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Analysis of the work scenario and care for patients with leprosy in times of the Covid-19 pandemic: An evaluative study from the perspective of the health professional

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ABSTRACT
This study aimed to analyze the impact of the Covid-19 pandemic on leprosy care from the perspective of health professionals. This is a descriptive, cross-sectional, service evaluation study using a printed questionnaire, aimed at medical health professionals, nurses and physiotherapists. The study was carried out with 17 health professionals, 7 nurses, 7 physicians and 3 physiotherapists belonging to 7 primary care health units in a municipality in Pará. It was observed that only 24% of the professionals interviewed underwent sector relocation, 82% of professionals said that there were changes in the service profile of the health units, there was a need to reschedule care for patients, 88% of professionals underwent rotation of activities, 47% said there was a lack of medication for the treatment of leprosy in the units where they work, 53% said there was no lack of materials for the care of leprosy patients, there were difficulties in scheduling laboratory tests, in the evaluation of home and social contacts and in the referral and counter-referral of patients. From these data, it is concluded that the Covid-19 pandemic created difficulties for the care and treatment of patients with leprosy in participating primary health care units, causing delays in appointments, rescheduling of appointments, extensions of treatment due to lack of medication, difficulties in evaluating contacts and active search for new cases, contributing to generate a negative impact on the program and consequently on the health system.

Keywords: Leprosy, Covid-19, pandemic, health professionals.

1 INTRODUCTION

Leprosy is a chronic infectious disease caused by *Mycobacterium leprae* that mainly affects the skin and peripheral nerves and has a slow and chronic evolution (Brasil, 2017).

It has a high disabling, stigmatizing power and with a historical past of discrimination and isolation and is among the basic and associated causes of death in the country, despite the unmeasured existence of underreporting, affecting mainly men, illiterates and the elderly (Ramos, Ferreira and Ignotti, 2016).

Brazil is one of the countries with the highest number of new cases of the disease. In 2016 the detection rate in the general population was 12.23 and of these, 0.84 were detected with grade II deformity. The percentage of cure in the cohort in 2017 stood at 76.72% (Brasil, 2018).

Studies on leprosy in children under 15 years of age in Brazil demonstrate the need for a better targeting of public health policies for the epidemiological surveillance of leprosy in this age group, contributing to the understanding of the endemic behavior of leprosy in the study sites.

Despite the low lethality and low mortality of the disease, leprosy in children when diagnosed late can cause psychological sequelae of difficult treatment, directly impacting the future of these users and their social relationships (Freitas, Cortela and Ferreira, 2017).

Polychemotherapy (PQT) is the main strategy for disease control. Three decades after the introduction of the treatment, there is a significant reduction in the prevalence of leprosy cases in Brazil and worldwide.

And, although there has been an improvement in the care of assisted cases of leprosy, with a consequent reduction in its incidence, the disease remains a public health problem in some countries (WHO, 2017).

The analysis of leprosy indicators allows us to portray, within a certain context, the reflection of the care network provided by the service network through the measurement of variables and comparison of parameters that translate into a diagnosis of the situation analyzed.

For example, in 2016 the state of Mato Grosso presented a detection rate of 80.62, of which 3.05 were with grade II deformity, presenting a percentage of cure in 2017, for the cohort years, of 72.26% (Brasil, 2018).

The above data demonstrate that the presence of the disease and the force of recent transmission of the endemic disease is still high in the state, with an oscillating trend over the years, being six times higher than the national average, and in many cases the diagnosis is made late, generating sequelae that are sometimes irreversible and that directly interfere in the quality of life of the patient.

The cure rate is close to the national average, but it is worth mentioning that in Mato Grosso the situation of leprosy is a serious public health problem demonstrating fragility in the evaluation of contacts and early diagnosis of the disease, and the abandonment is also higher than the national average.

In this context, too, quality of life should be seen as a social and health indicator capable of measuring the impact of public policies on the life of the population. It is observed that leprosy can negatively influence the quality of life of patients with the disease, affecting mainly the physical and psychological domains, especially when there is chronicity of the disease.

Thus, the physical domain has a direct influence on the patient's work and daily activities, while the psychological domain portrays the way the patient sees himself and relates to the interactional aspects with the environment and with the other, which can cause his own segregation with isolation and even cause depressive manifestations (Leite, Arruda, Vasconcelos, Santana. & Chiana, 2015).

In addition, Magalhães and Rojas (2007) describe that the factors related to the occurrence of leprosy are associated with the spatial distribution and can be grouped, in general, in natural and social factors, being the natural factors the climate, relief, vegetation types and certain ecosystems; Social factors include unfavorable living conditions, malnutrition, migratory movements, among others.

Negrão, Vestena and Borecki. (2017) report that the adaptation and evolution of the microorganism, it is possible to be occurring selective pressure and development of resistance, where ecological changes associated with deforestation, inadequate drainage of rainwater, periodic floods, floods and flooding may be contributing to the maintenance of the cycle within the urban perimeter.

Magalhães and Rojas (2007), suggest the need for microenvironments favorable to the existence and survival of the pathogen, as well as other factors conducive to its transmission.

Coronaviruses (CoVs) belong to a family of single-stranded zoonotic RNA viruses of the *coronavidae family,* which cause respiratory syndromes. The novel coronavirus, dubbed SARS-CoV-2, which causes the COVID-19 infection was first detected in China in the city of Wuhan on December 31, 2019.

It is a disease of rapid spread, which has spread to several countries of the world causing numerous impacts and high rates of morbidity and mortality never seen in recent centuries.

As of May 13, 2020, more than 4 million cases of the disease and more than 283 deaths related to the disease have been identified, declared in January of the same year by the World Health Organization (WHO) as an epidemic of international emergency and later, in March, as a pandemic of great repercussion (Zimmermann and Curtis, 2020) (Lana et al., 2020) (Xavier, Silva, Almeida, Conceição, Lacerda and Kanaan, 2020).

The clinical manifestations of SARS-CoV-2 are characterized mainly by respiratory and gastrointestinal symptoms, may be presented by a common to severe cold, bronchitis, pneumonia, severe acute respiratory distress syndrome (ARDS), coagulopathy, multiple organ failure, and may cause death.

However, the disease caused by this virus produces different impacts when observed the age group, in children the manifestations of covid-19 usually present in the less severe form when compared to adults (Zimmermann and Curtis, 2020).

The Covid-19 pandemic has caused several municipalities to overcrowd their health services and to direct services and staff to care for cases of infection of the novel Coronavirus.

The perception of quality in health encompasses several perspectives, including the clinical and the population.

The clinical perspective is concerned with the impact of professionals on the health of users. The population perspective is concerned with the impact of health on the reduction of disparities in the health of population subgroups (Starfield, 2002).

The Brazilian health system has a great challenge, which is to maintain the quality of leprosy services and ensure that all people affected by the disease, regardless of where they live, have an equal opportunity to be diagnosed and treated by competent and trained health professionals. For this challenge to be translated into actions and services, it is necessary to minimize barriers that hinder the population's access to services and ensure inputs, materials and other tools necessary for the development of the actions of the leprosy program in all Brazilian municipalities, with each federative entity having its share of contribution in this process (Opromolla and Laurenti, 2011).

The very historical context of leprosy causes it to be perceived by users as something bad, which generates sadness, loneliness, fear and shame.

The reports of patients point to a history of social discrimination within the family context and/or the group of friends, generating disharmony and instability that result in psychological suffering (Nunes, Oliveira and Vieira, 2008).

For Lanza, Vieira, Oliveira and Lana (2014), evaluating leprosy is extremely important because it is a priority disease in Brazil's health policy, requiring actions aimed at strengthening the performance of PHC in its control and quality of the services offered.

It can be seen, through the searches carried out in the database and the published studies, that the researches related to the quality of the health care provided to children and adolescents with leprosy still occur in a timid way, being necessary greater investments in this type of study in order to establish parameters for the improvement of the care provided to this clientele and consequently to promote improvements in their quality of life.

In view of the neglecting factor of leprosy as a disease in health services, this study aimed to analyze how the pandemic of the new Coronavirus has been impacting leprosy care in the municipality of Parauapebas, state of Pará.

2 METHODOLOGIES

2.1 CHARACTERIZATION OF THE STUDY

This is a cross-sectional, descriptive service evaluation study. For Minayo (2005) the health evaluation cannot be seen as an isolated event, since it consists of work processes that integrate evaluators and evaluated in the search for improvements to the service or program evaluated, aiming at greater efficiency and effectiveness in the actions developed.

As well as the quality of life and environmental conditions related to the disease, due to the scarcity of these investigations can contribute to a better understanding of the disease in this most vulnerable population.

2.2 CHARACTERIZATION OF THE RESEARCH SITE

The research was conducted in the city of Parauapebas-Pa. Parauapebas is a municipality in the state of Pará in the Northern region of Brazil. It is located in northern Brazil, 719 km from the capital Belém (IBGE, 2021).

2.3 TARGET POPULATION

The target population of the study was composed of health professionals, physicians, nurses and physiotherapists who work in the health units that treat leprosy cases.

The study included physicians, nurses and physiotherapists, working in primary care units, referral centers or other places that follow cases of leprosy patients.

Physicians, nurses and physiotherapists working in hospital units, hospitalization or who provide only care to leprosy cases without proper follow-up were excluded from this study.

2.4 DATA COLLECTION PROCEDURES

Data collection was performed through the delivery of structured questionnaires, composed of 14 closed questions, with alternative answers YES, NO and DO NOT KNOW HOW TO INFORM/DO NOT REMEMBER/DOES NOT APPLY. The questionnaires were delivered to 10 primary care health units in the municipality.

The variables used relate to the sociodemographic characteristics of health professionals as well as the characterization of the professional profile and the health service to which they are linked. Data regarding the care provided by the health professional and the structure of the service during the current pandemic were mapped.

All participants signed a 2-copy Free and Informed Consent Form (ICF), one with the deponent and the other in the researcher's file.

2.5 DATA MANAGEMENT AND ANALYSIS

For the statistical analysis, the Excel program was used. Descriptive analyses were used in order to portray the proposed objective as reliably as possible.

2.6 ETHICAL ASPECTS

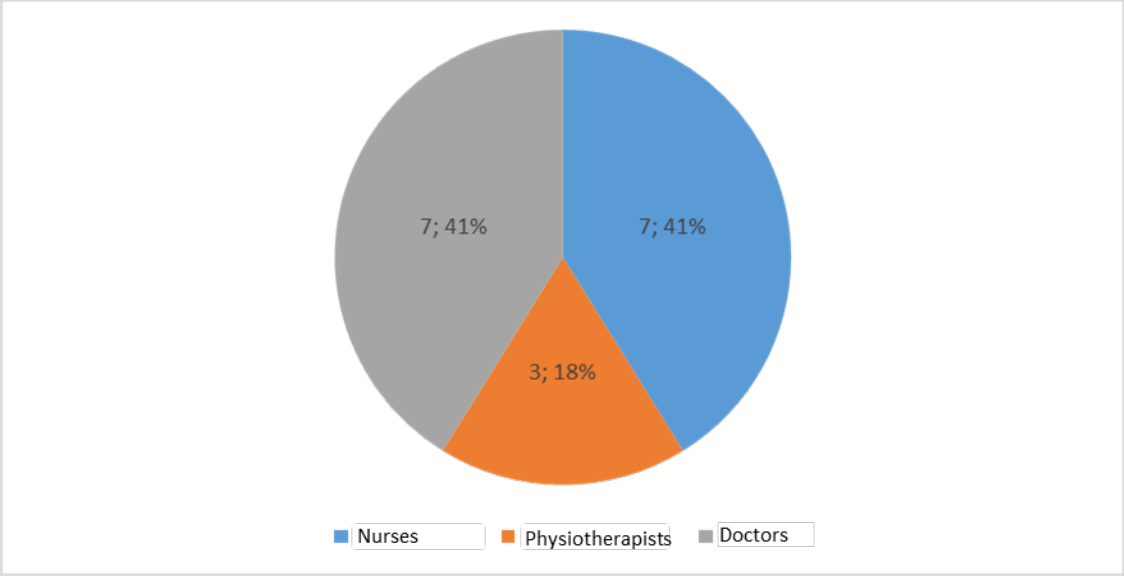
The present study adopted all the established norms for research with human beings as recommended by the resolution of the National Health Council – CNS nº 466/12, being submitted, appreciated and approved by the Research Ethics Committee of the Universidade do Estado do Pará, Campus XII-Tapajós, with opinion nº: 4.660.685, CAAE: 44032921.0.0000.5168.

3 RESULTS

In the data collection instrument, several variables were used that were able to measure the effect of the Covid-19 pandemic on the functioning of the leprosy program and on the care provided to the user of the program.

The study sample was composed of 17 health professionals working in PHC health units. In total, 46 data collection instruments were distributed, 25 for nurses, 5 for physiotherapists and 16 for physicians, representing 10 PHC units. Of the total respondents, 41% (7) are nurses, 18% (3) are physiotherapists and 41% (7) are physicians, working in 7 health units of the total PHC units that were invited to participate in the study, as shown in graph 01.

Graph 01: Characterization of the sample of health professionals participating in the study - Parauapebas-Pa, Brazil, 2021.



Source: Data collected by the author.

Table 01 presents the other variables of the study, as well as their division by professional category and the total of aggregated responses as detailed.

Regarding the relocation of health professionals from their units of origin during the Covid-19 pandemic, the present study showed that, among the interviewees, only 04 (24%) professionals were relocated from sector or activity during this pandemic period, and 13 (76%) of the professionals continued to perform their activities in their health units of origin since the beginning of the pandemic.

Regarding changes in the care profile of PHC health units during the Covid-19 pandemic, the health professionals interviewed mostly reported that there were changes in this period 14 (82%).

It is observed that among all groups of professionals, both nurses, physicians and physiotherapists, most reported having undergone a change in the profile of care. It is worth mentioning the physiotherapists in which 100% (3) of the interviewees changed their service profile

The need for rescheduling of appointments for leprosy patients in PHC health units during the Covid-19 pandemic, all groups of professionals reported that for some reason patients needed to reschedule their appointments, as detailed by 4 (57%) of the nurses, 2 (67%) of the physiotherapists and 3 (43%) of the doctors.

It is also noteworthy the number of interviewees who did not know whether or not there was a need to reschedule appointments. Of the total respondents, 5 (29%) did not know how to answer this question.

Regarding the rotation of professionals in PHC health units during the Covid-19 pandemic, it is observed that most professionals reported having undergone this type of scale modality during the pandemic, corresponding to a total of 15 (88%) deponents.

Those who reported not having gone through rotation of professionals add up to 1 (6%) and those who did not know how to inform correspond to 1 (6%).

Among the professionals who most underwent rotation were the physicians where 100% of the interviewees said they had gone through this type of scale.

Regarding the lack of medicines for the treatment of leprosy in this period, 47% (8) of the sample answered that at some point in the Covid-19 pandemic there was a lack of medicines for leprosy patients.

The number of interviewees who answered not knowing this information was also significant, representing 6 (35%).

Regarding the lack of materials for the care and treatment of patients with leprosy in this period, most of the interviewees 9 (53%) stated that there was no lack of materials in this period. Only 3 (18%) interviewees stated that at some point during the pandemic there was a lack of materials for leprosy, while 5 (29%) said they did not know about such information

Regarding the difficulty in scheduling laboratory tests necessary for the treatment of leprosy, most nurses 6 (86%) stated that the patients presented some degree of difficulty in this process, while 4 (57%) of the physicians stated that there was no difficulty in scheduling.

Regarding the total number of professionals, 8 (47%) stated that there were difficulties in scheduling during the pandemic, 5 (29%) stated that there were no difficulties in scheduling and 4 (24%) did not know how to inform.

When asked if there was training on the clinical management of leprosy during the pandemic, 10 (59%) of the professionals, representing the majority, stated that there was no training in this period, while 5 (29%) said they had undergone some specific training for leprosy during this period, especially physical therapists.

Regarding the implementation of educational campaigns for the prevention and care of leprosy, 8 (47%) of the interviewed professionals did not know how to answer this question. On the other hand, 6 (35%) stated that there was an educational campaign for leprosy.

Regarding the evaluation of household and social contacts of leprosy patients, 7 (41%) of the interviewees stated that this type of evaluation occurred normally, while 6 (35%) of the professionals stated that the pandemic interfered in the evaluation of these contacts.

Regarding the active search for cases in the community, 5 (29%) of the professionals stated that they performed an active search, 7 (42%) stated that they did not perform an active search and 5 (29%) did not know how to inform about the occurrence of this event.

Regarding the follow-up of the supervised dose of treatment for leprosy during the pandemic, most professionals 12 (70%) stated that there was follow-up of this type of treatment.

Regarding the procedures for referral and counter-referral of leprosy patients to other services, 11 (69%) of the professionals stated that they found some difficulty in this type of patient management.

Table 01: Distribution of health professionals' responses in relation to study variables – Parauapebas-Pa, Brazil, 2021.

VARIABLE	NURSES			PHYSIOTHERAPISTS			DOCTORS			TOTAL		
	S	N	NSI	S	N	NSI	S	N	NSI	S	N	NSI
Need for relocation of professionals in sector or function	1	6	-	1	2	-	2	5	-	4	12	-
There was a change in the profile of care in the Primary Care unit	5	1	1	3	-	-	6	1	-	14	2	1
There was a need to reschedule appointments for leprosy patients in the Primary Care Unit	4	1	2	2	-	1	3	2	2	9	3	5
There was a rotation of professionals in the Health Unit	6	-	1	2	1	-	7	-	-	15	1	1
Lack of medications for the treatment of leprosy	4	1	2	1	-	2	3	2	2	8	3	6
Lack of materials for the care and treatment of leprosy	3	2	2	-	2	1	-	5	2	3	9	5
There were difficulties in scheduling laboratory tests	6	-	1	-	1	2	2	4	1	8	5	4
There was training on the clinical management of leprosy	2	5	-	2	-	1	1	5	1	5	10	2
Educational campaigns on leprosy were carried out	1	1	5	1	-	2	4	2	1	6	3	8
There was evaluation of household and social contacts	3	3	1	1	0	2	3	3	1	7	6	4
Active search for cases in the community	1	5	1	2	-	1	2	2	3	5	7	5
Supervised dose monitoring	6	1	-	3	-	-	3	-	4	12	1	4
Difficulties in the referral/counter-referral of the patient	6	1	-	2	-	1	3	1	3	11	2	4

Source: Data obtained by the author. Caption: S: yes; N no; NSI did not know how to inform.

4 DISCUSSIONS

When comparing the number of research instruments distributed by group of professionals, it is observed that there was a great adherence of physical therapists, followed by physicians.

Although the largest number of questionnaires were distributed to nurses, they proportionally presented the lowest response rate.

This can be justified by the numerous activities developed by these professionals who have an overload of service (Hunter; Brito; Moreira, Rezende and Vilela, 2015).

In the present study, a low rate of redeployment of health professionals in the units surveyed was observed, although recent studies and the main headlines of the country report that in this pandemic period it was common to redeploy doctors, nurses and physiotherapists to other functions (Beraldo, 2020) (Clementino et al, 2020).

It was observed in this pandemic period that a large part of the health services, both in primary health care and at the hospital level, have undergone changes in the profile of care and restructuring of services in order to contemplate in addition to the inherent basic activities, also the patients affected by Covid-19 and its complications (Bergallo, 2020) (Jardim et al, 2021).

The cancellation of appointments during the pandemic and its consequent need to reschedule the planned appointments generate great inconvenience in the follow-up and follow-up of patients with chronic or long-term treatment diseases such as leprosy.

This fact can lead to complications such as worsening of the patient's health status and the development of reactions and sequelae (Santos Silva, 2021).

Regarding the rotation of professionals, the Covid-19 pandemic has created a scenario of remote work, definitions of essential activities and etc.

In relation to health professionals, what was observed was an increase in work overload with reductions in rest periods, an increase in the workload of activities and an increase in the demand for care (Heliotério, Sousa Lopes and Carvalho De Sousa, 2020).

These data corroborate the findings of this study, since most of the interviewees stated that they had not rotated activities or services.

In this study, a large part of the professionals experienced the lack of medicines for the treatment of leprosy in primary care health units during this pandemic period.

There were frequent headlines in newspapers and news reports that Brazil was experiencing a shortage of leprosy drugs during this period.

The lack of medication leads to several other problems such as the prioritization of patients, the setback in the control of the disease, the increase in transmission and the difficulty in diagnosis (Neves, 2021).

On the other hand, most of the study participants stated that they had not witnessed the lack of materials for the care and treatment of leprosy patients.

These materials include saline, urea-based moisturizers, eye drops for tear replacement, sunscreen among others.

It is coherent to think that these materials were not lacking as often as the medication because they were acquired by the municipality itself and did not depend on sending by the federal government via the Ministry of Health.

The overload of tests for the diagnosis and treatment sequence of Covid-19 has had a ripple effect on routine screenings for various diseases treated at the outpatient and health facility level.

With this, there was a difficulty in scheduling tests for leprosy, diabetes, hypertension and other diseases since the priority in this period were the tests for the treatment and diagnosis of Covid-19.

Demand increased, but most of the physical, material and human resources structures were not provided with an increase in their dimensioning (SBOC, 2020).

In addition to all these losses, the pandemic has brought with it a reduction in the number of training courses for leprosy management and in the realization of educational campaigns. This leads

to a drop in diagnosis rates and an increase in the stigma of the disease since there is a shift in focus where Covid-19 is prioritized over other diseases that also plague the country (Siqueira, 2021).

The prioritization of the pandemic has also somewhat reduced the assessment of household and social contacts and the active search for new cases in the community, since many services have changed the profile of care in this period.

This, together with the reduction of campaigns and educational activities contribute to a future increase in the rates of detection and transmissibility of the disease (Bergallo, 2020) (Jardim et al, 2021) (Siqueira, 2021).

Despite so many losses, the study showed that the monitoring of the supervised dose in the treatment of leprosy continues to be done without changes in most health units, as long as there is availability of the drug.

The supervised dose has a great importance in the treatment of leprosy and is considered a quality factor in the evaluation of the program (Mantellini, Gonçalves and Padovani, 2019).

The difficulties encountered in referring and counter-referring leprosy patients to other services is also justified by the change in the profile of care provided by health units.

As a result, access to referral services was compromised due to care for Covid-19, the need to redeploy professionals, remote work and other specificities brought by the pandemic (Bergallo, 2020) (Jardim et al, 2021).

This study has as a limitation the fact that the sample was small, although it managed to reach a representative number of health units.

It is necessary that new studies be carried out, with a larger sample and also involving other municipalities, in a multicenter format, thus allowing a better picture of this analyzed situation

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5 CONCLUSIONS

From this study it was observed that the Covid-19 pandemic created difficulties for the care and treatment of leprosy patients in the health units of primary health care in Parauapebas, generating delays in scheduling, rescheduling appointments, treatment extensions due to lack of medication, difficulties in evaluating contacts and active search for new cases, contributing to generate a negative impact on the program and consequently on the health system.

The reduction in training and educational campaigns contribute to generate a feeling of insecurity in health professionals who deal with leprosy on a daily basis.

Thus, the impact of Covid-19 on the care of the leprosy patient will not only be a one-off and transient problem since it will still be possible to feel the effects of these long-term consequences.

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