Financial challenges to access tuberculosis treatment in Ribeirão Preto - São Paulo

BARREIRAS ECONÔMICAS NA ACESSIBILIDADE AO TRATAMENTO DA TUBERCULOSE EM RIBEIRÃO PRETO - SÃO PAULO

BARRERAS ECONÓMICAS EN LA ACCESIBILIDAD AL TRATAMIENTO DE LA TUBERCULOSIS EN RIBEIRÃO PRETO - SÃO PAULO.

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ABSTRACT

The objective of this study was to analyze the financial challenges that patients have to deal with to access the Tuberculosis (TB) Care Reference Centers in Ribeirão Preto. Adjustments were made to the Primary Care Assessment (PCAT) and an opinion poll was made with one-hundred patients following treatment and 16 health care professionals working at TB Reference Centers in Ribeirão Preto. Anova, Kruskall Wallis and chi-square tests were used. Most patients were males and most health care professionals were female. Differences were found between Centers C and A, in that Center C (p=0.028) offers a bus pass, and in A (p=0.010) patients paid for their own transportation. The indicator medical appointment in 24 hours showed a satisfactory level. There were disagreements between the reports from patients and health professionals as to the center offering the bus pass. Patients face challenges in their treatment, such as costs with transportation or being late for work, which result in losses in the family income.

DESCRIPTORS

Tuberculosis
Health Services Accessibility
Primary Health Care
Social conditions
Public health nursing

RESUMO

A presente pesquisa objetivou analisar as barreiras econômicas na acessibilidade dos doentes aos Centros de Referência e Atenção à Tuberculose (TB) no município de Ribeirão Preto. Realizou-se inquérito de opinião a partir da adaptação do instrumento *Primary Care Assessment* (PCAT) com 100 doentes em tratamento e 16 profissionais de saúde dos Centros de Referência à TB em Ribeirão Preto. Aplicaram-se os testes Anova, Kruskall Wallis e Qui-quadrado. Predominaram doentes do sexo masculino e profissionais de saúde do sexo feminino. Identificaram-se diferenças entre os centros C e A, sendo que em C (p=0, 028) é oferecido o vale-transporte e em A (p=0,010) o paciente arca com os custos de deslocamento. O indicador consulta médica em 24 horas apresentou-se com nível satisfatório. Houve divergências entre os relatos dos doentes e dos profissionais de saúde em relação ao oferecimento de vale-transporte. O doente encontra barreiras para o tratamento, como gastos com transportes ou atrasos no emprego, acarretando prejuízos na renda familiar.

DESCRITORES

Tuberculose
Acesso aos Serviços de Saúde
Atenção Primária à Saúde
Condições sociais
Enfermagem em saúde pública

RESUMEN

La investigación objetivó analizar las barreras económicas en la accesibilidad de enfermos a Centros de Referencia y Atención de Tuberculosis (TB) en municipio de Ribeirão Preto. Se realizó averiguación de opinión a partir de adaptación de instrumento Primary Care Assessment (PCAT), con 100 enfermos en tratamiento y 16 profesionales de los Centros de Referencia de TB en Ribeirão Preto. Se aplicaron los tests Anova, Kruskall Wallis y Qui-cuadrado. Predominaron enfermos masculinos y profesionales femeninos. Se identificaron diferencias entre los centros C y A, en C (p=0,028) se ofrece *vale transporte*, en A (p=0,010) los pacientes afrontan cargo de traslado. El indicador consulta médica en 24 horas presentó nivel satisfactorio. Existieron divergencias entre relatos de enfermos y profesionales en relación al ofrecimiento de *vale transporte*. El enfermo encuentra obstáculos en su tratamiento, como gastos de movilidad o atrasos en su empleo, acarreando perjuicios a la renta familiar.

DESCRIPTORES

Tuberculosis
Accesibilidad a los Servicios de Salud
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INTRODUCTION

Tuberculosis remains one of the main challenges to public health policies. It should be highlighted that drugs tend to be effective against the bacillus, but that challenges relate to the organizational elements of health services and to human behavior[1].

The bacillus has infected approximately one-third of the world population, and 5 to 10% will get ill. In 2006, about 9.2 million new cases occurred around the world, 0.5 million of which were multidrug-resistant (MDR)[2].

Brazil ranks among the 22 countries with the highest notified TB burden in the world. In the country, in 2007, 92 thousand TB cases were estimated, with an incidence level of 49 cases per 100,000 inhabitants when considering all forms of the disease. The prevalence rate corresponded to 60 cases per 100,000 inhabitants, while mortality, default, DOTS coverage and cure percentages figured around 91%, 8.3%, 75% and 72%, respectively[2].

The country dropped from the 16th place in 2006 to the 18th position in 2009 in the ranking of the 22 countries with high TB burden[3]. This can partially be attributed to the advancement itself of the Unified Health System (SUS) in the reduction of health inequities, permitting socially vulnerable populations' access to health services. Another aspect that contributed to this rank change is exactly the ongoing social and economic development in Brazil, mainly in recent years.

Despite undeniable advances in the country, TB remains a burning issue in the political-economic-social conjuncture. The disease has aggravated the poverty status of low-income populations in developing countries, with a disproportional impact on these countries' economy, specifically because it affects the economically active age range, generating unemployment, sequelae and deaths in that group[4].

Tuberculosis treatment also imposes significant costs on patients and families; each expense previewed or made represents an economic barrier to care[5]. The main reasons why patients do not have access to health services are transport availability and accessibility, transportation cost, inaccessible location of health units, service delivery at times that do not coincide with user needs[4-5].

Accessibility comprises not only the *act of entering* or reaching health services, but represents the care process, that is, everything performed involving the user for him/her to continue in the system. *Accessibility* is a noun that indicates the quality of being accessible; *accessible*, in turn, is an adjective that indicates what can be easily reached; what is within reach[6]. It represents the degree of adjustment between the characteristics of healthcare and population resources, in the process of seeking and obtaining care, within a functional relation between the set of obstacles, the search for and achievement of care and the population's corresponding abilities to overcome these obstacles. In that sense, the accessibility of TB treatment is not restricted to getting medication or protocol diagnostic tests, but comprises all means, mechanisms and technologies that facilitate or enhance patients' reach of these services, without any burden or costs for patients, families and communities.

As it is important for health teams to understand the accessibility concept, and as health workers play a paramount role in the review and re-elaboration of clinical protocols, which should be less stuck and more outlined based on particularities, and with a view to contributing to the quality and problem-solving ability of health actions and services, this research aimed to analyze economic barriers in patients' accessibility to TB Referral and Care Centers (CRT) in Ribeirão Preto – São Paulo.

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METHOD

Study design

This paper is part of a series of studies performed in different Brazilian regions, in the framework of the multicenter research project the Operational Research area of the Brazilian Tuberculosis Research Network/ REDE-TB has developed. The research responds to the World Health Organization's (WHO) proposal, considering that the *performance assessment of health services* represents a priority research area for sectoral reforms. To the extent that they identify *gaps* in health service system, they offer support for reformulations.

This descriptive and epidemiological research considers the accessibility dimension as one of the main Primary Health Care (PHC) attributes, which corresponds to the absence or presence of financial, organizational and/or structural barriers that hamper the obtainment of care[6].

Place of study

This study was accomplished between July 1st and August 30th 2007 and involved the TB Health Care Facilities (CRT) in Ribeirão Preto, a city in São Paulo State with 563,917 inhabitants. In the city under analysis, TB control, case detection, diagnosis and treatment actions take place at five CRT, one of which was not assessed because, at the time of data collection, it was not working due to the lack of physicians.

Subject selection

A convenience sample was selected, with two groups of key informants. The first comprises health professionals (physicians, nurses and nursing auxiliaries): the second included TB patients over 18 years of age, who did not belong to the prison system and were under treatment between June 2006 and July 2007.

Instrument

The instrument was based on the Primary Care Assessment Tool (PCAT), adapted to assess tuberculosis care in Brazil[6]. In this research, seven instrument questions were used, related to the economic accessibility dimension and presented in Figure 1. Two instrument versions were used: one for health professionals and another for patients.

The interviewee answered each question according to a Likert-type scale, *never*, *hardly ever*, *sometimes*, *almost always* and *always*, scored from one to five. The answers were added up and the mean score (sum of individual question scores divided by total number of subjects in the health professional and/or patient group) was one indicator.

Each interviewee (patient or health professional) received explanations about the different response options, including a small card with a graphical representation of the response scale.

The interviewers explained to the informants that each answer had a numerical meaning (never = 1; hardly ever = 2; sometimes =3; almost always = 4; always = 5), which also corresponded to the number of times (in %) the inquired event happened in a typical week. To capture all answer possibilities, the categories *does not know* and *does not apply* were added, scored as 0 (zero) in these cases.

Figure 1 shows a schematic synthesis of the construction process of indicators and compound ratios defined in the research.

Analysis Plan

Statistica7.0 software by *StatSoft* was used for analyses, which were developed in two phases:

In phase I, the authors compared *the CRT's*: Data were submitted to Variance analysis with one classification criterion (ANOVA). ANOVA can be understood as a test for the comparison of sample means, influenced by different factors, assuming the normality and equality of variances in sample data[7]. Thus, the equality of variance (homoscedasticity) ANOVA requires was verified using Bartlett's test, which is sensitive to Normality[7]. For those analyses that showed violation of the criteria for ANOVA use, first, the data transformation procedure was conducted. For analyses that still violated the criteria for ANOVA use, Kruskal-Wallis' non-parametric test was applied, applied to compare three or more independent sample. In this test, however, no hypothesis of homoscedasticity whatsoever is assumed[7].

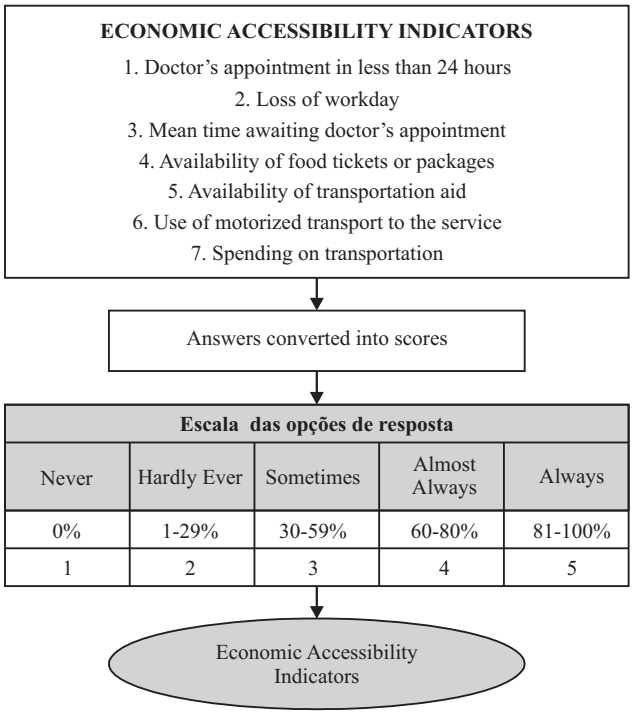

Figure 1 – Schematic synthesis of the construction process of economic accessibility indicators and compound ratios**Table Ta1**

After applying the Kruskal-Wallis test and if the result was significant ($p<0.05$), the multiple comparison test known as *Dunn* or *Z prime* was used. When the F test was applied and if the result was significant ($p < 0.05$), Tukey's test was performed.

In phase II, when the patient and health professional groups were compared, the $\chi 2$ test was applied.

Accessibility levels were considered satisfactory when indicators were equal to 4 or higher; regular, when lower than 4 but equal to or higher than 3; and unsatisfactory below 3.

Ethical aspects of research:

To develop this research, the ethical and legal aspects of National Health Council Resolution No 196/96 were complied with, in which each participant manifested written agreement through the Informed Consent Term. Approval for the project that originated this research was obtained from the Institutional Review Board at the University of São Paulo at Ribeirão Preto College of Nursing, under protocol number 0984/2008.

RESULTS

Table 1 presents the characteristics of the 16 interviewed health professionals according to gender and professional information. Regarding gender, 81.3% of the health professionals were female.

Table 1 – Distribution of health care professionals at TB Health Care Facilities according to gender and occupation in Ribeirão Preto, SP - Brazil - 2007

Variables	N	%
Gender		
Male	3	18.7
Female	13	81.3
Profession		
Physician	3	18.7
Nurse	4	25.0
Nursing auxiliary	9	56.3

Study participants also included 100 TB patients, 69% of whom were male and had finished primary education. Sixty-one percent were economically active, as shown in Table 2.

Economic accessibility was assessed based on seven indicators, and the results are shown in Table 3. The indicators *doctor's appointment in less than 24 hours in case of medication side effect*; *supply of transportation aid* and *spending on transportation* revealed significant differences among the TB Health Care Facilities (CRT).

As for *emergency medical appointment*, despite the lack of statistical significance, CRT D showed regular scores, while the remainder of CRT achieved satisfactory levels. Also in Table 3, regarding transportation aid, significant differences were revealed between CRT C and A (p = 0.028), as the benefit is offered at C but not at A.

Table 2 – Characteristics of TB patients according to socio--demographic information and TB Health Care Facilities, SP – Brazil - 2007

Variables	A (%)	B (%)	C (%)	D (%)	Total
Gender					
Female	14	4	8	5	31
Male	25	20	14	10	69
Education					
No education	1	2	4	0	7
Primary education	29	16	13	13	71
Secondary education	7	6	3	1	17
Higher education	2	0	2	1	5
Age					
15-30	12	0		3	17
31-45	12	7		8	33
46-59	9	4		8	28
60 and +	5	5		5	16
Ignored	1	3		1	6
TOTAL	**39**	**24**		**15**	**100**

With regard to *spending on transportation*, in Table 3, a statistically significant difference is found between Centers C and A (p= 0.010), as users at C mentioned travel costs, while users at A did not.

According to Table 4, when comparing the patients and health professionals' perception of economic accessibility, the authors verified concordance for the indicators *doctor's appointment*, *mean waiting time for the consultation* and *supply of food aid*, which both groups scored as satisfactory level.

Table 3 – Economic accessibility indicators of tuberculosis patients according to TB Health Care Facilities in Ribeirão Preto, SP – Brazil - 2007

Indicators		A (n = 39)	B (n= 24)	C (n = 22)	D (n = .15)	*p*
1. Doctor's appointment in less than 24 hours	Mean IC (95%)	4.87 [4.68-5.05]	4.70 [4.84-5.05]	4.81 [4.52-5.11]	3.33 [1.98-4.68]	**0.014**
2. Loss of workday due to the doctor's appointment for TB	Mean IC (95%)	3.25 [2.63-3.87]	4.25 [4.68-5.05]	3.40 [2.58-4.23]	3.13 [2.15-4.11]	0.141
3. Mean waiting time for a doctor's return appointment longer than 60 minutes	Mean (95%)	3.89 [3.39-4.39]	4.04 [4.69-5.06]	4.36 [3.84-4.88]	4.60 [4.14-5.05]	0.262
4. Supply of food aid or package	Mean IC (95%)	3.97 [3.40-4.54]	4.33 [3.82-4.80]	4.04 [3.32-4.76]	4.46 [3.68-5.24]	0.703
5. Supply of transportation aid	Mean IC (95%)	1.82 [1.31-2.32]	2.41 4.52-5.02	3.36 [2.47-4.25]	3.20 [2.12-4.27]	0.007*
6. Use of motorized transport to go to the service	Mean IC (95%)	1.56 [1.11-2.00]	2.00 [4.32-4.97]	2.54 [1.68-3.40]	1.86 [1.00-2.72]	0.169
7. Spending on transportation to the health service	Mean IC (95%)	2.61 [1.98-3.24]	3.5 [2.66-4.37]	4.36 [3.72-4.99]	3.40 [2.42-4.37]	0.005*

p: probability of type I error; significance level, *p < 0.05; p-value in Bold Kruskal-Wallis test was applied; CI: confidence interval.

The authors found extreme disagreement was found for the indicator *supply of transportation aid*, which professionals ranked as satisfactory and patients as unsatisfactory, alleging the infrequent receipt of this aid.

Table 4 - Comparison between economic accessibility indicators according to TB patients and health professionals' perception in Ribeirão Preto, SP – Brazil - 2007 *

	Patients	Health Professionals	*p*	Agreement?
ɔpointment in less than 24 se of drug side effect	4.34-4.84	4.80-5.07	0.428	Yes
rkday due to doctor's ıt for TB	3.15-3.87	1.53-2.59	0.001	No
ng time for return doctor's ıt longer than 60 minutes	3.88-4.40	3.66-4.71	0.104	Yes
ʾood aid	3.83-4.47	5.0-5.0	0.113	Yes
ransportation aid	2.13-2.89	4.60-5.03	0.001**	No
orized transportation to ıealth service	1.60-2.26	1.53-2.59	0.001**	No
n transportation to the ice	2.94-3.71	2.72-4.28	0.001**	No

(*) Presented scores mean 95% confidence intervals; (**)No= X^2 test for difference = $p < 0.05$;
Satisfactory ≥ 4; Regular: 3 ≤ Indicator <4; Unsatisfactory: Indicator < 3

DISCUSSION

According to the results, higher incidence levels of TB were found in men, in line with other studies[8-10]. Despite historical knowledge on gender differences and the overwhelming incidence levels in the male gender, little or no emphasis is placed on this difference. In many studies, it is much more described than the target of research or intervention[9-12].

These studies contain a trend towards the generalization of health-disease, wealth and poverty determinants, ignoring the structuring details of TB patients' social life conditions[11-12] and social forms of interaction and occupation. In fact, this occupation or form of social interaction can be one of the many responses regarding gender differences in TB incidence levels.

In view of this context, wealth or poverty cannot be considered the sole explanatory variables of an outcome – *getting ill due to tuberculosis*, but should be analyzed together with work relations, unemployment, addiction and stress with a view to defining a more effective intervention[13-15]. Going back to the gender differences evidenced in this study, some of the abovementioned factors can take more intense forms and thus influence the health-disease process of one or the other gender. To give an example, alcohol addiction is expressive among men and represents an important risk factor for the development of active TB[16].

The fight against alcohol has been one of the priorities in the National Comprehensive Man's Health Policy (PNAISH)[16], which can entail an important drop in the number of TB cases, not because of the repression, but due to the emphasis placed on awareness and education of young people towards healthy habits.

Due to its strong relation with social determinants[9], TB imposes a great challenge on the health services, as well as trans-sectoral management in health. Thus, some measures are considered relevant, not only in the *charitable* sense, such as food package donations, but proactive forms of inserting the patient and family into society, demanding articulation between the health and education, housing, food and leisure sectors, among others. This reveals the importance of a *trans-sectoral approach*, instead of the juxtaposition or overlapping among different sectors[8].

Among the economic accessibility indicators analyzed, weak points were observed in individual care, such as lost workdays due to treatment, in which it is a fact that teams face difficulties to work in a less stuck format that is more outlined based on singularities. In the micro-political space, no attention is paid to the drastic consequences for these families' income[5], in which the teams reveal a narrower conception of the health-disease process, which does not conjure in favor of social production in health.

Another weakness was exactly the patient's spending on transportation, which but reinforces the incipient nature of trans-sectoral management in the context of TB care[8]. Transportation expenses are specifically related to the CRT's locations, which tend to be concentrated in more central regions of the city, while the patients live in more peripheral regions[3]. Results of this weakness were identified in other scenarios through the considerable increase in abandonment rates[8-12]. It should be reminded that, in these peripheral areas, social inequities are clearly observed, including unemployment, slums, drug addiction, which constitute a peculiar niche of tuberculosis[9-10,12].

As for the availability of transportation aid, inequity was quite strong, with disparities in the distribution of this transportation facilitator among health services, mainly marked by non-systematic distribution, whose criteria are established based on affinity, approximation and the pow-

er of one to the detriment of others. In this dispute, the party *without voice* ends up losing, which reinforces social injustice even further[14].

A curious fact revealed in this study refers to the divergence between the patients and the professionals' reports, mainly regarding the supply of transportation aids. Hence, it remains unknown whether health workers actually perform their actions in line with their discourse.

The study pictured patients' deficient accessibility to TB care services, whose form sometimes ends up distancing instead of approaching their users, due to the imposed treatment, labor deadlocks and costs. Going back to the accessibility concept, that this phenomenon does not represent the simple act of entering, but the use of all possible technologies for users to continue in the system, it can be inferred that the patients were confronted with more barriers than actual accessibility.

The *target image* necessary in tuberculosis patients' care is questioned. In fact, the comprehensive view of the health-disease process is the response, in which sectoral integration stands out, which should be the emblem of health work. Primary healthcare teams' difficulty to work in this perspective is clear though, due to the lack of preparation and qualification, as a study accomplished in priority cities in São Paulo State appointed [17-18]. The authors call attention to these professionals' awareness of and involvement in their work policy and mission, trough permanent workshops in which not only cognitive issues, but also prejudices, concepts, ideologies and values[17] should be taken into account.

Using the definition some authors defend[14-15], i.e. that health constitutes one of the *elements of quality of life and one of the objective conditions for human development, a resource for life*, instead of an individual's eternal pursuit, it is assumed that TB should go beyond the walls of health units, beyond individual patient care, towards the mobilization of an entire society[19-20] to call for political, economic and social changes. Although social inequalities have not been sufficient reason for the mobilization of civil society according to some authors[15], TB itself can serve as a trigger, due to the link between the risk of the group, injustice and indirect responsibility.

CONCLUSION

TB revealed higher incidence levels in men, a concerning fact that demands further research with a view to understanding the relation between social determinants, gender differences and illness due to TB. The PNAISH represents an important governmental measure to value and recover care for men, and many of the measures proposed in this policy can substantially contribute to reduce the number of TB cases.

The research showed barriers in accessibility to TB care, such as expenses and job impairments, evidencing health inequities, despite the SUS policy towards social justice and increased access. Due to its intrinsic association with social determinants, TB strongly appeals on cross-sectoral management and social mobilization. Thus, it seems reasonable to conclude that the fight against the disease will only be successful when services are furnished with committed workers who involve in this proposal.

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