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Original Article

FATORES SOCIODEMOGRÁFICOS E DE SAÚDE DE PESSOAS COM TUBERCULOSE EM TRÊS CIDADES NO SUL DO BRASIL

SOCIODEMOGRAPHIC AND HEALTH FACTORS OF PEOPLE WITH TUBERCULOSIS IN THREE CITIES IN SOUTHERN BRAZIL

FACTORES SOCIODEMOGRÁFICOS Y DE SALUD DE LAS PERSONAS CON TUBERCULOSIS EN TRES CIUDADES DEL SUR DE BRASIL

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RESUMO

Objetivo: Descrever as características sociodemográficas de pessoas acometidas por tuberculose, de resposta ao tratamento e uso de substâncias nocivas à saúde, em três municípios prioritários no controle da doença, no Sul do Brasil.**Método:**Estudo transversal,descritivo-exploratório, realizado com 209 pessoas em tratamento de tuberculose. Aplicou-se instrumento para coletar dados sociodemográficose de saúde dos participantes. Realizada análise descritiva dos dados. **Resultados:** Os participantes possuíam em média, 44 anos (DP:16,1); em sua maioria solteiros (50,7%), com crença religiosa (91%), ativos economicamente (61,7%), com ensino fundamental (65%), renda média de 1.791,91 reais. Entre os participantes, 28,2% eram fumantes, enquanto 43,5% nunca fumaram; 53,4% negaram etilismo e 46,5% afirmaram o uso. Dos participantes, 56% eram de casos novos da doença, enquanto 7,7% apresentavam recidiva. Houve 78,5% que apresentaram cura ao final do tratamento e 3,8%, cujo tratamento não obteve resposta satisfatória, sendo 1,9 %, aqueles que evoluíram para óbito. **Conclusão:** Analisar o perfil das pessoas atendidas nessas cidades permitiu maior compreensão acerca da tuberculose, ampliando o olhar sobre o tratamento e acompanhamento de tais pacientes, bem como dos determinantes que estão intimamente relacionados ao curso da doença.

Descritores: Cooperação e Adesão ao Tratamento; Atenção à Saúde; Tuberculose.

ABSTRACT

Objective: to describe the sociodemographic characteristics of people with tuberculosis in response to treatment and use of harmful substances in three priority municipalities for control of this disease in southern Brazil. **Methods:** cross-sectional, descriptive and exploratory study conducted with 209 people being treated for tuberculosis. An instrument was applied to collect sociodemographic and health data from the participants. A descriptive analysis of the data was performed. **Results:** the participants were 44 years old on average (SD: 16.1); mostly single (50.7%), with religious belief (91%), economically active (61.7%), with elementary education (65%), and had an average income of R$ 1.791.91. Among them, 28.2% were smokers, while 43.5% never smoked; 53.4% denied alcoholism and 46.5% stated the use. Of the participants, 56% were new cases of the disease, while 7.7% were cases of relapses. There were 78.5% who were cured at the end of treatment and 3.8% whose treatment did not obtain a satisfactory outcome; 1.9% died. **Conclusion:** the analysis of the profile of people treated in these cities allowed a greater understanding of the disease, broadening the view on the treatment and follow-up of such patients, as well as the determinants that are closely related to the course of the disease.

Keywords: Cooperation and Treatment Adherence; Healthcare; Tuberculosis.

RESUMEN

Objetivo: Describir las características sociodemográficas de las personas con tuberculosis, la respuesta al tratamiento y el uso de sustancias nocivas en tres municipios prioritarios para el control de la enfermedad en el sur de Brasil. **Método:** Estudio transversal, descriptivo y exploratorio, realizado con 209 personas con tratamiento por tuberculosis. Se aplicó un instrumento para recopilar datos sociodemográficos y de salud de los participantes. Se realizó un análisis descriptivo de los datos. **Resultados:** Los participantes tenían un promedio de 44 años (DE: 16,1); en su mayoría solteros (50.7%), con creencias religiosas (91%), económicamente activos (61.7%), con educación primaria (65%), ingreso medio de 1,791.91 reales. De los participantes, 28.2% eran fumadores, mientras que 43.5% nunca fumaron; El 53.4% negó el alcoholismo y el 46.5% declaró el uso. De los participantes, el 56% eran casos nuevos de la enfermedad, mientras que el 7,7% tenía recaídas. Hubo 78.5% que presentaron cura al final del tratamiento y 3.8% cuyo tratamiento no obtuvo una respuesta satisfactoria, de estos 1.9% murieron. **Conclusión:** El análisis del perfil de las personas tratadas en estas ciudades permitió una mayor comprensión sobre la tuberculosis, ampliando la visión sobre el tratamiento y el seguimiento de dichos pacientes, así como los determinantes que están estrechamente relacionados con el curso de la enfermedad.

Descriptores: Cumplimiento y Adherencia al Tratamiento; Atención a la Salud; Tuberculosis.

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INTRODUCTION

Health results from the interaction between biological, mental, social, cultural, economic aspects and their relationship with the environment and society. In this sense, and in response to the call made by the World Health Organization (WHO) to health professionals about the need to prioritize the human dimension, it is necessary to understand the individual, to know their context, the reality in which they live and the suffering and difficulties they face [1].

Among the diseases that still pose a challenge to the health system is tuberculosis (TB). Both TB and Acquired Immunodeficiency Syndrome (AIDS) are identified as an objective for the fulfillment of the goals of sustainable development, which is to promote well-being for people at all ages. These two diseases were pointed to their elimination by the year 2030. To achieve it, integrated patient-centered care and prevention is required; directed policies and support systems; intensification of research and innovation. TB is the disease that most emblematically characterizes the social determination of poverty in the health/disease process of a population [2].

The incidence, prevalence and mortality rates highlight the magnitude of the problem. TB is a disease with high incidence worldwide and millions of new cases are diagnosed each year. Between the infectious diseases, it has the highest mortality rate. [3]. There were 72.788 new TB cases in 2018. In 2017, 4.534 deaths from the disease were documented, which corresponds to a mortality coefficient of 2.2 deaths/100.000 inhabitants [4].

Brazil ranks 20th among the 30 countries with the highest TB rate, controlling the disease is considered a priority, and holds 87% of the world's total cases [5]: in 2016 58.601 cases were reported. In the state of Santa Catarina, the records indicate that 1.585 new TB cases were reported that year, and 1.046 people were cured with appropriate treatment. Of the total number of cases, 1.159 were confirmed as pulmonary TB [6].

Universal coverage is a key element in achieving the global goals, by requiring governments to take responsibility for ensuring universal access to health services, promoting the elimination of poverty, equity, justice and human rights. Achieving those goals is fundamental to provide better services to the most vulnerable populations, thus contributing to act against TB [7].

Correctly diagnosing and treating cases of pulmonary TB are fundamental measures for its control. Efforts have been made to achieve an early diagnose, so the patient may start appropriate treatment in order to disrupt the bacillus transmission chain[8].

This highlights how important TB treatment is, as it is the main way to decrease mortality. However, treatment adherence represents a challenge for the health system. This is because the knowledge, attitudes and perceptions of people affected by TB may favor adherence or non-adherence to treatment[9]. Irregular treatment of TB contributes to drug resistance, in addition to maintaining disease transmission [10-11].

No matter how focused the treatment is, there are many disparities (regional and national) that occur since the onset of disease elucidation (symptoms and diagnosis) to the final outcome of the case. Complete treatment is indispensable for TB control, in addition to the necessary reorganization of the health system, aiming at results in terms of early diagnosis, standardized treatment, free medication supply and case closure due to discharge/cure [12].

Disease-related socioeconomic factors[7] play a direct role in new cases outbreak, factors such as low education or income. Therefore, given the relevance of the theme in the world scenario, it is necessary to know the profile of people, how the disease behaves in relation to some factors, such as alcoholism, smoking, economic situation as well as health conditions and determinants that are intensifying, decreasing or sometimes maintaining the course of the disease. Consequently, this study was conducted to describe the health conditions and socioeconomic characteristics of people with TB in three priority municipalities for the control of this disease in southern Brazil.

METHODS

This is a cross-sectional, descriptive-exploratory study conducted in three health services, who attend patients with TB from three municipalities of the Santa Catarina State. These municipalities are considered as a priority for controlling the disease. According to the National Tuberculosis Control Program (NTCP), indicators to classify municipalities as priorities for TB include: being a capital city; municipalities

of the metropolitan region of capital with more than 30 cases, on average, or higher notified value of the last three years; municipalities with fewer than 100.000 inhabitants and a TB rate of 30 or more cases; incidence rate higher than 80% of the country rate or higher than country mortality rate [13].

Thus, the choice of the three municipalities occurred, due to similarities in the form of organization of these municipalities, the care provided to TB patients and because they are a priority in controlling the disease in the country. The main healthcare model of the three municipalities investigated is the Family Health Strategy (FHS), with a team of doctors, nurses, community health agents and nursing technicians. In these three municipalities there is a municipal TB control program, in which people are monitored monthly with medical consultations and nursing actions. The study included 209 people who were being treated for TB. The sample included all people who were being treated for TB in the referred municipalities and who agreed to participate in the study. Data collection occurred from October 2015 to March 2018, the long collection period was due to the difficulty of accessing all patients undergoing treatment in these municipalities and finding professionals to collect data. The interviews were conducted by applying a questionnaire by seven previously trained nurses. For the selection of participants, the following inclusion criteria were adopted: age over 18 years; have the ability to communicate based on the researcher's subjective assessment and be under treatment in healthcare services during the period of data collection.

Data collection was performed using a questionnaire containing sociodemographic information (gender, race, religion, marital status, income, active work) and health conditions (tobacco and alcohol use, treatment phase of the disease and adherence to TB treatment). In certain variables, not all participants answered the questions, so in the presentation of the results, the tables were exposed in parentheses, along with those variables the (n) answers, when the 209 participants were not reached.

Data were compiled using the Microsoft® Excel® software. Data analysis was performed using SPSS (IBM SPSS version 22), using descriptive statistics for quantitative variables (mean, standard deviation (SD), maximum and minimum values). All ethical precepts determined by Resolution nº 466/2012 of the National Health Council of the Ministry of Health were respected. The study received a favorable opinion on December 7, 2015, by the Ethics Committee of the hospital of the Federal University of Santa Catarina (FUSC) and by the Ethics Committee for Research on Human Beings of FUSC, under protocol nº 1.249.257.

RESULTS AND DISCUSSION

The study included 209 people, 115 (55%) from Joinville, 57 (27.3%) from São José and 37 (17.7%) from Criciúma. The study participants were, on average, 44 years old (SD: 16.1). Regarding gender, 140 (67%) men and 69 (33%) women participated. Individual income averaged R$ 1.791.91 (SD: 58%). Sociodemographic characteristics (Table 1) and health conditions (Table 2) are shown below.

The predominance of males with TB found in this study corroborates data from another study, [14] in which similar rates, in concordance to the present research were found in both females (31.1%) and males (68.9%). These values are also close to those found in researches conducted in hospital care (30.1 and 69.9%) and primary care (33.8 and 66.2%) in the city of São Paulo [15] and also in a study conducted to verify the profile of TB patients in the city of Minas Gerais, Belo Horizonte State. (35.2 and 64.8%)[16]. Since TB is related to poor diet, poor hygiene, smoking, alcoholism or any other factor that generates low organic resistance [17], the combination of these factors in the male population may be responsible for the difference between men and women. Behavioral and cultural differences between men and women may be related to this contrast [18].

It should be noted that in developing countries, 80% of those infected are between 15 and 59 years old [8,14]; therefore, people in the range of highest social productivity. One of the possible explanations for the high prevalence of TB in young adults is related to the habits adopted by them, leaving them more exposed to the disease [19], to the increased prevalence of HIV and alcoholism[20]. Tuberculosis affects mainly the economically active population, especially men of working age, causing retardation of economic growth, impairing the development of society, generating more poverty and social exclusion [17]. The average age of 44 years obtained in the present research resembles a study conducted in the city of São Paulo, which presented in the age

group of 20 to 59 years [15] most cases of TB, and also another study that presented a higher incidence rate between 40 and 59 years [17].

Regarding race, the data obtained in the present study that show a higher prevalence of TB in the white population (74.2%) differ from a study conducted by Ferraz et al.[14] which found a higher prevalence among the black population (76.7%). This finding is due to the predominance of the white population in the cities studied. According to the IBGE 2010 census, 84% of the population of Santa Catarina State declared themselves white [21-22].

Table 1 - Sociodemographic characteristics of people with tuberculosis in three priority municipalities for control of this disease in southern Brazil. São José - SC, Brazil, 2015 to 2018.

Variable	n	%
Gender		
Female	69	33.0
Male	140	67.0
Race		
White	155	74.2
Black	27	12.9
Brown	27	12.9
Religion (n=208)		
None	19	9.2
With religion beliefs	189	90.8
Marital Status (n=208)		
Married	69	33.2
Widowed	9	4.3
Divorced/separated	24	11.5
Single	106	51.0
Economic activity		
Not employed	78	37.3
Perform some type of paid work	129	61.7
No answer	2	1.0

Source: Elaborated by the authors based on the collected data.

Concerning the smoking habit, most participants reported that they had never smoked (43.8%), 58 participants (27.8%) reported having smoked, but they had already quit, and 59 participants (28.4%) are active smokers. Regarding the alcoholism variable, 111 (53.1%) participants denied the use and 97 (46.5%) stated their alcohol intake, according to Table 2. Smoking, a factor that alters the activity of the immune system, directly impacts the course of the disease, since tobacco consumption leads to a reduction in the body's defense system and predisposes the patient to other comorbidities [17]. In relation to alcohol use, it is a similar situation, given that a study conducted, showed a 24 times greater probability of patients who use the substance, are prone to other diseases [17].

Table 2 - Smoking, alcohol consumption and frequency of alcohol use in people with tuberculosis in three priority municipalities for control of this disease in southern Brazil. São José - SC, Brazil, 2015 to 2018.

Variable	n	%
Smoking		
Never smoked	91	43.7
Former smoker	58	27.9
Active smoker	59	28.4
Alcohol consumption		
Yes	97	46.6
No	111	53.4
Frequency of alcohol consumption		
2 to 3 days a week	45	46.4
4 to 6 days a week	6	6.2
Every day	18	18.6
Once a month	14	14.4
2 to 4 times a month	2	2.0
Sporadically during the year	12	12.4
Frequency of alcohol consumption in years		
< 5 years	34	35.0
6 to 10 years	23	23.8
11 to 20 years	17	17.5
21 to 30 years	12	12.4
> 30 years	11	11.3

Source: Elaborated by the authors based on the collected data.

Of the participants who reported consuming alcohol, 34 (35.0%) reported consumption for less than 5 years, 23 (23.8%) for 6 to 10 years, 17 (17.5%) who ingested from 11 to 20 years, 12 (12.4%) participants who reported ingesting from 21 to 30 years, and finally those who have been drinking for over 30 years, with a number of 11 (11.3%) participants.

It is noteworthy that, among the variables, the frequency of alcohol consumption of 2 to 3 days a week, was reported by 45 (46.4%) participants, 18 (18.6%) who drink every day; followed by 14 (14.4%) who drink once a month, 2 (2.1%) who drink 2 to 4 times a month and 12 participants (12.4%) consume alcohol sporadically throughout the year (Table 2).

When considered that TB is a disease linked to factors such as poverty, living and working conditions, and that alcohol use causes deterioration of the immune system, this may be a predisposition factor for tuberculosis infection [17]. With regard to tobacco, it is also related to a greater chance of propensity to other diseases, and it can be inferred that patients using both substances will be more prone to worsening prognosis, since this is an infectious process that, under conditions of an appropriate treatment and a healthy lifestyle, shows significant improvement during the course of the disease [17].

Between participants, it was registered that most, 116 (55%), were new cases. However, there were still 16 (7.7%) people, with recurrence of the disease, as shown in Table 3. It is observed that the percentage of transference is high, which may be related to the diagnosis made in hospitals, being subsequently transferred to the primary care centers of the municipalities, as well as the change of domicile of these people. It seems that these transfers have occurred systematically, maintaining patient monitoring through epidemiological surveillance, avoiding the contagion of other people and ensuring that TB patients receive adequate treatment, while moving to the various healthcare centers, by informing these centers about the changes.

Table 3 - Characteristics of the disease regarding new cases, transfer, reentry and relapse in people with tuberculosis in three priority municipalities for control of this disease in southern Brazil. São José - SC, Brazil, 2015 to 2018.

Variable	N	**%**
New case	116	55.8
Transfer	66	31.7
Reentry after treatment quitting	10	4.8
TB relapse	16	7.7

Source: Elaborated by the authors based on the collected data.

Among the participants, 164 (78.5%) obtained a favorable response to the treatment, with cure at the end of the treatment. Ten (4.8%) abandoned the treatment, 4 (1.9%) died, 18 (8.6%) had to transfer their treatment to another municipality, 8 (3.8%) did not obtain a satisfactory response after treatment, being considered treatment failure, and 5 (2.4%) evolved to multidrug resistance TB (MDR-TB) as shown in Table 4.

Table 4 - Response to tuberculosis treatment in three priority municipalities for control of this disease in southern Brazil. São José - SC, Brazil, 2015 to 2018.

Variable	N	**%**
Cure	164	78.5
Treatment dropout	10	4.8
Death	4	1.9
Transfer	18	8.6
Treatment failure	8	3.8
TBMR	5	2.4

Source: Elaborated by the authors based on the collected data.

Regarding response to treatment, the cure rate reached 78.5%, although higher than other studies [14,20], it is still lower than the goal proposed by the Ministry of Health (MH), which is to cure 85% of diagnosed cases. This indicator is very useful to support the evaluation of treatment effectiveness [21]. The percentage of dropout was 4.8%, in turn, stays in concordance with the target set by the MH, which is 5% and well below that observed in others Brazilian regions. In Brazil, this percentage is variable in its various regions [21]. In the northern region it is around 9.8%, in the northeast 9.5%, in the southeast 11.8%, in the midwest 11.2% and in the south 10% [4].

Treatment dropout is still a major challenge among people with TB and its multiple causes are related to individual, social and healthcare issues.

Regarding individual aspects, drug use and the occurrence of other diseases, especially chronic ones, are identified as contributing to non-adherence to treatment[22].

CONCLUSION

Analyzing the health conditions and sociodemographic characteristics of people with TB allowed a greater understanding of the factors and determinants associated with the disease, as well as the profile of people and their health conditions, especially in three strategic cities of Santa Catarina.

Knowing characteristics such as gender, race, socioeconomic status and lifestyle habits such as smoking and alcoholism is important because these factors were closely related to a better or worse prognosis of the disease. The representation of the TB scenario and its related factors exposed herein enable the intensification of actions in these populations aimed at reducing transmission by means of improved adherence to treatment and consequent lower rates of treatment dropout and of emergence of resistant strains, bearing in mind that such conditions and characteristics are important aspects for TB control, and which lead to the persistence of the disease as a worldwide challenge.

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