

# Study of awareness and impact of training on STI/RTI towards capacity building of medical officers in the district of Vizianagaram, Andhra Pradesh

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## Abstract

**Introduction:** Health care providers (HCPs) are considered to play a pivotal role in reducing the burden of STI/RTI and stemming the spread of STI through effective preventive and curative services to individuals suffering from HIV/AIDS and STIs. **Aims and Objectives:** To assess awareness of the medical officers about the STI/ RTI and to judge the impact of the training in capacity building towards improvement of their awareness. **Materials and Methods:** Observational cross sectional study was conducted in 30 medical officers attending the training. A structured questionnaire containing 30 close ended questions on the various aspects of awareness about STI /RTI was administered to them for pre and post tests. Chi square test and Z test were applied as the tests of significance. **Results:** During pre-test, 13 (43.33%) of the participants were aware that STI/RTI can exist without any symptoms or signs. The correct response to the same question rose to 28 (93.33%) in the post-test. During the pre-test it was observed that 15 (50%) of the study participants had the correct awareness that asymptomatic carriers can pass infections to their partners during sexual contact. The correct response was given by 24 (80%) study participants during post-test. Mean score for all the questions considered together increased from 17.5 during pre test to 26.2 during post test with a Z of 15.67 and p value of < 0.0001. **Conclusion:** Medical officers were found to have sufficient awareness about STI/RTI. The significant increase in the post test scores showed that the training was also proved to be effective in improving the awareness on STI/RTI.

**Keywords:** STI, RTI, Health care providers (HCPs), awareness, training.

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## INTRODUCTION

Sexually transmitted infections (STI) and reproductive tract infections (RTI) are important and leading public health challenges in the whole world and in India<sup>1</sup>. Every year many cases of treatable STIs occur worldwide between 15-49 years of age<sup>2</sup>. Globally about 340 million new cases of sexually transmitted bacterial infections

occur annually with 151 million of them in South and Southeast Asia<sup>3,4</sup>. The onslaught of the consequences mainly falls on women and children. Untreated STI/ RTIs lead to complications like cervical cancer, ectopic pregnancy; congenital syphilis, ophthalmia neonatorum, pelvic inflammatory diseases and consequent infertility and reproductive morbidity, stillbirth, prematurity<sup>5,6</sup>. Hepatitis B and human immunodeficiency virus (HIV) infections take the upper hand in presence of STI/RTI. Social stigma attached to the diseases and discriminations predominantly affect the women. The economic outcome that results from STI/ RTI are the loss of productive life years which ultimately influence the progress and development of the country. STIs increase the risk of acquiring and transmitting HIV infection by three to five times<sup>7, 8</sup>. So from all these considerations an element of urgency is felt necessary for prevention and control of STI/RTI. Further if STI/RTI are controlled, it helps to

decrease HIV infection rates and opens the door for counseling about HIV prevention and good reproductive health. National Rural Health Mission (NRHM) and National AIDS Control Organisation (NACO) have developed strategies for prevention, control and effective management services of STI and RTI under phase-II of Reproductive and Child Health (RCH) programme and phase-III of National AIDS Control Programme (NACP). For the above purpose, one such strategy is to build up the capacity of medical officers who are working in different health facilities of the districts. Health care providers (HCPs) are considered to play a pivotal role in reducing the burden of STI/RTI and stemming the spread of STI through effective preventive and curative services to individuals suffering from HIV/AIDS and STIs<sup>9</sup>. Less has been published about HCPs' and specifically doctors' knowledge despite this being an important component in the national response to the prevention and control of STI, RTI and HIV. To provide effective management services to the needy person's capacity of the medical officers of different health facilities is being built up each year by offering training to them at district level. As a part of such activities, medical officers from different health facilities of the district of Vizianagaram (AP) attended such a district level training programme organized during the month of February 2014 in the venue of meeting hall located in the office of the District Medical and Health Officer (DMHO), Vizianagaram. With all this background, the present study was conducted with the objectives to assess the STI/ RTI awareness of the medical officers and to judge the impact of the training in capacity building towards improvement of their awareness.

## MATERIAL AND METHODS

### Study Setting and Participants

The study was conducted during the training for medical officers in Vizianagaram district Andhra Pradesh. This was a cross sectional study conducted among the medical officers attending the training. Before inducting them to the training programme proper it was felt necessary to know their background knowledge about epidemiology and the case management about STI/ RTI because all of them were medical graduates at the first instance and have been taught about the subject during their course of study. So a pre-test was arranged for them. After the training sessions, a post-test was also taken up to judge the level of improvement in their knowledge in this regard. In this training programme as per norms only 30 medical officers were included and they formed the study sample with 100% inclusion. The training programme was spread over a duration of two days.

### Methods

A structured questionnaire containing 30 close ended questions on the various aspects of awareness about STI /RTI was administered to them for pre and post tests. WHO Protocol for Control of Sexually Transmitted Diseases<sup>10</sup> and the training manual on STI/ RTI for medical officers<sup>5</sup> were used to develop the self administered questionnaire. Questions included diagnosis, risk factors, possible modes of transmission, epidemiological trends, clinical signs and symptoms, STD syndromes, laboratory diagnosis, causative organisms, consequences/complications, treatment protocols for various STD syndromes as well as for individual STDs, and preventive measures. Health care providers' counseling skills, attitudes towards STDs, HIV/AIDS patients and actual practices while dealing with these patients were also determined. The questionnaire was distributed to the medical officers. Verbal consent was sought from the respondents before distribution of the questionnaire.

### Statistical analysis

Data entry was done in Microsoft office excel version 2007. The analysis was processed in SPSS version 15.0. Overall STI/RTI knowledge was evaluated by scoring. Every correct answer on STI/RTI knowledge was scored as 1. "Do not know" or incorrect answer was given a score of 0. Thus the final scoring was given out of 30 each for the pre test and post test. Percentages, proportions, mean and standard deviation (SD) were used for the descriptive analysis. Chi-Square test was performed to examine the difference between proportions. Z test was applied for interpreting means. The level of significance was set at p value 0.05.

## RESULTS

Of the total number of 30 medical officers participating in the training programme, 18 (60%) were males and remaining 12 (40%) were females. All of them were in the age range of 28 to 40 years with a mean age of 33.17 years and a standard deviation (SD) of 2.79 years. All of them were well aware that the mode of transmission of STI/ RTI was mainly person to person sexual contact. Everyone was also aware that safer sex referred to practices which allowed partners to reduce their sexual health risks. During pre-test, 13 (43.33%) of the participants were aware that STI/RTI can exist without any symptoms or signs. The correct response to the same question rose to 28 (93.33%) in the post-test. During the pre-test it was observed that 15 (50%) of the study participants had the correct awareness that asymptomatic carriers can pass infections to their partners during sexual contact. The correct response was given by 24 (80%) study participants during post-test. Table 1 shows the detailed awareness about various other aspects of STI/ RTI.

**Table 1:** Awareness about transmission of STI/ RTI

Awareness parameter about STI/ RTI	Correct pre-test response Number (%)	Correct post-test response Number (%)	Chi square (Yate's) at df 1	p- value
Asymptomatic infections can be passed to a partner during sexual contact	15 (50.0%)	24 (80.0%)	4.69	0.03*
It is possible to have STI/RTI without any symptoms or signs of the disease	13 (43.33%)	28 (93.33%)	15.1	<0.0001*
Women are more vulnerable than men for contracting a STI from the sexual partner	20 (66.67%)	26 (86.67%)	2.33	0.127
High risk sexual behavior contributes to the rapid spread of STI/RTI	15 (50.0%)	26 (86.67%)	7.7	0.005*
Hepatitis B, C and HIV can be transmitted from mother to child, by unprotected sexual intercourse and by needle prick injuries	18 (60.0%)	30 (100%)	12.6	0.0003*
Genital ulcer disease may facilitate the spread of HIV	12 (40.0%)	29 (96.67%)	19.72	<0.0001*

\* Indicates statistically significant p- value, df (degree of freedom)

Instead of diagnosing and treating each STD separately, syndromic approach based on group of symptoms is proven effective in control and treatment of STI/ RTI.

The details about awareness of various aspects of syndromic approach of STDs are shown in table 2.

**Table 2:** Awareness about syndromic approach of STDs

Awareness parameter about STI/ RTI	Correct pre-test response Number (%)	Correct post-test response Number (%)	Chi square (Yate's) at df 1	p- value
STI/ RTI can be classified according to syndromes and type of infectious agents	16 (53.33%)	24 (80.0%)	3.68	0.055
Gonorrhoea is one of the causes of vaginal discharge in females	22 (73.33%)	25 (83.33%)	0.39	0.53
Gonorrhoea and Chlamydia are main causes of urethral discharge	16 (53.33%)	25 (83.33%)	4.93	0.026*
Women having cervical mucopurulent discharge and lower abdominal pain without rebound tenderness should be treated for PID	17 (56.67%)	25 (83.33%)	3.89	0.0485*
Enhanced syndromic approach to STI/RTI is based on laboratory tests, clinical signs and symptoms	20 (66.67%)	26 (86.67%)	2.33	0.126
Syndromic management is of limited utility in patients with vaginal discharge	19 (63.33%)	27 (90.0%)	4.57	0.0325*
In men, urethral discharge can be a sign of chlamydia, gonorrhea, trichomoniasis	15 (50.0%)	26 (86.67%)	7.7	0.005*
Chlamydia causes swelling or pain in scrotum	20 (66.67%)	25 (83.33%)	1.42	0.233
Syndromic approach is a better approach than only clinical or etiological approach in management of STI/RTI	21 (70.0%)	28 (93.33%)	4.01	0.0452*
Chancroid will present as progressive genital ulcers that cause extensive tissue damage if not treated	21 (70.0%)	26 (86.67%)	1.57	0.210
In women the signs and symptoms of STI/RTI are often less reliable indicators of disease than men	19 (63.33%)	26 (86.67%)	3.2	0.0736

\* Indicates statistically significant p- value

The adequate management of STI/RTI requires treatment of the partners and patient compliance to avoid failure of treatment. Such aspects regarding awareness about management of STI/ RTI are shown in table 3.

**Table 3:** Awareness about management of STI/RTI

Awareness parameter about STI/ RTI	Correct response Number (%)	Correct post-test response Number (%)	Chi square (Yate's) at df 1	p- value
All STI/RTI are easily treatable with antibiotics	18 (60.0%)	23 (76.67%)	1.23	0.267
If left untreated STI/RTIs can cause serious complications	20 (66.67%)	29 (96.67%)	7.12	0.0076*
Patients should be referred for STI/RTI diagnosis and Treatment even in the absence of signs and symptoms of infection	16 (53.33%)	25 (83.33%)	4.93	0.0263*
Single-dose therapy is preferable to multiple-dose therapy for STI/RTIs	17 (56.67%)	26 (86.67%)	5.25	0.0219*

STI treatment and prevention plays an important role for limiting the spread of HIV	20 (66.67%)	26 (86.67%)	2.33	0.127
When a person complains of symptoms of STI/RTI both general physical and genital examinations are needed	19 (63.33%)	25 (83.33%)	2.13	0.1444
Critical components of STI/RTI management are condom promotion, partner motivation as well as counseling and education	15 (50.0%)	27 (90.0%)	9.6	0.0019*
When a person complains of symptoms of STI/RTI both general physical and genital examinations are needed	20 (66.67%)	26 (86.67%)	2.33	0.127

\*Indicates statistically significant p- value

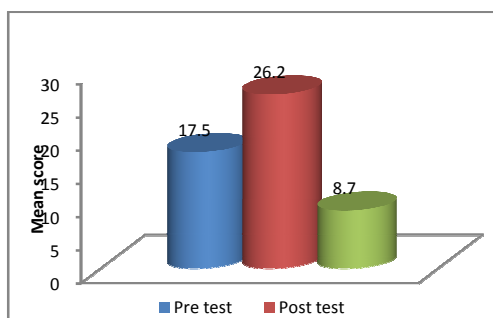
The details about awareness of miscellaneous aspects of STI/RTI such as prevention and use of condoms are shown in table 4.

**Table 4:** Awareness about miscellaneous aspects of STI/RTI

Awareness parameter about STI/ RTI	Correct pre-test response Number (%)	Correct post-test response Number (%)	Chi square (Yate's) at df 1	p- value
Spermicides use does not prevent form STI transmission	15 (50.0%)	28 (93.33%)	11.82	0.0005*
Condoms are barrier method effective against STI/ PTI transmission as well as pregnancy prevention	20 (66.67%)	25 (83.33%)	1.42	0.233
Cervical cancer cannot be prevented by only screening for herpes	13 (43.33%)	28 (93.33%)	15.1	<0.0001*
Care providers should not restrict only to medical terminology for effective communication with the clients	18 (60.0%)	26 (86.67%)	4.18	0.0409*
In developing countries most useful laboratory tests for control of STI/RTI are screening tests for syphilis like RPR or VDRL	15 (50.0%)	26 (86.67%)	7.7	0.0055*

\* Indicates statistically significant p- value

The mean of pre test scores of the study participants was noted as 17.5 with a standard deviation (SD) of 2.70 and the mean of post test score was found to be 26.2 with a SD of 1.61. Thus the score increased during post test with a Z of 15.67 and p value of < 0.0001. The mean of these pre and post test is represented in Graph 1.



**Figure 1:** Mean of pre test and post test scores of the study participants

## DISCUSSION

The presence of well-trained HCPs is a major boon for STI/ RTI case management. Physicians working with STI/ RTI and specifically HIV/AIDS patients are expected to be able to manage clinical information and also to confront their own prejudices about the sexual and moral choices of persons whom they perceive to be at high risk or who have HIV/AIDS. Sufficient knowledge of STIs leads to reliable diagnosis and adequate treatment. Whereas insufficeient knowledge might contribute to prolongation of infectivity, increased drug resistance, and further transmission of STIs<sup>10</sup>. This holds true in India where there are designated STI clinics and syndromic management is the main stay of STI/RTI management which is done even at primary health center level by the medical officers. Literature review did not

reveal any study to know the effect of training in improving the awareness about STI/RTI. Hence most of the results of the present study are discussed in comparison with other relevant studies on knowledge or awareness about STI/RTI and HIV conducted among health care providers including doctors. The present study tested for the knowledge about STI/RTI as well as the effect of training in medical officers revealed conspicuously good level of knowledge regarding most aspects of STI including the modes of transmission. Similar observation has been reported in a study from Pakistan<sup>11</sup>. This is in contrast to the previous studies done by other researchers as quoted in various studies<sup>9, 12, 13</sup>. Another observation in the present study was that most of the study participants were aware about the main route of transmission of STI as sexual contact. This is in



coherence with the observations in other studies from India<sup>14</sup> as well as other countries<sup>9, 11-13, 15</sup>. This increased level of awareness regarding transmission about STIs could be due to the importance given to STI and the repeated trainings on the topics at various levels. During pre test, in the present study only half of the participants were aware about the facts that asymptomatic infections can also lead to spread of STI and STI/ RTI can exist without any signs or symptoms. The post test wherein more than three- fourths of the participants gave correct responses revealed a highly significant increase in the awareness about the same. A statistically highly significant increase in the awareness was also noted regarding contribution of high risk sexual behaviour in the rapid spread of STI/RTI. Almost three- fourths of the study participants had correct awareness about this as observed during the post test. Lan *et al*<sup>12</sup> in their study in Vietnam among health care providers also reported a high level knowledge in the study participants about high risk sexual behaviour as a risk factor for STI. The same study also reported about the misconception among the study participants that bad hygiene when having sex was risk factors for STI. All the study participants as shown in the post test were aware about transmission of HIV, Hepatitis b and C from mother to child intranatally and by needle prick injuries. Similar observation has been reported by Kermode M *et al*<sup>14</sup> in their study in nurses and doctors in rural India and Lan *et al*<sup>12</sup> in their study among health care providers in rural Vietnam. Syndromic management of STI has proved to be cost effective and particularly suitable for resource-poor settings<sup>16</sup>. Regarding various aspects of syndromic approach to STI/ RTI, during post test more than three- fourths of the study participants gave correct responses in the present study. This observation does not match with that of another study<sup>12</sup> conducted during 2006 wherein although many respondents answered that they knew about the syndromic approach, but in fact, none of them gave syndromically correct diagnosis or treatment. In another study conducted during 2007-2008 among general practitioners in Karachi Hussain MFA *et al*<sup>11</sup> reported that only 26.2% practitioners were aware about the WHO recommended syndromic management protocol for STDs. The higher degree of awareness about syndromic approach in the present study in comparison with other studies<sup>11, 12</sup> probably could be due to the fact the in past few years all the health care providers including medical officers have been trained on this topic. The correct awareness that untreated STI/RTIs can cause serious complications in the form of ectopic pregnancy, PID, infertility etc was present in two third of the medical officers during pre test and it was significantly increased during post test where almost all of them answered it

correctly. Hussain MFA *et al*<sup>11</sup> observed in their study that 86% of the practitioners knew that complications like infertility might result from some STDs in both males and females. Lan *et al* also reported a correct knowledge of 51% to 96% in their study respondents regarding various complications of STI/RTI<sup>12</sup>. The comparison of the mean of pre test scores of the study participants with that of their post test scores revealed a statistically highly significant increase (p value < 0.0001) in the post test scores. Thus the awareness about transmission, syndromic approach and treatment of STI/RTI increased in the study participants. The study of Lan *et al* also showed that the training courses seemed to have had a significant impact, not on providers' knowledge, but on practice, and more resources are needed for STI training for all relevant HCPs as trained participants had higher knowledge when compared with the non trained study participants<sup>12</sup>. The present study indicates a positive impact of the training for improving the knowledge in the participating medical officers. In a nutshell, the training programme was proved to be effective as obvious from the post test results of the present study. The study has certain limitations as it involves a relatively small sample size in a limited study area.

## CONCLUSIONS

In the present study, the medical officers participating in the study had sufficient awareness about STI/ RTI. The training programme also proved to be significantly effective in improving the level of awareness as obvious from the comparison of the pre test and post test scores. This highlights the need for such training programmes at frequent intervals involving the health care providers of various cadres so that over a period of time the entire health team will have adequate knowledge about STI/RTI and such capacity building will finally improve quality of health care leading to a better management of this upcoming public health problem.

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## REFERENCES

1. Trends in Reportable Sexually Transmitted Diseases in the United States, 2007 National Surveillance Data for Chlamydia, Gonorrhea, and Syphilis. From centre for

- disease control and prevention. (Online) (Cited 2009 April 1). Available from URL: <http://www.cdc.gov/std/stats07/trends.htm>.
2. Prevention and control of sexually transmitted infections: draft global strategy, Report by the Secretariat. From WHO. (Online) (Cited 2008 Oct 13). Available from URL: [http://www.who.int/gb/ebwha/pdf\\_files/WHA59/A59\\_11-en.pdf](http://www.who.int/gb/ebwha/pdf_files/WHA59/A59_11-en.pdf).
3. Somnath Roy, Deoki Nandan. Development towards achieving Health/ reproductive Health for All and Millennium Development Goals: A Critical Appraisal for strengthening action programmes (Part-II). Health and Population-Perspectives and Issues [online] 2007 [cited on 2011 Sep 30]; 30(3):150-176. Available from: URL: <http://medind.nic.in/htab/t07/i3/habt07i3p150>.
4. World Health Organisation (WHO) Global prevalence and incidence of selected curable sexually transmitted infections: Overview and estimates, Geneva: WHO, 2001.
5. National Guidelines on Prevention, Management and Control of Reproductive Tract Infections including Sexually Transmitted Infections Ministry of Health and Family Welfare Government of India [online] 2007 Aug [cited on 2011 Sep 30] Available from: URL: [http://www.nacoonline.org/upload/Policies%20and%20Guidelines/14,%20National\\_Guidelines\\_on\\_PMC\\_of\\_RTI\\_Including\\_STI.pdf](http://www.nacoonline.org/upload/Policies%20and%20Guidelines/14,%20National_Guidelines_on_PMC_of_RTI_Including_STI.pdf)
6. Westrom L. Incidence, prevalence and trends of acute pelvic inflammatory disease and its consequences in industrialized countries. Am J Obst and Gynaec, 1980; 138:880-892.
7. Wasserheit J, Epidemiological synergy: interrelationships between human immunodeficiency virus infection and other sexually transmitted diseases, Sexually Transmitted Diseases, 1992;19(2):61-77.
8. Cohen M. Sexually transmitted diseases enhance HIV transmission: no longer a hypothesis, Lancet 1998; 351(3):5-7.
9. Khan MS, Unemo M, Zaman S, Lundborg CS. Knowledge, attitudes and practices regarding human immunodeficiency virus/acquired immune deficiency syndrome and sexually transmitted infections among health care providers in Lahore, Pakistan. J Ayub Med Coll Abbottabad. Oct-Dec 2009; M21 (4):1-6.
10. World Health Organization. Global Strategy for the Prevention and Control of Sexually Transmitted Infections: 2006-2015. Key Messages. Geneva, Switzerland: World Health Organization; 2006. [http://whqlibdoc.who.int/hq/2006/WHO\\_RHR\\_06.10\\_eng.pdf](http://whqlibdoc.who.int/hq/2006/WHO_RHR_06.10_eng.pdf).
11. Hussain MFA, Khanani MR, Siddiqui SE, Manzar N, Raza S, Qamar S. Knowledge, Attitudes and Practices (KAP) of General Practitioners (GPs) regarding Sexually Transmitted Diseases (STDs) and HIV/ AIDS in Karachi, Pakistan. J Pak Med Assoc. February 2011; 61(2):262-265.
12. Lan TP, Mogren I, Phuc HD, Lundborg CS. Knowledge and practice among healthcare providers in rural vietnam regarding sexually transmitted infections. Sexually transmitted diseases. December 2009; 36 (12): 1-7.
13. Phrasisombath K, Thomsen S, Hagberg J, Sychareun V, Faxelid E. Knowledge about sexually transmitted infections (STIs) and attitudes towards female sex workers with STI symptoms among health care providers in Laos. Asia-Pacific Journal of Public Health. 20(10):1-13.
14. Kermode M, Holmes W, Langkham B, Thomas MS, Gifford S. HIV-related knowledge, attitudes and risk perception amongst nurses, doctors and other healthcare workers in rural India. Indian J Med Res. September 2005; 122: 258-264.
15. Islam MT, Mostafa G, Bhuiya AU, Hawkes S, Francisco A. Knowledge on, and attitude toward HIV/AIDS among staff of an international organization in Bangladesh. J Health Popul Nutr. Sep 2002; 20(3): 271-278.
16. Mayaud P, Mabey D. Approaches to the control of sexually transmitted infections in developing countries: old problems and modern challenges. Sex Transm Infect. 2004; 80:174 -182.

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