GENDER DIFFERENCE IN TREATMENT SEEKING BEHAVIORS OF TUBERCULOSIS CASES IN RURAL COMMUNITIES OF BANGLADESH

Giasuddin Ahsan[1], Jalaluddin Ahmed[2], Pratap Singhasivanon[3], Jaranit Kaewkungwal[3], Kamolnetr Okanurak[3], Nawarat Suwannapong[4], Pasakorn Akarasewi[5], Mohammad A Majid[6], Vikarunessa Begum[7] and Kazi Belayetali[8]

[1]DGHS, Ministry of Health and FW, Dhaka, Bangladesh; [2]National TB control Program, Bangladesh; [3]Faculty of Tropical Medicine, Mahidol University, Bangkok; [4]Faculty of Public Health, Mahidol University, Bangkok; [5]TB Division, Ministry of Public Health, Bangkok, Thailand; [6]Prime Minister Office, Bangladesh; [7]NTP, Bangladesh, [8]USAID, Bangladesh

Abstract. This descriptive cross-sectional study was conducted to investigate gender differences in the epidemiological factors associated with the treatment seeking behaviors of TB cases in the rural communities of Bangladesh. The study reveals that there is significant gender difference in treatment seeking behaviors of rural TB cases and the majority of them (52%) have taken prior treatment from various traditional healers, 70% of them are females who attended health centers (UZHCs) as the other choice (adjusted OR:4.2, 95% CI:2.0-8.4). It was found that the mean patient delay was 63 days (range 14-210 days) where half of the females delayed more than 60 days while they were spreading their disease. The study findings reveal gender differences in treatment seeking behaviors associated with socio-cultural barriers, particularly among females in their access to TB care. Fifty-five percent of cases wanted the diagnosis of TB remain confidential to avoid being labeled as TB patients, where 82.7% were female, 85.6% of female TB patients had problems in their relationships with their spouse (61%) and family members (58%) after being diagnosed with TB. The results of the TB service factors found that 39% of females were not satisfied with their provider's behaviors, which was significantly associated with treatment seeking behavior (adjusted OR:2.6, 95% CI: 1.0-6.6). The study findings strongly suggest that there was a significant gender difference in treatment seeking behavior in rural Bangladesh. Based on the study findings, we recommend developing an appropriate gender strategy for developing a TB control program, comprised of operational, socio-cultural and community awareness interventions aimed at treating undiscovered reservoirs of female TB cases in rural Bangladesh.

INTRODUCTION

Tuberculosis continues to be a serious threat to public health worldwide. In developing countries, the burden of TB is explosive, where 95% of global TB patients live and 98% of global TB deaths occur (Lieffooghe, 1998). By killing over one million women globally, tuberculosis creates orphans, subjects families to tremendous hardship, puts families into poverty, and restricts the economic prosperity of families and the country as a whole (Dolin, 1998). Several studies suggest that women face more barriers to TB treatment than men do (Sumartojo, 1995).

Bangladesh ranked 5th among the top 22 high TB burden countries of the world, where 300,000 new tuberculosis cases occur every year, half of them are infectious, resulting in a high incidence (105/100,000 population) of infectious TB cases (WHO, 2001). Tuberculosis is associated with a stigma, together with poor facilities and unfriendly health care providers, this discourages female patients from seeking health care, leading to a huge reservoir of infectious TB cases in the rural community (Fair *et al*, 1992). The stigmatizing effects of TB, triggered by epidemiological factors such as socio-cultural, socio-demographic status, gender role, and level of educa-

Correspondence: Dr Giasuddin Ahsan, Faculty of Tropical Medicine, 420/6 Rajvithi Road, Mahidol University, Bangkok, Thailand.
Te: 66 (0) 2245 0276, 0 6828 5736; Fax: 66 (0) 2248 3189 or 246 8340
E-mail: guahsan@yahoo.com

tion seem to be expressed via the denial and concealment of the TB diagnosis and health care seeking, especially among women contributing to a gender difference in treatment seeking behaviors. The gender difference is regarded as not only due to the physiological difference in sex but also to a variety of care seeking patterns in rural TB cases within socio-demographic and cultural contexts, including service providers' perspectives (Thorson and Diwan, 1998). Among the detected TB cases, only 23% were adult women and 77% were men. Why are fewer women detected and treated for TB? Are they seeking treatment elsewhere? The policy makers, researchers and program managers may have limitations in providing correct answers to these questions due to paucity of valid information on the gender dimensions of TB control. This descriptive cross-sectional study was conducted to investigate gender differences in the epidemiological factors associated with treatment seeking behaviors of TB cases in eleven rural upzela health centers (UZHCs) and one community (Dattapara) in the Gazipur district of Bangladesh.

MATERIALS AND METHODS

Study population and sampling process

Eleven rural health centers (UZHCs) and one community (Dattapara) were selected from the Dhaka division of Bangladesh. From each health center (UZHC) not more than 14 male and 14 female new cases (age ≥15 years) were selected for equal representations by sex. Since the female case detection (TB) is very low in the study area (M: F=10:3), all eligible female cases were selected for the study but male cases were selected by a systematic sampling process. Sixteen male and 31 female sputum positive patients were found among 206 TB suspects in one community who were selected as the study sample. A newly detected TB case was regarded as a sputum smear positive TB-patient who had never been diagnosed or treated for tuberculosis or had taken antituberculosis drugs for less than four weeks.

Statistical analysis

Proportions for males and females were computed by using the chi-squire test with Yates corrections or the Fisher's exact test as appropriate. An adjusted Odds Ratio with 95% confident interval was computed by using multiple logistic regressions to assess statistically significant differences in treatment seeking behaviors (attended and continued treatment at a health center as the 1st choice or health center as the other choice) between males and females. Confounders were controlled by mathematical modeling and stratified analysis as appropriate. All statistical analysis was performed by SPSS for windows (version10.1) and Stata.

RESULTS

The socio-demographic characteristics (Table 1) indicate that 70% of sampled TB cases were within the age group of 15-44 years. Among females, 87% and among males, 51% were within the age group of 15-44 years. The mean age of the study population was 36 years, having a range of 15-90 years. Among the study samples (307), 52.77% were female (162) and 47.23% male (145). Most of the study samples were illiterate (61.2%), married (73%), and Muslim (92.2%) by religion.

The association between treatment seeking behaviors and demographic factors (Table 5) indicates the significant gender difference in treatment seeking behaviors after adjustment for age, educational, marital, occupation, and religion status. Females chose treatment more from health centers (71%) than males (adjusted OR:4.2, 95% CI:2.0-8.4). A significant association was also found between treatment seeking behaviors and the educational status of the study population after adjustment for age, sex, marital, occupation, and religion status (adjusted OR:1.7, 95% CI:1.0-2.9). There is a significant association between treatment seeking behaviors and the occupation of the sampled TB cases after adjustment for age, sex, educational, marital, and religious status (adjusted OR:0. 47, 95% CI:0. 24-0.90).

Regarding treatment seeking behaviors (Table 2), more than half of the respondents (52.4%) had taken prior treatment from various traditional practitioners before presenting to the health centers (UZHCs), where 70% of the females had prior treatment. The mean delay for seeking treatment from various traditional healers was 63 days (range 14-210 days). Among the females, 50% of cases were delayed by more than 60 days while they were infectious and spreading the disease in the community.

Concerning treatment seeking patterns, 40% of respondents had used self-medication, 65% had visited traditional practitioners, 28% had received

Table 1
Distribution of socio-demographic characteristics of sampled tuberculosis (TB) cases indicating gender difference.

Demographic characteristics	Female (n=162)		Male (n=145)		Total (N=307)		p-value[b]
	n	%[a]	n	%[a]	n	%[a]	
Age (Years)							
15-24	60	37.0	22	15.2	82	26.7	0.000
25-34	51	31.5	26	17.9	77	25.1	
35-44 4	30	18.5	26	17.9	56	18.2	
5-54	12	7.4	31	21.4	43	14.0	
55 +	9	5.6	40	27.6	49	16.0	
Educational status							
Illiterate	108	66.7	80	55.2	188	61.2	0.074
Primary	33	20.4	30	20.7	63	20.5	
Secondary	12	7.4	21	14.5	33	10.7	
College and above	9	5.6	14	9.7	23	7.5	
Marital status							
Unmarried	37	22.8	24	16.6	61	19.9	0.004
Married	107	66.0	117	80.7	224	73.0	
Separated	18	11.1	4	2.4	22	7.2	
Occupation							
Unemployed	42	25.9	20	13.1	62	19.9	0.000
Housewife	84	51.9	0	0.0	84	27.7	
Farmer	6	3.7	70	49.0	76	24.8	
Laborer	11	6.8	28	19.3	39	12.7	
Others	19	11.7	27	18.6	48	15.0	
Religion							
Muslim	149	92.0	134	92.4	283	92.2	0.886
Hindu	13	8.0	11	7.6	24	7.8	
Family members							
1-3 members	30	18.5	27	18.6	57	18.6	0.770
4-6 members	86	53.1	79	54.5	165	53.7	
7-9 members	32	19.8	27	18.6	59	19.2	
≥10 members	14	8.4	12	8.3	26	8.5	
Income/Month[c]							
<Tk 1,000	52	35.6	44	31.4	96	33.6	0.004
Tk 1,001-2,500	52	35.6	49	35.0	101	35.6	
Tk 2,501-3,500	24	16.4	17	12.1	41	14.3	
≥Tk 3,500	18	12.3	30	21.4	48	16.8	

a: Column percentage to indicate the distribution of over all characteristics
b: Comparing the difference between female and male; c: 1 US$ = Tk 59

treatment from village doctors and 27% had taken treatment from others (kabiraji, bonaji, spiritual things etc). Among the females, 71% had sought treatment from traditional practitioners, 34% had visited traditional healers (kabiraji, bonaji, spiritual things etc), 32% had used self-medication and the rest (31%) had visited village doctors. Among men, the majority (60%) had used self-medication. The reasons for using traditional healers included: the kept the diagnosis secret (55%), the were nearer (36%), cheaper (33%), and were friendlier (35%). Females used traditional healers because they kept the diagnosis confidential (71%) but males chose them because they were cheaper (51%) and nearer (43%).

The results of the socio-cultural factors indicate (Table 3) that female TB cases had to confront more socio-cultural barriers than males in

Table 2
Distribution of treatment seeking patterns among male and female TB cases before attending a the health center.

Treatment seeking characteristics	Female (n=162)		Male (n=145)		Total (N=307)		p-value[b]
	n	%[a]	n	%[a]	n	%[a]	
Prior treatment seeking from traditional healers							
No	48	29.6	98	67.6	146	47.6	0.000
Yes	114	70.4	47	32.4	161	52.4	
Delay for prior treatment							
14-30 days	21	18.4	12	25.5	33	20.5	0.001
31-60 days	36	31.6	21	44.7	58	35.4	
> 60 days	57	50.0	14	29.8	71	44.1	
Treatment seeking patterns:	n=114		n=47		n=161		
Self-medication	36	31.6	28	59.6	64	39.8	
Trad. practitioners	81	71.1	24	51.1	105	65.2	
Village doctors	35	30.7	10	21.3	45	28.0	
Other:kabira/bonaji/	39	34.2	4	8.5	43	26.7	
Reasons for visiting traditional practitioner *	n=114		n=47		n=161		
Cheap	30	26.3	24	51.1	54	33.5	
Nearer	38	33.3	20	42.6	59	36.0	
Kept secret	81	71.1	8	17.0	89	55.3	
Friendly behavior	42	36.8	14	29.8	56	34.8	

a: Column percentage to indicate the distribution of over all characteristics
b: Comparing the difference between female and male

accessing TB care. Fifty-five percent of cases wanted the diagnose of TB to be kept confidential to avoid being labeled as TB patients. Among those who needed someone to accompany them to the health center (49.5%), most (90%) were female. Fifty-three percent of respondents wanted a choice in the gender of the caregiver and most of them (85.8%) were the female respondents. Fifty-one percent of TB cases needed to seek permission from a family head to get treatment, most of them (85.8%) were female. Reasons for seeking permission were given as are social norms (49%) and religious reasons (51%).

Sixty-one percent of respondents had problems in their relationships with their spouses after being diagnosed with TB, 72% of them were females. Results clearly indicate that rural TB patients had problems with family members (58%). Reasons for problems with spouses and family members included fear of getting TB and inability to work for the family (23%). Seventy-five percent of cases had financial problems in paying for travel costs. Forty-seven percent of cases stated there was a problem in finding a marriage partner for cured TB patients. Reasons for the problems in finding a marriage partner for cured TB patients were: the community disliked TB patients (46%) and were afraid of transmission to the next generation (54%).

Regarding the socio-cultural factors (Table 6), there were significant differences in treatment seeking behavior. It was also found that there was a significant association with accompanying support and treatment seeking behavior (adjusted OR:3.5, 95% CI:1.1-11.1) after adjustment for other factors in the model. There was also a significant association between treatment seeking behavior and financial problems for travel costs (adjusted OR:2.0, 95 % CI:1.1-4.8).

Among females, 86% wanted to be examined by their choice of gender, but there was no significant association with treatment seeking behavior after adjustment for all the other factors in the model as mentioned above. There was no

Table 3
Distribution of various socio-cultural factors (socio-cultural barriers) among male and female TB cases in access to TB care indicating their association.

Socio-cultural factors (barriers to TB care)	Female (n=162)		Male (n=145)		Total (N=307)		p-value[b]
	n	%[a]	n	%[a]	n	%[a]	
Want to diagnose secretly							
Yes	134	82.7	34	23.4	168	54.7	0.000
No	28	17.3	111	76.6	139	45.3	
Preferred to be treated by same sex							
Yes	139	85.8	25	17.2	164	53.4	0.000
No	23	14.2	120	82.8	143	46.6	
Financial problem for travel cost							
Yes	135	83.3	96	66.2	231	75.2	0.000
No	27	16.7	49	33.8	76	24.8	
Need accompaniment to attend health center							
Yes	146	90.1	6	4.1	152	49.5	0.000
No	16	9.9	139	95.9	155	50.5	
Need prior permission for seeking treatment							
No	23	14.2	128	88.3	151	49.2	0.000
Yes	139	85.8	17	11.7	156	50.8	
Reasons prior permission							
Social norms	61	43.9	16	94.1	77	49.4	0.000
Religious norms	78	56.1	1	5.9	79	50.6	
Hesitation of other family members in mixing							
Yes	138	85.2	83	57.2	221	72.0	0.000
No	24	14.8	62	42.8	86	28.0	
Prevent common articles of daily use							
Yes	118	72.8	66	45.5	184	59.9	0.000
No	44	27.2	79	55.5	123	40.1	
Problem in relationships with spouse							
No	34	27.6	63	50.8	97	39.4	0.000
Yes	88	72.1	61	49.2	149	60.6	
Reasons for problem in relationship with spouse							
Afraid of getting TB	63	72.4	52	86.9	115	77.2	0.035
Inability to work	25	27.6	9	13.1	34	22.8	

a: Column percentage to indicate the distribution of over all characteristics
b: Comparing the difference between female and male

significant association between problems in relationships with spouses and treatment-seeking behavior after adjustment for the other factors in the model.

The results of the health services factors related to treatment seeking behavior of TB cases reveal (Tables 4 and 5) that 74% of study subjects were comfortable with the working hours, of them 78.6% were male. Sixty-eight percent of the respondents were satisfied with provider's behaviors, and of them 75.2% were male. Seventy percent of TB cases had received regular health counseling on the importance of TB treatment and 70% of the study subjects were satisfied with existing TB services.

The study found a significant association between treatment seeking behavior and TB services factors (Table 5), particularly satisfaction with the providers' behaviors (adjusted OR:2.6, 95% CI:1.0-6.6); and supervision of the intake of drugs (adjusted OR:1.7, 95% CI: 1.0-2.8) after adjustment for the other variables in the model (comfortability with working hours, health counseling, satisfaction with TB services and or satis-

Table 4
Distribution of various socio-cultural factors (barriers) and TB services factors among male and female TB cases in access to TB care indicating their association.

Factors	Female (n=162)		Male (n=145)		Total (N=307)		p-value[b]
	n	%[a]	n	%[a]	n	%[a]	
Socio-cultural factors (barriers to TB care)							
Problem in relationship with other family members							
Yes	125	77.2	53	36.6	178	58.0	0.000
No	37	22.8	92	63.3	129	42.0	
Problem in finding marriage partner							
No	74	45.7	93	64.1	167	54.4	0.001
Yes	88	54.3	52	35.9	140	45.6	
Reasons for problem in finding marriage partner							
Disliked by people	35	39.8	29	55.8	64	45.7	0.066
Transmission to the next generation	53	60.2	23	44.2	76	54.3	
Health services factors							
Comfortable with working hours							
Yes	113	69.8	114	78.6	227	73.9	0.077
No	49	30.2	31	21.4	80	26.1	
Satisfaction with providers' behavior							
Yes	99	61.1	109	75.2	208	67.8	0.009
No	63	38.9	36	24.2	99	32.2	
Health counseling on importance of treatment							
Yes	106	65.4	110	75.9	216	70.4	0.046
No	56	34.6	35	24.1	91	29.6	
Supervision of drug intake							
Yes	96	59.3	75	51.7	171	55.7	0.185
No	66	40.7	70	48.3	136	44.3	
Satisfaction with TB service							
Yes	106	65.4	110	75.9	216	70.4	0.046
No	56	34.6	35	24.1	91	29.6	

a: Column percentage to indicate the distribution of over all characteristics
b: Comparing the difference between female and male

faction with providers behavior/supervision of the intake of drugs).

DISCUSSION

In Bangladesh, tuberculosis is a serious public health problem where more than 300,000 new tuberculosis patients occur every year, half of them are infectious and are therefore spreading the disease in their communities. TB is associated with taboos, fear and stigma, together with poor facilities and unfriendly health care providers who discourage patients, particularly women, from accessing health care, resulting in only 30% of the total treated cases being adult women (Columbani *et al*, 1999). The findings of this study have sounded an alarm bell regarding gender differences in treatment seeking behaviors associated with various epidemiological factors, particularly socio-cultural barriers among female cases in access to TB care in the rural communities of Bangladesh.

Demographic factors

The results of this study reveal that 70% (Table 1) of the sampled cases were within the age groups of 15-44 years and 87% were among women of childbearing age. The age distribution suggests that TB affects mostly younger age groups, particularly women in the rural commu-

Table 5
Association between treatment seeking behavior and demographic / health services factors.

Factors	Treatment seeking behavior				Crude OR (95% CI)	Adj OR (95% CI)
	1st choice (n=146)		Other choice (n=161)			
	n	%	n	%		
Demographic characteristics						
Age (Years)						
15-44 (Repro age)	95	65.1	120	74.5	1.25 (0.97-1.62)	
≥45 (Non repro age)	51	34.9	41	25.5	(Ref)	
Sex						
Female	48	32.9	114	70.8	4.9 (3.0-8.0)	4.2 (2.0-8.4)
Male	98	67.1	47	29.2	(Ref)	(Ref)
Educational status						
Illiterate group	76	52.1	112	69.6	2.1 (1.3. -3.3)	1.7 (1.0-2.9)
Literate group	70	47.9	49	30.4	(Ref)	(Ref)
Marital status						
Unmarried	36	24.7	25	15.5	0.56 (0.32-0.99)	0.47 (0.24-0.90)
Married/separated	110	75.3	136	84.5	(Ref)	(Ref)
Occupation						
Unemployed (No work)	46	31.5	99	61.5	2.4 (2.1-5.5)	
Employed (Has worked)	100	68.5	62	38.5	(Ref)	
Religion						
Muslim	130	89.0	153	95.0	2.3 (0.98-5.68)	
Hindu	16	11.0	8	5.0	(Ref)	
Factors related to health services						
Comfortable with working hours						
Yes	119	81.5	108	67.1	0.46 (0.27-0.78)	
No	27	18.5	53	32.9	(Ref)	
Satisfaction with providers' behavior						
Yes	115	78.8	93	57.8	2.7 (1.6-4.4)	2.5 (1.0-6.6)
No	31	21.2	68	42.2	(Ref)	(Ref)
Health counseling on importance of treatment						
Yes	115	78.8	101	62.7	2.20 (1.3-3.66)	
No	31	21.2	60	37.3	(Ref)	
Supervision of drug intake						
Yes	93	63.7	78	48.4	1.86 (1.18-2.95)	1.7 (1.0-2.8)
No	53	36.3	83	51.6	(Ref)	(Ref)
Satisfaction with TB service						
Yes	112	76.7	104	64.6	1.80 (1.1-2.99)	
No	34	23.3	57	35.4	(Ref)	

Note: The table indicates the crude odds ratio (COR) and adjusted odds ratio (Adj OR) with 95% confidence interval after adjustment for age, sex, educational, marital, occupational, and religious status. It also shows the adjusted odds ratio (Adj OR) among the factors related to health services after adjustment for comfortability, satisfaction with providers' behavior, health counseling, supervision of drugs and satisfaction with TB services.

nities of Bangladesh. This may be due to an increased tendency for health care seeking among younger patients because of the recent community awareness activities of the TB control program. Females within the age group of 15-44 years in the rural communities are mostly illiterate, live in poor housing conditions, and have restricted movements due to socio-cultural norms which may put them at higher risk for getting TB from the untreated reservoir of cases. Similar find-

Table 6
Association between treatment seeking behavior and socio-cultural characteristics (cultural barriers) of TB cases in access to TB care.

Socio-cultural characteristics	Treatment seeking behavior				Crude OR (95% CI)	Adj OR (95% CI)
	1st choice (n=146)		Other choice (n=161)			
	n	%	n	%		
Preferred to be treated by same sex						
Yes	53	36.3	111	68.9	3.8 (3.4-6.2)	
No	93	63.7	50	31.1	(Ref)	
Want to diagnose secretly						
Yes	48	32.9	120	74.5	5.8 (3.6-9.8)	7.1 (3.0-17.1)
No	98	67.1	41	25.5	(Ref)	(Ref)
Need permission to seek treatment						
Yes	51	34.9	105	65.2	3.4 (2.1-5.5)	
No	95	65.1	56	34.8	(Ref)	
Need accompaniment to attend health center						
Yes	42	28.8	110	68.3	4.3 (3.2-8.7)	3.5 (1.1-11.1)
No	104	71.2	51	31.7	(Ref)	(Ref)
Financial problem with travel cost						
Yes	96	65.8	135	83.9	2.6 (1.5-4.6)	2.0 (1.1-4.8)
No	50	34.2	26	16.1	(Ref)	(Ref)
People around you wanted to talk as before						
Yes	65	44.5	76	47.2	1.1 (0.71-1.74)	0.47 (0.24-0.92)
No	81	55.5	85	52.8	(Ref)	(Ref)
Problems in relationship with spouse						
Yes	58	50.4	91	69.5	2.2 (1.3-3.7)	
No	57	49.6	40	30.5	(Ref)	
Prevent common articles of daily use						
Yes	81	55.5	103	64.0	1.4 (0.90-2.2)	
No	65	44.5	58	36.0	(Ref)	

Note: The table indicates the crude odds ratio (COR) and adjusted odds ratio (Adj OR) with a 95% confident interval after adjustment for want to diagnose secretly, preferred to be treated by same sex, need permission, need accompaniment, financial problems, peoples around you wanted to talk as before, and prevent common articles of daily use.

ings found in several other studies in India, Puerto Rico, Alaska, Canada, and Norway have shown that women of reproductive age are at higher risk than men of the same age regarding the progression of infection to clinical disease (TB). The progression rate in women was 130% higher than men among those aged 15-44 years (Dolin,1998).

There is significant gender difference (Table 2) in treatment seeking behavior of TB cases (adjusted OR:4.2,95 % CI:2.0-8.4); 70% of female and 32% of male cases attended health centers (UZHCs) as their other choice and had taken treatment from various traditional healers before attending the health centers (UZHCs).

Studies reveal that social beliefs are more severe for women and have an impact on female treatment seeking behavior. (Fair *et al*, 1997). Similar findings from a study in South Africa showed that 40% of TB patients had attended healers at some time prior to diagnosis in Malawi. More women (35%) visited traditional healers before diagnosis than men; fewer females submitted sputum samples, and had been diagnosed with smear positive TB, compared with males in health centers (Boeree *et al*, 2000). A study in the Philippines found that only 29% of TB patients first visited a health center after the onset of TB related symptoms, and more than half (53%) had

initially consulted a traditional practitioners (Auer *et al*, 2000). A striking finding was the greater use of alternative medicines and avoidance of public health services by women, due to long waiting times, poor quality of care, inadequate staff, lack of female providers and the unfriendly attitude of health practitioners (Rangan and Uplekar, 1998).

This study reveals a significant gender difference in delay (Table 2) due to seeking care from various traditional healers ($p<0.01$). Fifty percent of female TB cases were delayed by more than 60 days, but 39% of men were delayed by 31-60 days. There are several studies worldwide regarding delay in TB treatment. In Nepal, women were found to have a significantly longer delay before the diagnosis of tuberculosis (median 2.3 months for men, 3.3 months for women). Delay before seeking hospital treatment was longer for women (41 days) than men (19 days) and more men (27.36%) than women (14.14%) submitted sputum samples at a hospital (Thorson *et al*, 2000).

Socio-cultural factors (cultural barriers)

The study results (Tables 3 and 6) reveal that female TB cases have to face more socio-cultural barriers than males in access to TB care. Other studies indicate that when females developed chest symptoms, they did not seek help for it since they were worried about being labeled as TB patients (Uplekar and Rangan, 1999).

The females in the rural communities do not feel free to seek care from male health care providers due to socio-religious reasons. Females also needed to ask permission prior to seeking health care because of social and religious reasons. Others studies found that the social problems associated with TB were more severe for women (Uplekar and Rangan, 1996). Studies in Pakistan revealed that women have limited health access to TB care due to legal constraints, social values for women and norms and customs of society (Liefooghe *et al*, 1996).

Women needed accompanying support to seek health care due to socio-cultural and religious norms prevailing in rural communities. Reasons are explained in other studies. Pakistan found that practice of purdah restricts women's contact with men and with strangers. They are not allowed to travel without an escort (male) and are reluctant to consult a male doctor (Hudelson, 1996).

The reasons for problems with spouse and family members were a fear of getting TB and an inability to work for family (23%). They were afraid of separation from spouses and family members or the community. Other studies found that married women were afraid of rejection by their husbands and would be sent back to their father's home, while unmarried women feared that contracting TB would ruin their chances of marriage and bring shame to their family (Fair *et al*, 1997).

TB services factors

Sixty-eight percent of TB patients were satisfied with their provider's behaviors while 39% of females were not satisfied with their provider's behaviors which was significantly associated with treatment seeking behavior (adjusted OR:2.6, 95% CI: 1.0-6.6). Possible reasons for dissatisfaction were an avoiding tendency (56%), poor health counseling (25%) and unfriendly behaviors (19%). The study found no significant association between treatment seeking behavior and health counseling on the importance of TB medication (adjusted OR:1.0, 95% CI:0. 48-2.77) and satisfaction with TB service (adjusted OR: 1.6, 95% CI:0. 72-0.3.71). Other studies found that several other factors like long waiting times, poor quality of care, inadequate staff, lack of female providers and unfriendly attitude of health functionaries have all been reported as limiting access to public health facilities, especially for women (Rangan and Uplekar, 1998).

In conclusion, these study findings strongly suggest that there is significant gender difference in treatment seeking behavior associated with epidemiological factors prevalent in rural communities of Bangladesh.

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