Volume 2, Issue 1, January 2014

# **International Journal of Research in Advent Technology**

Available Online at: <a href="http://www.ijrat.org">http://www.ijrat.org</a>

# A PROSPECTIVE STUDY OF GENDER DISPARITY IN TUBERCULOSIS TRANSMISSION AND CONTROL

### Navjot Kaur

School of Mathematics and Computer Applications Thapar University, Patiala-147001, Punjab <sup>1</sup> Email- navjotkaur@thapar.edu

#### **ABSTARCT:**

The present research article foregrounds the close relationship between gender and TB transmission and its control. The emphasis is given on women health as they remained the target of TB disease and its related mortality. In the developing countries women are susceptible to the same infections as that of men, but lack of information remained a barrier for women to recognize the early symptoms of diseases and hence become infected. Moreover, they remain infected for years because of poorer health status and poorer access to health care services as compared to men. The analysis is done to classify the gender based disparities and hence to use the information in TB control and prevention attempts. It has been observed that gender specific comparisons in TB rates are essentially required for timely diagnosis and treatment of the infectives.

Keywords: Tuberculosis; Diagnosis; DOTS.

#### 1. INTRODUCTION

Epidemiology is concerned with the identification of causes of diseases their medication, treatment and then eradication of the disease. The identification of causes often remained a prerequisite for the application of epidemiological findings in public health programmes, health service planning and clinical medicine [8]. Tuberculosis (TB) is among world's deadliest infectious disease caused by the bacillus Mycobacterium tuberculosis. As per WHO estimates one third of the world's population is infected with TB and around 1.5 million TB-related deaths worldwide. Tuberculosis is under control in most of the countries with high-income still continues to affect persons living in low-income and lower-middle-income [5, 11]. It has been declared as a notifiable disease in Australia, Hong Kong, Malaysia, United Kingdom and United States. From May 2012 it is declared a notifiable disease in India also [17]. The disease spreads in the air when people with pulmonary TB expel bacteria [13].

## 2. Tuberculosis and gender sensitivity in case detection

TB kills more women each year as compared to any other infection. In lower-income countries, twice as many men are notified with tuberculosis as women. The prevalence of TB is alike in males and females until adolescence, when it increases in males [1, 15, 16]. As compared to women more men are diagnosed with TB worldwide and die from it. TB is nevertheless a leading infectious cause of death among women. It is reported that about 700 000 women patients die of TB annually, and more than three million get infected with the disease, accounting for about 17 million Disability Adjusted Life Years (DALY). Tuberculosis affects women mainly in their economically and reproductively active years and the impact of the disease is also experienced by their family members strongly. The mortality, incidence, and DALY indicators do not reflect this hidden burden of social impact [16].

The diagnosis and treatment of TB is not available equal across male and female patients, as the number of women diagnosed with the disease is very little as compared to men. Men are more likely to get infected with latent TB, whereas women are more likely to develop active TB disease [15, 18, 19]. Delay in diagnosis and treatment is observed as the major reason behind the stigma among women. TB remains the third leading cause of death among women in reproductive age (i.e. between 15–44 years), disproportionately affecting pregnant women and the people with poor household conditions.

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Fig. 1 shows a significant comparison carried out by WHO regions showing prevalence of tuberculosis (Smearpositive) notification rates in young people (15-24 yrs) among male and female population from Western Pacific Regionnal Office (WPRO), South-East Asia Regional Office (SEARO), Europe Regional Office, Easterrn Mediterranean Regional Office (EMRO), Regional Office of America (AMRO), Regional Office of Africa (AFRO), respectively [12, 15].

Source: WHO Report 2003 - Global Tuberculosis Control



Fig.1. Smear-positive notification rates in young people (15-24 yrs), WHO Regions, 2001.

From the WHO report on the situation of TB prevalence in the South-East Asia region, the TB prevalence in India among the male population and female populations is shown in Fig.2(i) and Fig.2(ii), respectively.



Fig.2. (i) Trends in notified new smear-positive TB cases by age group among males, 2001–2010. (ii) Trends in notified new smear-positive TB cases by age group among females, 2001–2010.

# 3. Barriers in TB diagnostic delay among women

The WHO's Direct Observed Therapy Short Course (DOTS) strategy is the most effective available in tuberculosis control strategy that constitutes of many constructive aspects and is considered as a resourceful and cost effective. It is a strategy in which healthcare workers completely observe the treatment course to be given to the TB patients [2]. The expansion of this strategy could have a rapid impact on tuberculosis mortality and prevalence rates [2, 13]. But the literature review indicated that the policy is not gender sensitive and does not take into consideration the diverse life conditions affecting men and women populations worldwide. WHO's present strategy is not gender sensitive as there is limited information about different life conditions and the

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biology of males and females is available which can accelerate the risk of infection, fatality [4]. In the context of women infectives, DOTS approach can be very helpful in reducing the infection transmission but it depends on a woman's ability to be acquainted with the symptoms of TB and whether they access the available proper health care facility.

In the developing countries, women are more likely to experience informal local health services than men. A study of TB treatment in China's rural area is informative in this regard [10]. The study observed that although women approached for treatment earlier compared to men, but they often used lower level health services i.e. rural health stations while men used higher level services such as hospitals. This was the major reason behind the delays in treating women because treatment was not available at lower level health service centers. The diagnostic delay of the infection is a strong factor behind the increase in women TB patients. In a study in Vietnam, 1,027 new smear-positive pulmonary TB patients were studied [7] in which the diagnostic delays in the patients were observed. It was found that the delay in patient's treatment was alike for men and women infectives but the delay in the part of the services of health care provider's was extensively longer for women. The average delay in diagnosis was found about two weeks longer for women which signifies a failure in the part of the health care system in diagnosing women with sputum positive TB. Here, it is noteworthy that on the basis of sex attribute, the women exposed to TB are possibly at risk of not getting adequate diagnostic examinations.

Experiential data [3] shows that male TB infectives were supported and treated with respect by other family members, whereas women were sometimes threatened, embarrassed and subjected to divorce. The same was supported in [6] from their research in conducted in Pakistan where women were subjected to divorce because of TB disease. In [9] authors have observed in a report from India that women were worried about rejection by husbands, harassment by in-laws/family members and reduced possibilities of marriage, if they were single. The fear of stigma and lack of education often averts women from visiting national TB clinics and centres that cause delay in treatment and results in increasing the TB transmission. It is essential to build up transparency and reliance between health care workers, patients and families by the mean of methodological meetings with patients and their family members. The insensitivity and disrespect towards women by health centre staff has discouraged women from seeking care in some of the regions. There can also be gender differences in time to diagnosis and treatment within health care settings. The reasons for different gender patterns of health care utilization vary with location of individuals and nature of disease, but the most common reasons include gender differences in information, stigma and discrimination which make women more afraid of diagnosis and delay in accessing health services due to financial constraints.

### 4. Discussion

In the present work, the analysis is done to figure out the barriers in the coverage and implementation of effective TB prevention and control strategies. The gender perspective on current policies regarding disease prevention and treatment is very important. In the present TB prevention and control programmes, this aspect has not been effectively acknowledged. The emphasis should be given on successful diagnosis, treatment and cure of tuberculosis. The programme managers and health care workers need to identify gender sensitive recommendations to improve and implement the current TB control policies and programme. The need is to increase the awareness regarding the existing disparity of gender in spreading TB. There is a strong requirement to understand the existing differences in understanding the TB transmission among people from different generations, different sex, and with varying knowledge of the disease. The women are more sensitive to traditional beliefs in the family and the community than men and thus more likely to hide the disease due to the fear of discrimination by family members and due to the fear of loss of work and wages.

There are a number of factors like patriarchal society, limited access to available resources and policymaking which affect the disease transmission and prevention of the infectious diseases. The prerequisite is to make researches to be implemented, in a rigorous way, to understand these interactions with better understanding as because enough evidence is available to conclude that gender is crucial factor in the study of TB epidemic. Also on the same level, biological differences should be recognized and addressed through various disease prevention and control programmes. Further, the pregnant women and nourishing mothers should screened and to be given special consideration as because they represent a high-risk group for infection transmission to the next generation. Along with all the above mentioned perspectives the segregation of data by age and sex is also very important. The gender perspective is challenging area that can be proved valuable in TB control and prevention programmes. In conclusion, gender differentials in health care system and identification of TB infectives must be integrated into health education programmes/seminars and the regular health services should be made

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accessible in order to reduce delay in diagnosis and treatment, especially among the women and men who are not able to visit treatment and care centers on regular basis.

### Acknowledgments

The author, would like to express deep gratitude to her Ph.D. supervisors Dr. Mini Ghosh and Dr. S.S. Bhatia for their encouragement and useful suggestions.

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