

Can the directly observed treatment for tuberculosis be replaced and still be successful in treatment?

¿Se puede reemplazar el tratamiento directamente observado para la tuberculosis y aún así tener éxito en el tratamiento?

O tratamento diretamente observado para tuberculose pode ser substituído e, ainda assim, obter sucesso no tratamento?

Eunice Maria Pereira Côrtes¹

ORCID: 0000-0002-0353-4257

Wenderson Bruno Herculano da Silva¹

ORCID: 0000-0001-5288-4264

Michelle Amorim Ferreira¹

ORCID: 0000-0001-5585-4925

Carolini Moreira Mattos¹

ORCID: 0000-0002-3139-9419

Paulo Roberto Ferreira Machado¹

ORCID: 0000-0003-3578-6907

Tatiana Araújo de Lima¹

ORCID: 0000-0001-8930-0672

Cristiano Bertolossi Marta¹

ORCID: 0000-0002-0635-7970

Milton Domingues da Silva Junior¹

ORCID: 0000-0003-1163-9005

¹Universidade Veiga de Almeida.
Rio de Janeiro, Brazil.

How to cite this article:

Côrtes EMP, Silva WBH, Ferreira MA, Mattos CM, Machado PRF, Lima TA, Marta CB, Silva Junior MD. Can the directly observed treatment for tuberculosis be replaced and still be successful in treatment? *Glob Acad Nurs.* 2021;2(1):e74.
<https://dx.doi.org/10.5935/2675-5602.20200074>

Corresponding author:

Eunice Maria Pereira Côrtes
E-mail: eunicempc@gmail.com

Chief Editor: Caroliny dos Santos
Guimarães da Fonseca
Executive Editor: Kátia dos Santos
Armada de Oliveira

Submission: 01-12-2021

Approval: 01-18-2021

Abstract

The aim of this study was to verify the effectiveness of the application of telemonitoring for monitoring the treatment of patients with TB, according to the nurse's view. A qualitative and quantitative study was carried out in a UBS located in the North Zone of Rio de Janeiro, where 10 professionals (including nurses and nursing residents in their second year of professional residency) evaluated TB treatments underway during the pandemic. Bardin's content analysis was applied in this study. There were different perceptions about this tool used to monitor these patients. It was possible to realize that telemonitoring can be applied as an ally for monitoring patients undergoing treatment for chronic diseases, especially those who have difficulties accessing face-to-face care, although it should be mentioned that there is a certain loss of quality in care because this method does not allow observe information that is not verbalized by the patient.

Descriptors: Primary Attention; COVID-19; Pandemic; Telemonitoring; Tuberculosis.

Resumén

El objetivo de este estudio fue verificar la efectividad de la aplicación de la telemonitorización para el seguimiento del tratamiento de los pacientes con TB, según la opinión de la enfermera. Se realizó un estudio cualitativo y cuantitativo en una UBS ubicada en la Zona Norte de Río de Janeiro, donde 10 profesionales (entre enfermeras y residentes de enfermería en el transcurso de su segundo año de residencia profesional) evaluaron los tratamientos de TB en curso durante la pandemia. En este estudio se aplicó el análisis de contenido de Bardin. Hubo diferentes percepciones sobre esta herramienta utilizada para monitorear a estos pacientes. Se pudo constatar que la telemonitorización se puede aplicar como un aliado para el seguimiento de los pacientes en tratamiento por enfermedades crónicas, especialmente aquellos que tienen dificultades para acceder a la atención presencial, aunque cabe mencionar que existe una cierta pérdida de calidad en la atención. porque este método no permite observar información que no sea verbalizada por el paciente.

Descriptores: Atención Básica; COVID-19; Pandemias; Telemonitorización; Tuberculosis.

Resumo

O objetivo deste estudo foi verificar a efetividade da aplicação do telemonitoramento para o acompanhamento do tratamento dos pacientes com TB, segundo a visão do enfermeiro. Foi realizado um estudo qualiquantitativo desenvolvido em uma UBS alocada na Zona Norte do Rio de Janeiro onde 10 profissionais (entre enfermeiros e residentes de enfermagem no curso de seu segundo ano de residência profissional) avaliaram os tratamentos para TB em curso durante a pandemia. Foi aplicada a análise de conteúdo de Bardin neste estudo. Houveram percepções distintas sobre esta ferramenta utilizada para o acompanhamento desses pacientes. Foi possível perceber que o telemonitoramento pode ser aplicado como aliado para acompanhamento de pacientes em tratamento de doenças crônicas, sobretudo aqueles que possuem dificuldades de acesso ao atendimento presencial, embora deva-se citar que há certa perda de qualidade no atendimento pois esse método não possibilita observar informações que não sejam verbalizadas pelo paciente.

Descritores: Atenção Básica; COVID-19; Pandemias; Telemonitoramento; Tuberculose.



Introduction

The disease caused mainly by *Mycobacterium tuberculosis* (also called Koch's bacillus) takes the place of infectious disease with the highest mortality rate in the world, according to the World Health Organization (WHO), even surpassing AIDS¹.

Its most common presentation is pulmonary and contamination occurs through the inhalation of bacilli released into the air through coughing, sneezing and speech of the person sick with active pulmonary or laryngeal tuberculosis (TB). There is an estimate by the Ministry of Health (MH) that an infected patient can infect 10 to 15 people over a year^{1,2}.

Treatment occurs through combined and prescribed antibiotic regimens according to bacillary metabolism. It has a minimum duration of six months with daily use of antibiotic therapy defined for each case. In general, after 15 days of treatment the individual is no longer bacilliferous, which means that he is no longer able to transmit the disease².

WHO defines Primary Health Care as being the first level of access to the health system and although it takes care of people, observing individuals holistically and not acting only in search of the cure and / or treatment of the disease, but acting for health promotion as well as disease prevention¹.

In Brazil, Ordinance No. 2488/2011 approves the National Primary Care Policy, adjusting and rectifying the procedures applied for the Family Health Strategy (FHS) as well as for the Community Health Agents Program (PACS)³.

Its main characteristic is since the individual is observed for his uniqueness and for considering the socio-cultural environment in which he is inserted. Its service and division of teams are organized according to the coverage area to establish a closer link with the assigned population and its corresponding multidisciplinary health team^{4,5}.

To favor the affinity between the population served and the health team, there is the figure of the Community Health Agent (CHA), who is usually part of the community served at the Basic Health Unit (UBS) to which it is allocated, which enables knowledge of the illnesses and pains of that community, as well as providing easy access to these individuals in addition to bringing the team's light to cases that need attention^{4,6}.

On March 11, 2020, WHO declared COVID-19 Pandemic, a disease caused by the Sars-CoV-2 virus, leading the world to adopt precautionary contact measures and on March 16, the State Government of Rio de Janeiro, recognizing the scenario experienced, established an emergency and enacted measures to favor social distance to reduce the rates of contagion and, consequently, decrease the number of cases^{4,7}.

The City of Rio de Janeiro, in line with the State Government, also adopted measures aimed at slowing down the spread of COVID-19. Among these measures was the reorganization of care provided to UBS, which continued to be the gateway to the Unified Health System (SUS), but this time the focus of care was focused on individuals who presented flu-like symptoms, being treated as suspected

cases of the disease caused by the new coronavirus. As a result, the regular assistance provided by these units had to be rethought and restructured.

In this scenario there was the implementation of a practice used by other countries and by health insurance companies in Brazil to monitor the evolution of cases of chronic and acute patients, telemonitoring⁵.

This type of follow-up consists of checking the progress of the treatment established for the patient, assessing his current health status, and classifying improvement or worsening through contacts by phone or video calls^{3,8,9}.

In this context, the objective of this study was to evaluate the effectiveness of this monitoring practice for patients undergoing tuberculosis treatment, according to the nurse's view, since practices used to enhance adherence to this therapy, such as Directly Observed Treatment (DOT), for example.

Methodology

The study is a field research with a qualitative and quantitative approach carried out in a FSH located in the North Zone of the Municipality of Rio de Janeiro and the data collection took place between the months of September to November of 2020.

Bardin's content analysis was the methodology chosen for categorizing and grouping the data collected through the instrument used to conduct the research. The stages of pre-analysis, exploration of the material and treatment and interpretation of data were followed, enabling the identification of the following categories: telemonitoring as a facilitator of creating / maintaining a bond between the team and the patient, caution in the use of a tool that enables direct contact with the patient, resistance to the applicability of telemonitoring, the use of telemonitoring to reach hard to reach locations and interference from the pandemic on the treatment of patients undergoing TB therapy¹⁰.

The unit used as the basis for this study has 13 FHS teams, composed of 01 nurse, 01 doctor and 04 CHAs per team. There is also the presence of nursing and medical residents who provide care to the population together with other professionals.

The study sample consisted of 10 nurses, among them nurses in front of the team (05) and residents in their second year of residence (R2) (05), allocated in this unit. All who agreed to participate in the research signed the Free and Informed Consent Term, in addition to obtaining explanations about the objectives of the study and the confidentiality of the data. A portion of the responses obtained, 40%, took place through a semi-structured interview previously scheduled so that there was no interruption in the Unit's service flow. Due to the period used for data collection, it was necessary to apply the instrument through Google Forms, since there was a relaxation of the isolation measures and the demand for care at the unit was becoming greater. The answers that were obtained electronically corresponded to 60% of the total.

Of the 13 teams that make up the unit, 03 were



Can the directly observed treatment for tuberculosis be replaced and still be successful in treatment?

Côrtes EMP, Silva WBH, Ferreira MA, Mattos CM, Machado PRF, Lima TA, Marta CB, Silva Junior MD

without active nurses due to sick leave or lack of hired professionals. There were 10 nurses in front of teams and 05 R2 working in the unit, but of these 15, 05 were not eligible for participation according to the exclusion criteria established for this study. The inclusion criteria consisted of: nurses working in the unit object of the study from October to December 2020 and resident nurses who are in their second year of professional residency in addition to nurses who are working in the unit to be researched for a minimum of 6 years. months before the pandemic. These criteria aimed to select professionals who knew the profile of patients on TB treatment of their team in the period outside Pandemic, as they would be able to observe differences, even if subtle, in terms of adherence to treatment and frequency of attendance at consultations. and conducting exams for control.

The ethical aspects were met with the rules of the Ethics and Research Committee (CEP) of the Municipal Health Secretariat of Rio de Janeiro (SMS / RJ) obtaining the favorable opinion (Opinion No. 4,249,184) to proceed with the research, under CAAE nº 36121520.9.0000.5279, thus

fulfilling the requirements established by the National Health Council, in Resolution nº 466/12. The execution took place only after approval by the CEP. To provide the participants' privacy, secrecy and anonymity, the initials of the profession and a sequential number according to the interviews were recorded on the back of the forms, for the answers obtained electronically, there was no record of data capable of identify the individuals responsible for each response.

Results and Discussion

In Chart 1, we can identify the sociodemographic characteristic of the nursing professionals who participated in the study and it is possible to observe the working time in the FHS, age and specialization. Through the data collected, it is possible to observe that this nursing team is composed of female workers, with an average age of 29.3 years and with an average working time in the FHS of 3 years and 9 months and specializing in family health, ongoing for the case of residents, and 30% also have expertise in other areas of Nursing.

Chart 1. Sociodemographic characterization of the sample (n = 10). Rio de Janeiro, RJ, Brazil, 2020

SOCIODEMOGRAPHIC CHARACTERIZATION			
Professionals	Age	Strategy Time	Specialization
Nurs. 1	28 years	3 years	Family Health and Medical and Surgical Clinic
Nurs. 2	26 years	3 years	Family Health and Obstetrics
Nurs. 3	26 years	2 years and 7 months	Family Health
Nurs. 4	43 years	10 years	Family Health and Occupational Nursing
Nurs. 5	32 years	4 years	Family Health
R2.1	24 years	1 year and 7 months	Family Health (ongoing)
R2.2	25 years	1 year and 7 months	Family Health (ongoing)
R2.3	25 years	1 year and 8 months	Family Health (ongoing)
R2.4	30 years	1 year and 8 months	Family Health (ongoing)
R2.5	34 years	1 year and 8 months	Family Health (ongoing)

Through an intense reading of the material collected and identification of similarities in the speeches of each interviewed professional, it was possible to identify five categories capable of containing information about the relationship between telemonitoring with patients undergoing TB treatment and it is possible to notice that there were different perceptions of professionals about this practice adopted by SUS in an attempt to adapt to the experienced Pandemic⁸, although there are similarities regarding the age range and specialization of the interviewed professionals, as described in Chart 1.

Telemonitoring as a facilitator of creating / maintaining a bond between the team and the patient

One of the foundations of the structure established to provide care to the population with the FHS is the link between health teams and citizens linked to their micro areas and the strength of this trust relationship⁶ can mean the difference between the success or failure of the treatment. That said, the importance of a tool capable of maintaining or creating this relationship can be measured even in times of social distance due to the COVID-19 pandemic¹¹.



"[...] most like it, it is mainly the elderly that they are alone so it ended up being a consultation that they wanted to talk about life, you know, it ended up becoming a psychology consultation, like this. It was more profitable for them, nobody, there was no negative no" (Nurs.1).

"[...] felt welcomed and assisted in this period of isolation" (R2.2).

Caution in the use of a tool that does not allow direct contact with the patient

For comprehensive patient-centered care to be developed effectively, the FHS proposes integrated multiprofessional teams as well as complementary actions with each other, expanding the ability to reach the care provided⁹. Part of this reach consists of information that is analyzed even if the patient does not verbalize and the lack of compliance can interfere with the treatment.

"[...] we see a lot, not everything they say [...] I think that looking at the patient's face, observing their self-care up close and, sometimes, even the way they speak, interferes in the decisions we take to give care higher quality [...] only that phone does not achieve this" (Nurs.5).

"[...] look, I believe that in parts like this, because I find contact with the patient, it is more efficient than just calling, I think I end up distancing myself a little from the patient. I think that, perhaps, the renewal of revenue, something more punctual, can be telemonitored. The rest cannot" (Nurs. 2).

"[...] I believe that most of them are happy to be accessed, but many still have the need for face-to-face monitoring" (R2.1).

Resistance to the applicability of telemonitoring

Although it was not yet a concrete practice used on a large scale by SUS, other countries and private health insurance companies in Brazil identified benefits such as: effectiveness in preventive health, consequent reduction in the use of urgency / emergency services, increased life expectancy and also is considered as an important tool for coping with cost growth caused by the treatment of Chronic Noncommunicable Diseases (CNCD)^{11,12}. Even so, the lack of studies that prove the effectiveness of this practice may be the reason why it generates resistance from health professionals to use it.

"[...] the presence of a professional, provides an expanded look at the patient, as well as the context in which he is inserted" (R2.3).

"[...] I believe it is important to be in direct contact with the patient to better understand their health situation [...]" (R2.4).

The use of telemonitoring to reach hard to reach locations

It is known that this type of monitoring provides health care in places with a deficient structure or difficult access¹⁰ and this could mean an increase in population

adherence to SUS and enable not only the treatment of diseases that they already have, as well as becoming a tool for health promotion and disease prevention¹².

"[...] I believe it is a very important tool. Because where we don't get physically, we can go in another way. I think it is extremely important" (Nurs.4).

"[...] had an advantage because we ended up who was able to talk to these patients and know who was not in, it is with the routine, right, unaccompanied, so he came here at the unit and we sought" (Nurs.3).

Pandemic interference on the treatment of patients undergoing TB therapy

Adherence and maintenance of treatment is one of the challenges outlined between the health care service and tuberculosis. It consists of multidimensional treatment and factors such as knowledge of the disease, understanding of the treatment such as the relationship between the health system, its professionals and the patient is essential for the therapy to be effective and for that patient to be discharged through the cure. As it is an extensive treatment and the main tool to guarantee the daily use of the medication through the DOT had to be stopped due to Pandemic, it was heard in the speech of these professionals that there was a great impact on the treatment of these patients¹⁰⁻¹³.

"[...] in some cases it interfered. When the CHA went to the patient's home to deliver the medication for the week, he realized that there were still medications that should have been used in the previous week. With DOT, it was possible to help those with greater difficulty" (R2.4).

"[...] it certainly interfered, well, we had patients who gave up [...] precisely because of this fact and because they were unable to do the supervised doses, we were not sure if the patient was taking it or not [...]" (Nurs.4).

Final Considerations

Through this study it was possible to notice that the pandemic, as expected, affected the adherence to TB treatment. Although abandonment itself was not reported, there were situations in which it was possible to observe inappropriate use of the prescribed drug therapy, which can generate consequences such as the development of resistant multidrug tuberculosis in addition to directly interfering with the time needed to complete the therapy. established for these patients.

Regarding telemonitoring, it is possible to infer that, although with reservations, it was an effective practice for monitoring patients undergoing TB treatment, as it provided the strengthening of the link between the patient and the health service and favored the reception of these patients, who, because they are followed up more frequently by the clinic, they would feel "unassisted" due to the decrease in the frequency of personal contact.

We can cite as the main flawed point of telemonitoring the lack of possibility to see the patient,



which causes us to lose the observation of signs and / or symptoms that are not referred by him, which generates loss of care aimed at the individual of complete way.

For future research, it was identified the need to

verify the rates of abandonment of TB treatment during the pandemic period and also to analyze the numbers regarding the treatment of multidrug-resistant TB, since these are the main risks of patients undergoing TB treatment.

References

1. Organização Mundial de Saúde (OMS). The End TB Strategy [Internet]. OMS, 2015 [acesso em 2020 dez 02]. Disponível em: https://www.who.int/tb/End_TB_brochure.pdf?ua=1
2. Ministério da Saúde (BR). Manual de recomendações para o controle da tuberculose no Brasil. Brasília (DF): MS; 2019.
3. Linhares SRS, Paz EPA. A vivência do tratamento de tuberculose em unidades de Saúde da Família. Escola Anna Nery [Internet] 2020 [acesso em 2020 dez 02];24(2):1-7. Disponível em: https://www.scielo.br/scielo.php?pid=S1414-81452020000200216&script=sci_arttext
4. Mussi FC, Palmeira CS, Silva RM, Costa ALS. Telenfermagem: contribuições para o cuidado em saúde e a promoção do conforto. Rev. Cient. Sena Aires [Internet]. 2018 [acesso em 2020 dez 03];7(2):76-9. Disponível em: <http://revistafacsa.senaaires.com.br/index.php/revisa/article/viewFile/306/216>
5. Kahl C, Meirelles BHS, Cunha KS, Bernardo MS, Erdmann AL. Contribuições da prática clínica do enfermeiro para o cuidado na Atenção Primária. Rev Bras Enferm. 2019;72(2):354-9. <http://dx.doi.org/10.1590/0034-7167-2018-0348>
6. Faria RM. A territorialização da Atenção Básica à Saúde do Sistema Único de Saúde do Brasil. Ciência saúde coletiva [Internet]. 2020 nov [acesso em 2020 dez 05];25(11). Disponível em: https://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-81232020001104521&lang=pt
7. Daumas RP, Silva GA, Tasca R, et al. O papel da atenção primária na rede de atenção à saúde no Brasil: limites e possibilidades no enfrentamento da COVID-19. Cad. Saúde Pública [Internet]. 2020 jun [acesso em 2020 dez 01];36(6). Disponível em: https://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-311X2020000600503&tlng=pt
8. Sousa GJB, Garces TS, Pereira MLD, et al. Temporal pattern of tuberculosis cure, mortality, and treatment abandonment in Brazilian capitals. Rev Latin-Am Enferm [Internet]. 2019 ago [acesso em 2020 set 22];27:e3218. Disponível em: https://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692019000100399.
9. Caetano R, Silva AB, Guedes ACCM, et al. Desafios e oportunidades para telessaúde em tempos da pandemia pela COVID-19: uma reflexão sobre os espaços e iniciativas no contexto brasileiro. Cadernos de Saúde Pública [Internet]. 2020 mai [acesso em 2020 set 25];36(5). Disponível em: https://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-311X2020000503001
10. Bardin L. Análise de conteúdo. Lisboa: Edições; 2016.
11. Paula AC, Maldonado JMSV, Gardelha CAG. Telemonitoramento e a dinâmica empresarial em saúde: desafios e oportunidades para o SUS. Rev Saúde Pública [Internet] 2020 [acesso em 29 nov 2020];54:65. Disponível em: <https://www.scielosp.org/pdf/csp/2016.v32suppl2/e00150115/pt>
12. Silva WBH, Côrtes EMP, Lima TA, et al. Influência da Pandemia da Covid-19 nos índices glicêmicos dos pacientes diabéticos. Research, Society and Development [Internet]. 2020 nov [acesso 2020 nov 29];9(11). Disponível em: <https://rsdjournal.org/index.php/rsd/article/download/10427/9217/141311>
13. Orlandi GM, Pereira EG, Biagolini REM, et al. Incentivos sociais na adesão ao tratamento da tuberculose. Rev Bras Enferm [Internet]. 2019 [acesso em 2020 dez 02];72(5):1247-1253. Disponível em: https://www.scielo.br/scielo.php?script=sci_abstract&pid=S0034-71672019000501182&lng=en&nrm=iso&tlng=pt
14. Marta CB, Silva WBH, Côrtes EMP, Machado TO, Francisco MTR, Silva PO, et al. Telemonitoramento: análise da percepção dos acadêmicos de enfermagem frente à pandemia da COVID-19. Glob Acad Nurs. 2020;1(3):e52. <https://doi.org/10.5935/2675-5602.20200052>