AIDS, Kerala, Knowledge, Women

INTRODUCTION

Reproductive tract infections (RTIs) and sexually transmitted infections (STIs) present a huge burden of disease and adversely affect reproductive health of people. According to the World Health Organization (WHO), each year around 499 million cases of curable STIs occur throughout the world in the age group of 15-49 years, of which 80 percent cases occur in developing countries and about 79 million cases occur in India annually.[1] Sexually transmitted infection (STI) is a significant public health problem in developing countries, including India. Prevalence of STIs is significantly higher among women than among men in developing countries.[2] More than a million women and infants die of the complications of RTI every year.[3] Complications due to

sexually transmitted infections have a profound impact on sexual and reproductive health.

The consequences of RTIs which are numerous and potentially devastating include post abortal and puerperal sepsis, ectopic pregnancy, foetal and perinatal death, cervical cancer, infertility, chronic physical pain, emotional distress, and social rejection in women. In addition to health consequences, women experience social consequences in terms of emotional distress related to gynaecological morbidity. As most of these illnesses progresses to a chronic state and remain with women for the rest of their lives, the importance of early detection and management becomes much more evident. The impact of RTIs on the transmission of HIV infection and the morbidity and mortality of HIV adds substantially to the total health impact of RTIs. Reproductive tract infections (RTIs) are caused by organisms normally present in the reproductive tract or introduced from the outside during sexual contact or medical procedures. The prevalence of self-reported RTI symptoms among Indian women has been found to be 11–18% in nationally representative studies.[4-8] RTIs are generally seen as a 'silent epidemic' and are among the leading public health problems significantly contributing to gynaecological morbidity and maternal mortality in India and other developing countries while the prevalence of laboratory-diagnosed RTIs has ranged from 28 percent to 38% and 40–57 percent in various other studies.[9]

Studies have found the prevalence of RTI in India, Bangladesh, Egypt, and Kenya is in the range of 52–90 percent.[10] More than a million women and infants die of the complications of RTI every year. Murray and Lopez estimated that the burden of reproductive illness was highest in India (12.5% of the total). The estimated number of HIV cases in 19 countries of South and Southeast Asia ranks second just after Sub-Saharan Africa.[11] RTI/STI including AIDS in India has been a public health issue, since the prevalence India has been on the rise and causes multiple complications. It is estimated that India is the single largest country with HIV/AIDS. Sexually transmitted infections constitute a significant health burden and increase the risks of transmission of HIV.[13] RTI is a common yet neglected health problem affecting health and social well-being of women in their most productive age. The psychological, socio-cultural and service-related factors have a major impact on women's reproductive health. In addition to the cultural ideas and beliefs about any illness, individuals own perception is also important. Women as well as society perceive different reproductive morbidities differently.

Objectives

The objective of the present study was to assess the level of awareness on RTI/STI and HIV/AIDS among women in Kerala with inter district variations on awareness among women in RTI/STI and HIV/AIDS. Another objective of the study was to find out the association between socio economic factors and awareness on RTI/STI.

METHODS

Data for the present analysis comes from the District Level Household and Facility Survey (DLHS) during 2007-08 (DLHS-3) and 2015–16 (DLHS-4).[14,15] DLHS is a nationally representative household survey, primarily conducted to monitor and evaluate the implementation of Reproductive and Child Health program across the districts of India. The DLHS is conducted with a main objective to provide reproductive and child health related database at district level. The survey is conducted under the stewardship of the Ministry of Health and Family Welfare, Government of India and coordinated by the International Institute of Population Sciences, Mumbai. The key aim of DLHS is to provide data on maternal care, immunization and child care, contraception and fertility reproductive health including knowledge about RTI/STI, HIV/AIDS and the utilization of government health services and user's satisfaction, at the district, state and national levels. For the purpose of the present study, all 14 districts of Kerala were considered for analysis. In these 14 districts, total of 12360 and 13780 eligible women respectively in DLHS-3 and DLHS-4 were interviewed. To assess the level of awareness on RTI/STI and HIV/AIDS among women in Kerala with inter district variations on awareness among women in RTI/STI and HIV/AIDS data of DLHS-3 and DLHS-4 were used for analysis and to find out the association between socio economic characteristics and awareness on RTI/STI and HIV/AIDS, data of DLHS were used.

RESULTS

The socio demographic profile of the study population is shown in Table 1. Majority 2772 (20.16%) study subjects were from age group 35-39 years, 9591 (69.60%) had education more than 10 years. Most of study subjects 7716 (55.94%) were Hindus by religion followed by 3575 (25.94%) Muslim 2406 (17.46%), Christian and 83 (0.60%) belongs to other religions like Jain. Majority 7577 (54.98%) study women were from other backward classes, 1356 (9.84%) from Scheduled caste and 198 (1.43%) from scheduled tribe.

Awareness of RTI/STI

The awareness of RTI/STI and HIV/AIDS was obtained from ever married women. Around 48 percent of women in Kerala had heard of RTI/STI. The proportion of women who were aware of RTI/STI was 46 percent in urban areas and 51 percent in rural areas. The women who have heard about RTI/STI varies from 27 percent in Kasaragod district to 73 percent in Kollam district. The districts were more than half of the women have heard about RTI/STI are, Kannur, Kozhikode, Thrissur, Kottayam, Alappuzha, Pathanamthitta and Kollam districts. Percentage distribution of women who have heard of RTI/STI in Kerala is shown in Table 2.

Awareness of RTI/STI was lower among young women, women with low age at consummation of marriage, non-literate and women from scheduled caste. Awareness of RTI/STI increases with education of women. Fifty percent of women who had completed ten or more years of education were aware about RTI/STI. Interestingly, knowledge on RTI/STI among women in all the districts in Kerala had fallen from the DLHS-3 to DLHS-4 in the range of 57.5 percent (Eranakulam) and 6.8 percent (Pathanamthitta).

Table 1: Socio demographic profile of the study population (N=13780).

Sl No	Socio demographic variables		Number of women (%)
1	Age (years)	15-19	146 (1.05)
		20-24	1293 (9.38)
		25-29	2363 (17.14)
		30-34	2732 (19.82)
		35-39	2772 (20.16)
		40-44	2459 (17.84)
		45-49	2015 (14.62)
2	Education	Non-literate	1048 (7.61)
		Less than 5 years	191 (1.38)
		5-9 years	2950 (21.40)
		10 or more	9591 (69.60)
3	Residence	Rural	6837 (49.62)
		Urban	6943 (50.38)
4	Husband's Education	Non-literate	1258 (9.12)
		Less than 5 years	309 (2.24)
		5-9 years	3644 (26.44)
		10 or more	8569 (62.18)
5	Religion	Hindu	7716 (55.94)
		Muslim	3575 (25.94
		Christian	2406 (17.46)
		Others	83 (0.60)
6	Caste	Schedules Caste	1356 (9.84)
		Scheduled Tribe	198 (1.43)
		Other Backward Classes	7577 (54.98)
		Others	4649 (33.73)

Table 2: Percentage distribution of women who have heard of RTI/STI in Kerala.

District/State	DLHS-3 2007-08	DLHS-4 2012-13	Difference from DHLS 4-3
Thiruvananthapuram	76.4	33.4	-43.0
Kollam	80.7	73.1	-7.6
Alappuzha	89.4	65.8	-23.6
Pathanamthitta	78.1	71.3	-6.8
Kottayam	78.1	52.7	-25.4
Idduki	62.0	45.4	-16.6
Eranakulam	88.2	30.7	-57.5
Thrissur	75.8	52.1	-23.7
Malappuram	68.2	37.1	-31.1
Palakkad	70.2	46.2	-24.0
Kozhikode	74.0	51.9	-22.1
Kannur	71.4	51.5	-19.9
Wayanad	80.1	26.6	-53.5
Kasargod	68.9	27.1	-41.8
Kerala	75.8	48.0	-27.8

Table 3: Percentage distribution of women who have any symptoms of RTI/STI in Kerala.

District/State	DLHS-3	DLHS-4	Difference from DHLS 4-3
Thiruvananthapuram	7	1.4	-5.6
Kollam	18.2	16.4	-1.8
Alappuzha	10.9	10.9	0
Pathamthitta	8.6	12.9	4.3
Kottayam	7.7	3.8	-3.9
Idduki	7.5	12.7	5.2
Eranakulam	14.1	11.6	-2.5
Thrissur	18	5.3	-12.7
Malappuram	14.4	7.2	-7.2
Palakkad	8.1	16.6	8.5
Kozhikode	20	12.1	-7.9
Kannur	8.6	8.9	0.3
Wayanad	13.1	5.3	-7.8
Kasargod	7.9	19.1	11.2
Kerala	12.2	10.6	-1.6

Table 4: Percentage distribution of women who have heard of HIV/AIDS in Kerala.

District/State	DLHS-3	DLHS-4	Difference from DHLS 4-3
Thiruvananthapuram	98.1	87.2	-10.9
Kollam	99.4	90.6	-8.8
Alappuzha	99.6	88.7	-10.9
Pathanamthitta	99.7	89.3	-10.4
Kottayam	99.1	86.8	-12.3
Idduki	96.9	60.7	-36.2
Eranakulam	99.7	70.7	-29
Thrissur	98.7	83.7	-15
Malappuram	95.3	66.2	-29.1
Palakkad	95.1	70.8	-24.3
Kozhikode	99	85.2	-13.8
Kannur	99	75.5	-23.5
Wayanad	94	70.4	-23.6
Kasargod	96	47.5	-48.5
Kerala	98.1	75.8	-22.3

Knowledge of symptoms of RTI/STI

The common symptoms of reproductive tract infections/sexually transmitted infections among women show that, 10.5 percent of ever married women have reported having symptoms related RTIs/STIs. And about 4.5 percent experienced abnormal vaginal discharge. The women reported itching or irritation over vulva (3.5%), pain in lower abdomen not related to menses (2.8%), boils or ulcer around vulva (1.9%) and pain during sexual intercourse (1.6%). 47 percent of women discussed the RTI/STI related problems with their husband or partner and 31.6% women sought treatment for RTI/STI problems. The women mostly sought treatment for RTI/STI (53.1%) from private health facility and 45.2 percent of women sought treatment in government health facility. Unsafe sex with persons who have many partners and unsafe sex with commercial sex workers are the prime modes of transmission of RTI/STI.

The women of four districts (Pathananthitta, Idukki, Palakkad and Kasargod) in Kerala who have any symptoms of RTI/STI had come down from the DLHS-3 to DLHS-4. But in all other districts except Alappuzha, women with symptoms of RTI/STI had raised in the range of 12.7 percent (Thrissur) and 1.8 percent (Kollam). The Alappuzha district remains constant in this case. The distribution of women with any symptoms of RTI/STI is shown in the Table 3.

Awareness of HIV/AIDS

The awareness on HIV/AIDS was asked to ever-married women age 15-49 years. Three fourth (75.8%) of the women had heard about HIV/AIDS. More than 73 percent of the women reported unsafe sex with person having many partners, transfusion of infected blood (61%) and sharing of injection/needle (46%) as mode of transmission of HIV/AIDS. The reported modes of

transmission of HIV/AIDS differ by residence, education of women and husband. The Percentage distribution of women who have heard of HIV/AIDS in Kerala is shown in Table 4.

Knowledge on HIV/AIDS among women in all the districts in Kerala had fallen from the DLHS-3 to DLHS-4 in the range of 48.5 percent (Kasargod) and 8.8 percent (Kollam).

Knowledge of mode of transmission of HIV/AIDS

The knowledge of the transmission of RTI/STI varies by residence, age at consummation, education of women and education of the husband. 71 percent of women were of the view that HIV/AIDS can be prevented by avoiding risks of getting infected through blood. About more than one-third of women were of the opinion that by using condom correctly during each sexual intercourse and having sex with one uninfected partner can prevent HIV/AIDS. The misconception about transmission of HIV/AIDS from mosquito, flea or bedbug was reported by 9 percent of women. The other misconception was sharing food (2%), stepping on someone's urine/stool, sharing clothes (2%), hugging and shaking hand (2%) respectively. The women who had heard about HIV/AIDS were asked the place to test the HIV/AIDS. 53 percent of women know the place where the HIV/AIDS could be tested. The differences in the place of test were found by residence, age at consummation of marriage, education of women and husband. Thirty five percent of women reported government hospital/dispensary and 39 percent reported private hospital/clinic as a place where people can go for HIV/AIDS test. The women who have heard about HIV/AIDS were asked if they had gone for the test. Fifty-four percent of women had undergone for HIV/AIDS test.

Table 5: Socio demographic correlates and knowledge on RTI/STI of study subjects (n = 6545).

Socio demographic correlates	No. of women 's knowledge on RTI/STI		Chi square	P value
Age	Yes	%		
15-19	49	33.6		
20-24	576	44.5		
25-29	1183	50.1		
30-34	1307	47.8		
35-39	1357	49		
40-44	1177	47.9		
45-49	896	44.5	32.2	0.001
Place of residence				
Rural	3402	49.8		
Urban	3143	45.3		
Education of respondent				
Non-literate	85	8.1		
Less than 5 years	48	25.1		
5-9 years	1262	42.8		
10 or more	5150	53.7	864.3	0.001
Religion				
Hindu	3812	49.4		
Muslim	1436	40.2		
Christian	1266	52.6		
Others	31	37.3	116.9	0.001
Caste				
OBC	3482	46		
SC	583	43		
ST	82	41.4		
General	2398	51.6	52.3	0.001
Husbands education				
Non-literate	136	10.8		
Less than 5 years	93	30.1		
5-9 years	1671	45.9		
10 or more	4645	54.2	875.1	0.001

Association of selected socio demographic characteristics with knowledge on RTI/STI and HIV/AIDS

In Kerala, 47.5 percent of the women had heard about RTI/STI. It was higher in the age group 25-29 than other age groups, and the difference was statistically significant. The knowledge of RTI/STI was found highest among the respondents who were residing in rural area (49.8%). The level of knowledge of women who have education more than ten years have highest (53.7%) and was lowest among the respondents who were non-literate (8.1%) and education less than five years of education (25.1%). It was found that Christians were highest knowledge (52.6%). It was also found that women belonged to scheduled tribe, scheduled caste and backward castes were below the awareness level than the general population. Table 5 shows the knowledge on RTI/STI among women in relation to various socio demographic factors. All the factors namely, age, place of residence, education, religion, caste and husband's education and knowledge on RTI/STI was found statistical significance p value of 0.001.

The knowledge of HIV/AIDS of the women in relation to age, education, place of residence, religion, caste and husband's education was found to be significantly associated with p value of 0.001.

DISCUSSION

About forty eight percent ever married women have awareness of RTI/STI in Kerala and the difference between women who were aware of RTI/STI was 5 percent in urban areas and rural areas, which is consistent with a study on school going adolescence girls.[16] It was found that only 42% of girls know about STIs and the same percentage are aware about HIV/AIDS.

The women who have heard about RTI/STI varies from 27 percent in Kasaragod district to 73 percent in Kollam district and more than 50 percent women of seven districts have heard about RTI/STI. Awareness of RTI/STI was lower among young women, women with low age at consummation of marriage, non-literate and women from Scheduled Caste. Knowledge on RTI/STI among women in all the districts in Kerala had fallen from the DLHS-3 to DLHS-4 in the range of 57.5 percent (Eranakulam) and 6.8 percent (Pathanamthitta). These may be due to the shift of health works to non-communicable diseases and low fund allocation for mass publicity through electronic and print media.

10.6 percent of ever married women have self-reported symptoms related to RTIs/STIs. About 4.5 percent experienced abnormal vaginal discharge. The women reported itching or irritation over vulva (3.5%), pain in lower abdomen not related to menses (2.8%), boils or ulcer around vulva (1.9%) and pain during sexual intercourse (1.6%). We found that the prevalence of self-reported RTIs (at least one symptom) was loweer than that reported in some similar studies. A study in rural Hoogli showed that the prevalence of RTI was 13.5%, the most common symptom being foul smelling discharge per vaginum.[17] Another population based study conducted in Hubli, Karnataka also showed that the prevalence of RTI was around 40%.[18] This difference might be due to higher education, better hygiene practices among women. It is found poor knowledge and poor treatment seeking behaviour among the study women. For various reasons, only 31.6 percent women seek treatment for their reproductive illness. Various studies documented reasons included gender inequality, financial constraints lack of perceived need and psychosocial constraints including stigma.[19-26] They tended to seek treatment only when their health problems caused great physical discomfort or affected their work performance. The ways to prevent to reduce the incidence of RTI/STI are awareness generation and curative measures such as effective and holistic treatment. Thus the large burden of RTI can be decreased by preventing the occurrence of new cases and effective treatment of the prevalent cases.

It is shown in community based studies that, basic knowledge of HIV/AIDS is still lacking in two fifths of the rural youth 75.8% of the women had heard about HIV/AIDS. More than 73 percent of the women reported unsafe sex with person having many partners as mode of transmission of HIV/AIDS.[27,28] The reported modes of transmission of HIV/AIDS differ by residence, education of women and husband. As same the level of knowledge on RTI/STI, HIV/AIDS among women in all the districts in Kerala had fallen from the DLHS-3 to DLHS-4 in the range of 48.5 percent (Kasargod) and 8.8 percent (Kollam).

71 percent of women were of the view that HIV/AIDS can be prevented by avoiding risks of getting infected through blood. About more than one-third of women were of the opinion that by using condom correctly during each sexual intercourse and having sex with one uninfected partner can prevent HIV/AIDS. The misconception about transmission of HIV/AIDS from mosquito, flea or bedbug was reported by 9 percent of women. More than 53 percent of women know the place where the HIV/AIDS could be tested.

CONCLUSION

There is a need for preventing new RTI/STI cases by educating people about the common symptoms, common methods of transmission, complications and preventive measures. It is also necessary to root out the stigma associated with RTIs/STIs and HIV/AIDS and favourably modify the treatment-seeking behaviour of the patients. Effective treatment can be increased in the primary healthcare services for RTI, STI. It is needed the service of social worker/health worker to discuss STIs/RTIs problem among women and explain correct treatment

within a short period of time. The observations of the current study strongly suggests to put more emphasis for IEC programs in both rural and urban areas regarding STIs/RTIs and HIV/AIDS.

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