GENDER RELATED BARRIERS TO TUBERCULOSIS IN GEORGIA

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Georgia has accomplished significant progress regarding the control of tuberculosis (TB) epidemics in the last decade [7]. During the last five years the total number of reported TB cases has decreased by 33% and the number of new cases has decreased by 35%. Nevertheless, TB burden in Georgia, including drug resistant TB, still remains high [7].

According to the WHO estimation, total number of TB new cases and relapses per 100,000 population has decreased from 99 (2015 y.) to 86 in 2017; However, this rate is three times higher compared to the European average - 30 (26-34) per 100,000 population [3]. MDR-RR tuberculosis incidence in Georgia (19 in 2017) exceeds the European average - (12 - (9.4-15)) in the same year by almost 50% [3]. Young people and economically most productive individuals are the ones significantly affected by tuberculosis in Georgia. Two thirds of new and relapse cases are at the age of 15-44.

The purpose of the study was to identify potential gender-based barriers and contributing factors that might influence the timely diagnosis and treatment of TB.

Material and methods. The target groups for this quantitative study were patients on anti-TB treatment and former TB patients (who have completed or discontinued the treatment). The study subjects were selected by simple random sampling method by keeping the gender ratio (male: female – 1: 1). National Center for Tuberculosis and Lung Disease patients' registry have been used for the sampling frame for the selection of patients on treatment and former TB patients, who completed or dropped the treatment. Data were collected by individual, face-to-face interviews, using a questionnaire designed specifically for this study. The questionnaire included the questions about social and demographic characteristics, TB-related stigma and discrimination, barriers to the diagnosis and treatment of TB and impact of TB. Data entry, processing and statistical analysis were performed using SPSS v.23.0 statistical package. Descriptive statistical methods were used to describe different characteristics of target populations. Bivariate analysis was performed using t-test for quantitative data and chi-square test for qualitative variables.

Ethical consideration. Participation in the study was voluntary. Applicants who expressed readiness to participate, signed consent form, after which they were included in the study.

Prior to the study, the research protocol and instruments were reviewed and approved by the Ethical Committee of the Health Research Union (IRB00009520; IORG0005619).

Results and discussion. *Social and demographic charasteristics of patients with tuberculosis.* A total of 230 patients on current anti-tuberculosis treatment or former patients who have been treated for tuberculosis participated in the study. Half of them were male - 115, (50%) and half - female 115, (50%). By age distribution, the majority of respondents were 20-30 years old (out of which females were 48.7% and males - 33.9%). The majority (47.8%) of female respondents have never been married, while only 13.9 % of males were single. Most of the male and female respondents had completed high-school education. Approximately one-third of both male and female respondents were residents of Tbilisi. Most of the surveyed male and female subjects reported that their monthly family income ranged between 500 to 1,000 GEL.

Tuberculosis Awareness and Knowledge by Gender in Patients with Tuberculosis. Most female and male patients have heard of TB before. The primary source of information in approximately half of the respondents in both target groups was the diagnosis of TB (48.7% for female and 53.0% for male), Table 1.

The equal majority of female and male respondents knew the fact that TB is a contagious disease. The higher proportion of female respondents (38.3%) could name all the main symptoms of pulmonary (lung) tuberculosis compared to male respondents (23.5%) (p=0.01). Equally high proportion (> 90%) of female and male patients were aware that TB is curable disease (93.9% vs 91.3%).

The higher proportion (61.7%) of female respondents compared to male respondents (51.3%) reported that if they had known about free TB diagnosis and treatment option, they would see doctor earlier (p=0.1)

Tuberculosis-related stigma and discrimination by gender in patients with TB. For most female and male patients, tuberculosis is associated with poverty, tobacco use, and - poor hygiene (Table 2).

Discrimination, shame and fear that no one would marry them was reported as the reason of concealing their diagnosis by higher proportion of female compared to male respondents (p<0.001) (Table 2)

More female (14.8%) compared to male (8.7%) respondents reported that after their TB diagnosis, other people's attitude towards them was negatively changed (p=0.1). The equal proportion of male and female respondents prefer to be isolated during the disease (Table 2).

Impact of Tuberculosis and Attitude toward TB Patients by Gender. The higher proportion of male patients (36.5%) compared to females (25.2%) reported that they could not find or lost their jobs due to TB (p=0.06).

The attitude of the medical staff was defined as positive by a slightly higher proportion of female respondents (95.7%) than male study subjects (89.6%) (p=0.07). Satisfaction with services of the clinics providing the treatment was also higher in females than in male TB patients (95.7% and 88.7%, respectively) (p=0.05). Trust in keeping confidentiality by the clinic was also expressed by higher proportion of female (65.2%) than male respondents (58.3%) (p=0.2)

*Barriers to the diagnosis and treatment of tuberculosis by gender in patients with tuberculosi***.** Almost equal proportion of female and male patients visited physician after detecting of the TB symptoms.

Higher proportion of women (57.4%) compared to men (35.7%) informed family members when they were first referred to a physician for TB symptoms (p<0.001). Patients of both genders were provided with sufficient explanations and clarifications by the physician regarding the anti-TB treatment regimen, medication side effects, and the interpretation of test results.

Table 1. Knowledge about TB among TB patients currently on treatment and post TB patients by gender

Characteristic	Female		Male		*p* value
	n	%	n	%	
Have you heard of TB prior to diagnosis					
Yes	89	77.4	92	80.0	0.629
No	26	22.6	23	20.0	
How have you first learnt about TB					
TB diagnosis	56	48.7	61	53.0	
TB diagnosis of family/acquaintances	33	28.7	38	33.0	
Talking with family/acquaintances	3	2.6	3	2.6	
Medical literature	3	2.6	0	0.0	
Television	3	2.6	1	0.9	
Internet	8	7.0	3	2.6	
Printed informational materials	2	1.7	0	0.0	
Healthcare worker	6	5.2	3	2.6	
Don't know/Don't remember	1	0.9	6	5.2	
Is TB contagious?					
Yes	107	93.0	106	92.2	0.801
No/Don`t know	8	7.0	9	7.8	
TB transmission					
Respiratory way	102	95.3	99	93.4	0.541
Other/Don`t know	5	4.7	7	6.6	
Symptoms of pulmonary TB					
Correctly identified all TB symptoms	44	38.3	27	23.5	0.015
Could not identify all TB symptoms	71	61.7	88	76.5	
Is TB curable?					
Yes	108	93.9	105	91.3	0.450
No/Don`t know	7	6.1	10	8.7	
Did you know prior to diagnosis that TB diagnostic and treatment are free in Georgia?					
Yes	98	85.2	97	84.3	0.854
No	14	14.8	18	15.7	
If you knew that TB diagnosis and treatment were free, would you be more likely to visit the doctor?					
Yes	71	61.7	59	51.3	0.110
No	44	38.3	56	48.7	

On the question about how TB changed their lives, the majority of female patients with TB answered that they could not do the housework as before, and the majority of male respondents stated that the family faced financial problems.

A higher proportion (27%) of male patients compared to females (14.8%) reported that their TB diagnosis was delayed (p=0.1). After the diagnosis of TB, the majority (>95%) of both target groups started their treatment in less than 2 weeks.

Both male and female patients had some discomfort associated with side effects of the TB treatment and the duration of treatment. Physician-prescribed treatment interruption / discontinuation was significantly higher in male patients (26.1%) compared to females (7.8%) (p<0.001).

16.5% of female patients and 28.3% of male respondents would make some changes in the TB diagnosis and treatment program. The most frequently suggested change was to increase the home supply of medicines from 1 week to 1 month to decrease the frequency of clinic visits.

The TB knowledge, attitude and practice (KAP) studies have been carried out in Georgia in several rounds [4]. Gender-disaggregated data showed no statistically significant difference among active TB and former TB patients in TB Knowledge, attitude and practice. Similarly, our research found no significant differences in TB awareness between male and female TB patients. There are other studies from low-and middle-income countries reporting higher TB awareness among women compared men [8].

Similar to many other WHO countries, the men to women ratio of TB cases in Georgia is more than 2 [1]; however, it is less likely that the higher prevalence of the disease among men is

a result of increased barrier or stigma associated with gender. Findings of our study show that the stigma associated with TB is higher in women than in men. Female patients are more likely to hide their diagnosis from family members than male patients. As a reason of concealing a TB diagnosis from the family, women mainly reported fear being abandoned by their spouse or partner.

In general, TB related stigma is very high in the society [2]. Many patients choose not to disclose their diagnosis to the families and friends, creating the barriers for contact tracing [5]. The study showed that hiding their disease from other people was reported by a higher proportion of females than male patients. Among the reasons of hiding their TB status the fear of discrimination, shame, and the concern that no one would marry them were higher among women compared to men.

According to study findings a higher proportion of women than men were accompanied by a family member when they first

Table 2. *Tuberculosis-related stigma and discrimination among tb patients by gender*

Characteristic	Female		Male		*p* value
	n	%	n	%	
TB is associated with:					
Poverty	36	31.3	53	46.1	
Poor hygiene	27	23.5	23	20.0	
Unprotected sex	4	3.5	9	7.8	
Drug abuse	13	11.3	17	14.8	
Alcohol	22	19.1	27	23.5	
Smoking	31	27.0	35	30.4	
Genetics	16	13.9	10	8.7	
TB is not associated any of above; any person can be infected	73	63.5	62	53.9	
Hide his/her diagnosis from family members					
Yes	4	3.5	1	0.9	0.175
No	111	96.5	114	99.1	
Hide his/her diagnosis from other people					
Yes	68	59.1	25	21.7	<0.001
No	47	40.9	90	78.3	
Why are you hiding your diagnosis (TB) from other people?					
Fear of discrimination	35	51.5	16	30.9	<0.001
Shame	9	36.0	2	8.0	
No one will marry me	21	30.9	5	20.0	
Disease negatively affected his/her relationshipwith other people					
Yes	17	14.8	10	8.7	0.152
No	98	85.2	105	91.3	
Felt ashamed for having TB					
Yes	23	20.0	11	9.6	0.026
No	92	80.0	104	90.4	
Fear of rejection due to your diagnosis (TB)					
Yes	82	71.3	40	34.8	<0.001
No	33	28.7	75	65.2	
Fear of rejection from family due to your diagnosis (TB)					
Yes	22	19.1	10	8.7	0.022
No	93	80.9	105	91.3	
Preferred to live isolated					
Yes	86	74.8	87	75.7	0.879
No	29	25.2	28	24.3	
Fear of breaking upwith spouse /partner or can not marry due to the diagnosis(TB)					
Yes	47	40.9	31	27.0	0.026
No	68	59.1	84	73.0	

visited the physician because of TB. At the same time higher proportion of women than men notify the family members when they have first visit doctor because of their TB symptoms.

The presented study identified that TB changed the patients' lives. The majority of female respondents reported that they could not do their housework as before, and the majority of male study subjects stated that the family faced financial problems. This is similar to the findings from other countries where male patients often worried about economic problems, while female patients worried about social consequences of the disease [6]. According to our study findings the more male patients compared to female patients reported that they could not find or lost their jobs due to TB; with the main reason being the length of anti-TB treatment.

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SUMMARY

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The morbidity and mortality burden of tuberculosis (TB) remains high in Georgia, including drug-resistant TB. A survey was conducted to identify potential gender-based barriers and contributing factors that might influence the timely diagnosis and treatment of TB among active and former TB patients.

To assess TB-related stigma and discrimination, a quantitative study was conducted to identify gender-based barriers to the diagnosis and treatment of TB among current and former patients. The study subjects were selected by a simple random sampling method with a 1:1 gender ratio. Participation in the study was voluntary. Data were collected by individual, face-to-face interviews. The patients' registry of the National Center for Tuberculosis and Lung Disease was used as the sampling frame to select patients either currently on anti-tuberculous treatment as well as former TB patients, who completed or discontinued treatment.

A total of 230 patients on current anti-tuberculosis treatment or former patients who have been treated for tuberculosis participated in the study. Half of the participants (115, 50%) were male. No significant gender difference was detected with respect to awareness and knowledge about tuberculosis. Stigma associated with TB was found to be higher among women than men. Compared to men, more female respondents than males reported a negative change in attitude from other people after their TB diagnosis (14.8% vs 8.7%, respectively). A higher proportion of women than men notified a family member upon deciding to visit a doctor due to TB symptoms and, similarly, more women were accompanied by a family member for the first physician visit related to tuberculosis.

In Georgia, as in other countries around the world, men are more likely to be infected with TB than women. However, the stigma related to TB introduces barriers to service utilization. Barrier reduction programs should consider more comprehensive gender assessment and in-depth analysis of the epidemiological situation by economic status, living conditions, regions, employment status, and ethnicities. Effective interventions may reduce barriers and contribute to the timely diagnosis and treatment of TB.

Keywords: tuberculosis, gender, barriers.

РЕЗЮМЕ

СЛОЖНОСТИ, СВЯЗАННЫЕ С ПОЛОВОЙ ПРИНАДЛЕЖНОСТЬЮ ПАЦИЕНТОВ, В ДИАГНОСТИКЕ И ЛЕЧЕНИИ ТУБЕРКУЛЕЗА В ГРУЗИИ

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Показатели заболеваемости и смертности от туберкулеза, в том числе и от его форм с лекарственной устойчивостью, по сей день весьма высокие в Грузии. Проведено исследование с целью выявления возможных сложностей, связанных с половой принадлежностью пациентов, и сопутствующих факторов, которые влияют на своевременную диагностику и лечение туберкулеза как у пациентов с активной формой болезни, так и у пациентов, перенесших эту болезнь.

Целью исследования явилось определение дискриминации по половому признаку при диагностике и лечении туберкулеза как у пациентов с активной формой болезни, так

и перенесших туберкулез. Объекты исследования выбраны методом случайной выборки по принципу равного количества представителей обоих полов. Участие в исследовании было добровольным. Исследование проводилось в форме индивидуального собеседования. Добровольцы на основе метода случайной выборки были отобраны из списков Национального центра туберкулеза и заболеваний легких с целью охвата как пациентов, проходивших лечение на момент исследования, так и уже прошедших или прервавших лечение. В результате исследования опрошено 230 пациентов, проходивших лечение на момент исследования или уже прошедших его. Половина из добровольцев являлись представительницами слабого пола. В ходе исследования среди пациентов разной половой принадлежности различия в знаниях о туберкулезе не выявлены не выявлены. Количество пациентов, стигматизирующихся ввиду своей болезни, среди женщин было больше, чем среди мужчин. Количество женщин, сообщивших о негативных изменениях по отношению к ним среди окружающих их людей после диагностики туберкулеза, также было выше, чем среди мужчин (14,8% и 8,7%, соответственно). Среди пациентов, сообщивших членам семьи о решении посетить врача из-за появившихся симптомов туберкулеза, было больше женщин, чем мужчин, также было больше женщин, чем мужчин, среди пациентов, которых сопровождали члены семьи во время первого визита к врачу. Программы, направленные на уменьшение сложностей, связанных с половой принадлежностью, среди пациентов, должны содержать комплексную оценку по половому признаку, а также глубокий анализ эпидемиологической ситуации, основанный на уровне развития экономики и жизни, особенностях определенных регионов, уровне занятости и этнической принадлежности.

რეზიუმე

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[1]ჯანმრთელობის კვლევის კავშირი; [2]ტუბერკულოზისა და ფილტვის დაავადებათა ეროვნული ცენტრი; [3]დაავადებათა კონტროლისა და საზოგადოებრივი ჯანმრთელობის ეროვნული ცენტი, თბილისი, საქართველო

ტუბერკულოზით ავადობა და სიკვდილობა, მათ შორის მულტირეზისტენტული ტუბერკულოზის შემთხვევებიც, საკმაოდ მაღალია საქართველოში.

კვლევის მიზანს წარმოადგენს გენდერული ბარიერების და ფაქტორების გამოვლენა, რომლებიც გავლენას ახდენს ანტი-ტუბერკულოზურ მკურნალობაზე მყოფი და ყოფილი პაციენტების დროულ დიაგნოსტიკასა და მკურნალობაზე. ანტი-ტუბერკულოზურ მკურნალობაზე მყოფ პაციენტებს და ყოფილ პაციენტებს შორის დიაგნოზის დასმისა და მკურნალობის პროცესში გენდერული ბარიერების დასადგენად ჩატარდა რაოდენობრივი კვლევა. ასევე შეფასდა ტუბერკულოზთან დაკავშირებული სტიგმა და დისკრიმინაცია. კვლევის სუბიექტების შერჩევა მოხდა მარტივი შემთხვევითი შერჩევის მეთოდით 1:1 სქესის თანაფარდობით. კვლევაში მონაწილეობა იყო ნებაყოფლობითი. მონაცემთა შეგროვება განხორციელდა ინდივიდუალური გასაუბრების მეთოდით. პაციენტების შერჩევისას გამოყენებული იყო ტუბერკულოზისა და ფილტვის დაავადებათა ეროვნული ცენტრის რეესტრი. კვლევაში მონაწილეობა მიიღო 230 პაციენტმა, მათ შორის ანტი-ტუბერკულოზურ მკურნალობაზე მყოფი პაციენტები ან ყოფილი პაციენტები, რომლებმაც უკვე დაასრულეს ან შეწყვიტეს მკურნალობა. კვლევაში ჩართულ მონაწილეთა 115 (50%) იყო მამაკაცი. ტუბერკულოზის შესახებ ინფორმირებულობის და ცოდნის თვალსაზრისით მნიშვნელოვანი გენდერული განსხვავება არ გამოვლინდა. ქალებში ტუბერკულოზთან ასოცირებული სტიგმა უფრო მაღალი იყო, მამაკაცებთან შედარებით. ასევე, უფრო მეტმა ქალმა რესპონდენტმა აღნიშნა სხვა ადამიანების მხრიდან მათ მიმართ დამოკიდებულების უარყოფითი ცვლილება ტუბერკულოზის დიაგნოზის დასმის შემდეგ (14,8% vs 8,7%). განსხვავებით მამაკაცებისა, ქალების უმეტესობამ აცნობა საკუთარი ოჯახის წევრებს ტუბერკულოზის სიმპტომების შესახებ და შესაბამისად, ქალებს ექიმთან პირველი ვიზიტის დროს თან ახლდათ ოჯახის წევრი. საქართველოში, ისევე როგორც მსოფლიოს სხვა ქვეყნებში, მამაკაცების ტუბერკულოზით დაინფიცირების ალბათობა უფრო ხშირია, ვიდრე ქალები. ამასთან, ტუბერკულოზთან დაკავშირებული სტიგმა ქმნის ბარიერებს ტუბერკულოზის სერვისების მიღების დროს. ბარიერების შემცირების პროგრა-მებმა აუცილებელია განახორციელონ გენდერული რისკების შეფასება და ეპიდემიოლოგიური სიტუაციის სიღრმისეული ანალიზი პაციენტთა ეკონომიკური სტატუსის, საცხოვრებელი პირობების, რეგიონების, დასაქმების სტატუსისა და ეთნიკური ნიშნების გათვალისწინებით. ამ კუთხით ეფექტურმა ჩარევებმა შესაძლოა შეამციროს ზემოაღნიშნული ბარიერები და ხელი შეუწყოს ტუბერკულოზის დროულ დიაგნოსტირებას და მკურნალობას.