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Profile of Elderly Diagnosed with Tuberculosis in a Reference Hospital in Brazil

ORIGINAL

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Abstract

Introduction: The increase in life expectancy shall be related to the higher number of tuberculosis cases, which, in spite of its curableness, still stand as a major challenge for public healthcare in several countries.

Objective: We sought to characterize the profile of elderly with the referred disease diagnosed in a reference hospital, residents of the city of João Pessoa-Paraíba-Brazil.

Method: It was a documental, descriptive, retrospective study with a quantitative approach which utilized the Epiinfo software, version 3.3.1 so as to systematize the data.

Results: The sample includes 169 diagnosis records of elderly with pulmonic tuberculosis, between the years of 2011 and 2013, of whom 6.5% are residents of the city of Bayeux, 12.4% Santa Rita, 3.6% Cabedelo, and 77.5% João Pessoa; The majority were male (65.1%), married (54.5%), with low education background (32.5%), non-institutionalized (79.9%), and actives (47.9%); of those, 32.5% were directed to reference service by another hospital unit. Among the associated comorbidities, we highlight alcoholism (25.5) and smoking (27.3%). Diabetes had higher rates in females (39.0%). The relevant symptom was coughing (66.1%); As for the closure, only 55.0% of the elderly

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were discharged from hospitals after cured, 10.7% died, and 11.2% abandoned treatment.

Conclusion: Describing the profile of elderly diagnosed with tuberculosis is relevant for public health. The results obtained are used to propose improvements in the care of the health service, allowing a treatment geared to the peculiarities of elderly people suffering from tuberculosis and actions to reduce cases of the disease in this population.

Keywords
Tuberculosis; Elderly; Delivery Health care

Introduction

Tuberculosis (TB) is undoubtedly a curable disease since the last century, as it has free and effective treatment. However, the grievance remains as one of the major challenges for public health in several countries, establishing a close relation between the social conditions of life, being considered one of the leading causes of death from infectious diseases [1].

In the world, the 2013 epidemiological data report 9 million people with TB and 1 million deaths due to the disease [2]. Brazil´s data point outs the prevalence of 40.7 cases/100.000 thousand inhabitants. Among the locations in Brazil, Paraiba specifically expresses an incidence rate of 30.7/100.000 thousand inhabitants, being considered the 14th Brazilian state with the highest number of notifications, especially for men, people in the range of 20 to 29 years and prevalence of pulmonary form [3-5].

Parallel to the constancy of TB in society, the world goes through the process of demographic transition, characterized by the decrease of fertility and mortality rates, resulting in increased life expectancy. In Brazil, it is estimated that by 2025 the number of elderly will reach 32 million, being the increase of this population a conditioning factor for those elderly who acquire and spread diseases of infectious nature, such as the TB [6-7]. Magnification of life expectancy is another aspect that promotes the presence of TB in the elderly population. It is seen that the cases in people older than 60 in Brazil increased significantly, having late diagnosis due to the common comorbidities in this age range, which generates greater susceptibility of people who age with the illness and probability of death from TB [8-9].

In addition to that, problems related to the aging process, like the changes in speech and memory, hinder the reports of elderly people about the signs and symptoms that could lead relatives and health professionals to suspect TB. And simultaneously, the decrease of the effectiveness of the immune system, unhealthy housing, overlapping debilitating chronic diseases, difficult access to health services and the atypical clinical frame delay early diagnosis, which can aggravate the condition [6-7].

Thus, health authorities are concerned to create subsidies to reduce the prevalence of TB. In Brazil, the Ministry of Health (MOH), together with the Unified Health System (SUS), has been covenanting health goals with the municipalities that have the autonomy to expand health actions and services directed to their epidemiological, political and social realities [10].

Therefore, it is essential that the health management of Brazilian municipalities consider two critical knots that are shown in TB problematic in

the elderly: the abandonment of treatment and the late diagnosis. The first problem intertwines factors inherent to therapy and the work process of the teams that make up the Family Health Strategy (FHS). As an example of the challenges related to the treatment, the following is observed: side effects caused by medication, size of the tablets, the time of treatment, the improvement of symptoms after starting it and often the difficulties in dealing with problems of social nature experienced by patients [11]. The second problem stems from both the user`s delay in seeking health facilities – which occurs routinely from the lack of understanding regarding the symptoms of the disease - and the barriers of access to the service [12].

It's at this conjuncture that while thinking of the elderly with TB, mister reflections are made on the many peculiarities that arise. On one side, an infectious disease that remains in the still underreported and neglected society. On the other, a human being, the elderly, that is more vulnerable to illness in the middle of a service full of gaps to be remedied.

This way, it is pertinent to reveal the epidemiological situation of TB in elderly patients in Paraiba, specifically in the municipalities of Bayeux, Cabedelo, Joao Pessoa and Santa Rita, focusing on the existing weaknesses in Primary Health Care (PHC) in an attempt to point out strategies that can minimize the difficulties inherent in the elderly population with TB.

From this angle, based on the pertinence of studies directed to the elderly population sickened by TB, characterizing the profile of the elderly with proper disease, diagnosed in a hospital of reference, became the objective in the metropolitan region of João Pessoa, Paraíba, Brazil.

It is inferred, therefore, that the study be a starting point for modifying the look of society, professionals and management services around TB in the elderly. Above all, it is important that a new reflection appears directed to the health care of the elderly, rethinking strategies to include not only the patient themselves, but the human being holistically, valuing their universe and its limitations to the effectiveness of therapy.

Method

Documental, descriptive and retrospective study, developed according to the quantitative approach, set in the Hospital Complex Clementino Fraga (CHCF), located in the city of João Pessoa-PB. This hospital is the state reference in the area of infectious and contagious diseases, and its outpatient sector, provides care in pulmonology, infectology, among other specialties.

The data is from 169 medical records of elderly people diagnosed with pulmonary TB in CHCF from the years 2011 to 2013, residents in the municipalities that make up the great Joao Pessoa: Bayeux, Cabedelo, Joao Pessoa and Santa Rita. It is emphasized that the identification of cases was obtained by consulting the Information System of Notification Grievance (SINAN), considering the inclusion criteria: be older than 60 and have the diagnosis of pulmonary TB in CHCF.

In order to collect the information, an instrument was produced based on a file of compulsory notification of TB and the patient's medical records that had been used in CHCF, the latter being provided by the Statistical and Medical Archive Service (SMAS).

The objective was to systematize the data, setting it into tables, in a descriptive manner. With the aid of Epiinfo software, version 3.3.1, considered significant for epidemiology in health, the achieved results were consolidated.

Considering the resolution 311/2007, of the Federal Council of Nursing (COFEN), the ethical and legal standards have been met, with satisfactory theoretical foundation to build a research to which the authorship or participation in technical and scientific production is recognized. (COFEN, 2007)

Results

The study included 169 records of patients, of which 6.5% are residents in the municipality of Bayeux, 12.4% Santa Rita, 3.6% Cabedelo and 77.5% Joao Pessoa, who were admitted to CHCF between the years of 2011 to 2013. The predominance of TB cases became evident in men (65.1%), people aged between 60 and 79 years (89.8%) and the divorced (46.1%).

Concerning the occupation, elderly people who were diagnosed with TB in CHCF were categorized as "active or inactive", as shown in **Table 1**. However, there was no record of this information in 11.8% of the records. Among them, 47.9% were inactive, while 40.3% active.

Table 1. Distribution of elderly profiles diagnosed with TB in the CHCF, from 2011 to 2013.

Variables	Frequency (N)	Percentage (%)
Municipalities		
João Pessoa	131	77.5
Bayeux	11	6.5
Cabedelo	06	3.6
Santa Rita	21	12.4
Sex		
Male	110	65.1
Female	59	34.9
Age group		
60 a 69	100	59.2
70 a 79	52	30.8
80 a 89	14	8.3
90 a 100	03	1.7
Marital Status		
Divorced	78	46.1
Married	40	23.7
Widower	31	18.3
Single	01	0.6
Ignored	14	8.3
Common-law marriage	05	3.0
Occupation		
Inactive*	81	47.9
Active	68	40.3
Not informed	20	11.8
Level of Schooling		
Illiterate	55	32.5
Incomplete Primary Education	55	32.5
Complete Primary Education	10	5.9
Incomplete high school	7	4.1
Complete High School	17	10.2
Incomplete Superior Education	1	0.6
Complete Superior Education	13	7.7
Ignored	10	5.9
Doesn't apply	1	0.6
Institutionalization		
None	135	79.8
Ignored	28	16.6
Prison	02	1.2
Other	04	2.4
Total	169	100.0

Inactive*: Retiree, Pensioner and Homemaker. Source: Complexo Hospitalar Clementino Fraga, 2015. **Source:** Research data

As for the level of education, according to data obtained, the variables "illiterate" and "incomplete primary education" stood out, accounting for 32.5%.

It was found that the majority of cases related to the "institutionalization" were not registered in the system. It is noteworthy that the term "institutionalization" corresponds to the institution that the elderly individual is bound, like nursing homes, prisons, psychiatric hospitals, among other ways.

When recognizing the relevance as much as the early diagnosis of TB in the Primary Health Care, the referrals of elderly people with TB are highlighted regarding the variables "hospital" and "without referral". Thus, 32.5% of the elderly who arrived at the service came from another hospital, mainly from the private network of hospitals. It is observed that 47.9% spontaneously sought out the HCCF, that is, without referral. It is important to show that only 5.3% of the elderly had their referrals coming from Primary Health Care (PHC), conducted by the medical professional of the Basic

Table 2. Percentage of referrals of the elderly diagnosed with TB.

Type of referral to the HCCF	Male		Female		Total	
	N	%	N	%	N	%
BUFH	7	6.4	2	3.4	9	5.3
Psychosocial care center	0	0.0	1	1.7	1	0.6
Hospital	40	36.4	15	25.4	55	32.5
Polyclinic	2	1.8	3	5.1	5	3.0
Emerg. Med. Serv	0	0.0	2	3.4	2	1.2
Init.Privat. Med.Cons	9	8.2	5	8.5	14	8.3
Without Referral	50	45.5	31	52.5	81	47.9
Ignored	2	1.8	0	0.0	2	1.2
Total	110	100.0	59	100.0	169	100.0

Source: Research data

Units of Family Health (BUFH) of the great João Pessoa. **(Table 2)**

The most common symptoms of TB in this population were cough and evening fever, corresponding to 71.6% and 38.5%, respectively, as presented in Table 3. The other symptoms didn't show any significant difference between the sexes. It was also observed that the variables, "alcoholism", "smoking" and "diabetes" stood out as the associated aggravations, accounting for 17.2%, 18.3% and 24.3%, in proper order. The "mental illnesses" were less frequent. **Table 3**

Regarding the type of entry in HCCF for treatment purposes, the study revealed that 81.7% of patients had never made use of antituberculosis drugs or did for less than a month, being considered then, new cases. When it comes to relapse, conceptualized by patients undergoing treatment for TB before, who were discharged as cured and returned to CHCF with an active disease, 11.2% had this kind of entry. The "return after dropping out" represented 6.5% of the sample studied. In addition, 0.6% of the elderly were admitted to the hospital by means of transfer.

Table 3. Symptoms and aggravations associated to the elderly with TB.

Variables	Frequency (N)	Percentage (%)
Types of Symptoms		
Cough	121	71.6
hemoptysis	13	7.7
Fever	2	1.2
Evening Fever	65	38.5
Night Sweating	4	2.4
Emaciation	58	34.3
Anorexia	58	34.3
Associated Aggravations		
Alcoholism	29	17.2
Diabetes	41	24.3
Mental Illness	3	1.8
Smoking	31	18.3
Hypertension	19	11.2
Other	24	14.2

In the records, it was observed that 82.7% of patients admitted to the HCCF were men and were recognized as new cases. For recurrences, there was a percentage approximation between men and women, the first equivalent to 11.8% and the latter 10.2%. But the "return after dropping out" represented 5.5% for males and 8.5% for females. As for "transferred", 1.7% were women and no data was found in relation to men. **Table 4**

Table 4. Distribution of elderly diagnosed with TB by type of.

Type of Entry	Male		Female		Total	
	N	%	N	%	N	%
New Cases	91	82.7	47	79.7	138	81.7
Relapse	13	11.8	6	10.2	19	11.2
Return after Dropping out	6	5.5	5	8.5	11	6.5
Transferred	0	0.0	1	1.7	1	0.6
Total	110	100.0	59	100.0	169	100,0

Source: Hospital Complex Clementino Fraga, 2015

As shows on **Table 5**, in the situation of closure, the variable "cure" occurred in 50.0% of males and 64.4% of females. It is observed that 11.8%

of men and 10.2% women abandoned treatment and that 10.7% of both sexes had death from TB as their cause.

Table 5. Situation of closure of elderly diagnosed with TB.

Situation of Closure	Male		Female		Total	
	N	%	N	%	N	%
Cure	55	50.0	38	64.4	93	55.0
Change of diagnostic	3	2.7	2	3.4	5	3.0
Dropout	13	11.8	6	10.2	19	11.2
Multiresistant tuberculosis	0	0.0	0	0.0	0	0.0
Death from tuberculosis	14	12.7	4	6.8	18	10.7
Death from other causes	3	2.7	2	3.4	5	3.0
Transferred	21	19.1	6	10.2	27	16.0
SIDA	1	0.9	0	0.0	1	0.6
Suspended for adverse reactions	0	0.0	1	1.7	1	0.6
Total	110	100.0	59	100.0	169	100.0

Source: Hospital Complex Clementino Fraga, 2015

Discussion

The results show that TB is a disease prevalent in the male population undergoing the aging process; especially in men aged from 60 to 69 years old, confirming other studies covering cases of the same target audience [13, 14]. Brazilian men are known, perchance, for seeking health care late in their lifes, which contributes to the lack of speed in the diagnosis of contagious diseases of control and treatment [15], such as TB.

In general, men, especially the elderly, are noted to seek fewer health services than women, and when they access them, they are already at an advanced stage of the disease. This way, there is involvement of treatment, increasing the spread of the bacillus, becoming something even more concerning to the public health of the country. Therefore, from the proven increased susceptibility of man to the development of TB, the creation of control measures for disease articulated to the peculiarities of the male individual is essential [16].

In this context, it's advisable to consider factors such as the mismatch between working hours of PHC services and male working hours, beyond the perception of invulnerability to illness, which are among the main hinderers of access to health for the male audience [17]. Another Compromising issue is the shortage of professionals, programs or campaigns related to men's health, although there is already a targeted policy to do so. Moreover, the ambience of PHC services back predominantly to attention of children and women's health, encouraging the feeling of not belonging, to men [17].

From this point of view, health education practice appears as an effective alternative for the transformation of male attitude in caring for the health and must necessarily encompass social and gender issues, so as to try to reach the target population in its essence [18]. Film screenings, lectures, conversation circles, groups and individual consultations defies people to rethink their lifestyle in relation to personal care, addictions and customs and also raises health promotion and disease prevention, enabling, in the case of TB, adherence to treatment. Moreover, these strategies aim to add knowledge and answer questions, with the objective to dispel the stigma surrounding this morbidity [16].

The lifestyle, the type of work and the way of living interfere significantly in the person's health. The carrying out of activities aimed at improving the condition of work, housing, education and leisure ensure a favorable aging process in both sexes [19-20]. And at this juncture, the positive health concept stands out, which comes from social production linked to quality of life. In a way that it expresses itself as something that has been accumulated or dissipated throughout the years, considering the constant variation in social inequality [21].

It is alleged that one of the obstacles encountered for maintaining the quality of life is related to

poverty, which may be associated with low literacy rates and poor access to health services. Likewise, the type of institutionalization the elderly is placed, the lack of a healthy family relationship, loss of autonomy, financial difficulties, smoking, obesity, hypertension, diabetes and dyslipidemia are other factors that can trigger infectious diseases such as the TB [20]. The people who grow old have their diagnosis hampered because of these comorbidities that affect the immune system, leaving them susceptible [22].

The Civil situation could be directly allied to the fact that the individual does not have a conventional family foundation, which certainly implies the vulnerability of these to TB in psychosocial stress conditions. One of the alternatives found is that of strengthening the support network, which is essential for the recovery of patients, because it helps to overcome the side effects of drug therapy, self acceptance of being a patient and also in the social integration of the elderly, ensuring better quality of life [23]. Studies complement that the absence of the support network may result in increased institutionalization, being important to emphasize that this reality configures risk for TB in the elderly, with regard to exposure to bacillus, agglomeration of people, among others [24].

Considering most seniors live in distinct ways, each with their customs, lifestyle and traditions, as they are institutionalized, are conditioned to accept rules and standards of the premises. For this reason, in general, they cannot adapt, leading to social isolation, depression, making them saddened and in need of attention and support. It is noticed that, instead of contributing, the institutionalization, in practice, refers to negative stereotypes, such as rejection and lack of family commitment, creating a paradox between what is desired and the reality experienced [25].

Currently, most Long-Term Institutions (LTI's) are struggling to provide care for the elderly [26]. Among the problems encountered, the lack of registration of the institutionalized is highlighted, demonstrating possible flaws in the information system. Therefore, this service requires efficient measures of organization, to enable human resources for the collection of information, in a way that leaves them substantially reliable.

Socioeconomic indicators related to "education" confirm studies already done, as they reveal that the low level in education interferes directly to increased vulnerability to TB. It is emphasized that social inequities are often the result of a poor education and/or lack of it [23].

As for the "type of referral", it was found that many of the elderly have not been referenced by the PHC service. This fact is a mischaracterization of the actions recommended by the Ministry of Health to control TB. The option in looking for units of secondary care (polyclinics, Psychosocial Care Centers and Emergency Medical Services) and tertiary (hospitals) is notably higher than the search for assistance in Family Heath Units and the Basic Units of Health. The fact is validated by research reports when they state that the search for hospitals is a priority, demonstrating that, in relation to TB, the PHC system goes through a precarious process, not falling under the principles that the NHS recommends [27].

Therefore, the present study confirms the data presented by authors who reveal the importance of management in investing in professional apparatus of health services, especially those of PHC level. The user's search for the service is related to the geographic location of the health facility, and in particular the provision of professionals, those existing on units of average and high complexity, which make up spaces of resolutive practices and integrated care [28]. Furthermore, the guidance of users to polyclinics and demand for specialized care and quality triggers a significant problem in the management area of health services, as it establishes a reflection of the disruption of the rights of users and the bonds that they should establish the unit of origin [29].

Such findings could signal weaknesses of PHC services as for the capitation of the elderly who are

suspected to have TB or are sick, restating the interfaces that permeate the late diagnosis of TB. This problem aggregates to the debilities of public health services, characterized as being one of the crucial factors for the constancy of the disease, especially in the elderly population. Studies show that, often, the user needs to turn to the care units for up to more than three times in order to be consulted and then diagnosed [30]. The delay in diagnostics is a result of the lack of trained professionals to perform this function - above all, the suspicion of cases- such as the unavailability of diagnostic techniques, portrays significant failure in the health system, specifically in the PHC, as it is their responsibility to care for TB [31].

Overcrowding in the reference is one more this deficiency, since most patients seek out hospitals on their own, when many of them could have been diagnosed and treated in the PHC services. In light of this, the relevance of strategies that seek changes in health care in the context of TB, aspiring professionals and quality of care is highlighted [32].

The lack of referral reflects that there was no active search for symptoms addressed to the elderly, stating that the service remains flawed. In regard to this, the present study backs up other authors [8] when they report that the active search for symptomatic elderly occurs passively, that is, the user perceives a sign or symptom of the disease and seeks spontaneously the service, demonstrating the oversight of the health team and the lack of planning of disease control measures. This way, it is believed that the implantation of a new strategy of approach is imperative to revert the situation and decrease new cases that insist on appearing.

The diagnosis of TB is preceded by suspicion of the case through the symptoms, it is vital that health professionals investigate the patient as well as the classic manifestations of pulmonary TB found in the literature, such as "persistent cough, productive or not (with mucus and eventually blood), evening fever, night sweats and weight loss "[13].

As for the "signs and symptoms" of the elderly, cough (most prevalent), weakness, weight loss and anorexia, stood out as being similar to results found in studies that had already been published [33]. According to findings, it was found that cough and fever were identified in the elderly of this study. It is believed that a distention of the professional or a devaluation of the classic symptoms of TB in relation to user age is occurring, stressing that the infection in these individuals is much more complex as a result of existing comorbidities.

It is indispensable to cite that among the aggravations associated, "alcoholism" was the predominant variable among the individuals of male sex. This result can be justified by the fact that man are more exposed to risk factors, such as the consumption of alcohol, drugs and cigarettes, making them more vulnerable. Therefore, in order to avoid the worsening of the disease, a multidisciplinary team is cogent in these cases, since it puts into practice activities that encourage you not to give up the treatment and one of them is precisely the Directly Observed Treatment (DOT) [34]. Possessing a transformative character for both the user and the professional, concomitantly, in subjects and objects of intervention, the DOT, in the elderly's case, enables faster identification of signs of improvement and bigger vulnerability to abandonment [35] and also opens a range of opportunities that raise awareness and sensitize relatives to the value of being involved in the treatment.

The "cigarette smoking" was another variable which has become common. It is known that smoking is common among TB patients and often encourages non-acceptance and to promote the dropout of drug therapy [33]. Studies legitimize smoking as something directly associated with discontinuation of treatment by patients. This way, it's crucial to signal the importance of professionals to reorient people in order to enlighten them as to the treatment, the time of use of the treatment

drug, the likely adverse reactions and the care that should be taken in the therapeutic process, in order to avoid obstacles hinder the recovery [36].

As for aggravations associated, diabetes mellitus was significant to the results of this study and something rarely explored in literature is the relationship between this morbidity and TB. It is known that the presence of this chronic disease causes serious damage to the health of people, especially the elderly. It is understood that the high blood glucose levels and reduction of insulin by the pancreas block the individual's immune system, leaving them susceptible to infections. It is documented in literature that people with diabetes are more likely to develop drug resistance in the therapeutic process of TB [37].

Considering the evolution of TB, this research came across the same scenario worldwide, that is, high rates of new cases as the entry type. Thus, to reduce them, it's necessary to establish a way of identifying the needs and activities of each place, incentivizing the tuberculosis control program (TBCP) to work in the active search for respiratory symptoms and locate the population at risk that is latent. So, paying attention to the variable situations "relapse" and "return after dropping out" is essential, as there is a possibility of the individual to develop multidrug resistance to antibiotics [38].

Among the existing weaknesses, it is pointed out that the high dropout rates motivated the failure of therapy, which concurs with the findings of this series, which obtained the cure rate lower than that recommended by the World Health Organization (WHO) and dropout rates and higher mortality [39]. The percentage related to the dropout rate was almost three times higher than the percentage rated acceptable by WHO. This information reflects the convenience of putting into practice actions that wish to reduce or prevent high dropout rates. Added to this is the DOT which is a very important method for patient adherence to treatment, since its insertion allowed a higher quality of patient care, especially in regard to the link of the patient with the professional [40].

From this perspective, of perceiving the elderly in their uniqueness, reflecting the results that care to this target audience should be (re) thought from the academic to the professional processing; (Re) articulated in relation to the entry door system, the services offered and the public health system and (re) signifying care practice in order to improve it. Thus, the Nursing should star a care that goes beyond physical, embracing social, political and gender causes [18].

Conclusion

Given the findings of this research, it is essential to rethink the care for the elderly and redesign the coping strategies of the disease, especially in the field of PHC services. From the perspective of comprehensiveness, should both professionals as well as health managers, serve from the already accumulated knowledge to support practices based on humanization and the citizen's right to health, according to the peculiarities and needs presented.

It is noteworthy that the lack of referrals made by the PHC service and considerable spontaneous search for higher level of complexity services manifest the existence of a disruption in system operation, as well as the absence of the old bond with BFHU. It adds that the factors mentioned, originate the delay of diagnosis and even cases of disease recurrence. Therefore it stresses the relevance of strategies that aim for a conversion in health care assistance in the context of TB, aspiring professionals and quality service.

It is inferred, therefore, that the preparation of this study be a starting point for changing the look of society, professionals and management services about TB in the elderly. From this viewpoint, the idea is that a new reflection appears outlined by the health care of the elderly, rethinking strategies

to include not only the patient himself, but the human being holistically, recognizing their universe and their limitations for therapeutic effectiveness.

Is it relevant for Nursing that the results be a substrate to propose improvements in the care of the health service, allowing consultation recrudescence performed by nurses and aimed to the elderly as well as adjustments in the treatment, turning it essentially to the peculiarities of this audience.

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