

Global Journal of Physiotherapy and Rehabilitation

Research Article

Open Access

The Physiotherapy work with Hansen's Disease Patients

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Received Date: Feb 26, 2019 / **Accepted Date:** Mar 12, 2019 / **Published Date:** Mar 14, 2019

Abstract

Introduction: Hansen's disease is an infectious and contagious disease than can affect both men and women, with wide incidence in Brazil. Such illness attacks mainly the skin, the peripheral nerves of the musculoskeletal system and the mucous membranes of the upper respiratory tract. Despite its wide incidence, there are not many papers in literature that cover the role of physiotherapy regarding Hansen's disease patients, and it is possible to notice a lack of pattern in the techniques and resources that shall be used during the treatment.

Objective: Define the physiotherapy performance in Hansen's disease patients using a quantitative approach, with applied word and investigatory goals, having field research and survey as procedures.

Methodology: Carried out in Dona Libânia Dermatological center, with patients of both genders diagnosed with leprosy received physiotherapy for a month at least and physiotherapists who work with cancer patients for six months at least.

Results: The survey results were catalogued and transformed into charts and tables.

Conclusion: There is a need for a greater performance of motor physiotherapy, therapeutic touch and mostly for an education concerning primary attention, with lectures or activities that address this population.

Keywords: Hansen's Disease; Physiotherapy; Health Prevention and Promotion

Cite this article as: Taynah de Moraes Carvalho, Andressa Pessoa Almeida, Pâmela de Lima Penha, et al. 2019. The Physiotherapy work with Hansen's Disease Patients. Global J Physiother Rehabil. 1: 09-16.

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Introduction

Hansen's disease is an infectious and contagious illness also known as "leprosy" since ancient times. Caused by *Mycobacterium Leprae*, it attacks mostly the integumentary system, the peripheral nerves of the musculoskeletal system and the mucous

membranes of the upper respiratory tract in humans [1]. Hansen's disease affects both men and women of all ages and it can be categorized in four different manners in Brazil: indefinite, tuberculoid, Virchowian and dimorph, where the first two present few bacilli and the two latter present many bacilli [2,3]. The disease can be transmitted through the contact with the

patients that hold the dimorph or Virchowian Hansen's disease who have not initiated treatment. The upper airways facilitate the expulsion of the bacilli making susceptible contacts liable to infection. The Hansen's bacillus is highly infective, although few individuals become sick [1].

The disease is easily diagnosed, and it is also considered treatable, referring to the polychemotherapy (PCT), a clinical treatment prescribed to leprosy patients which helps controlling the illness [4]. The diagnose is based on category and on the presence of some evidence, such as: numbness in skin injuries, peripheral nerve thickening or positive smear [1]. The prognosis depends on some determiners, such as the severity of the injury, the body's resistance and the patient's dedication concerning treatment. The main characteristic of the disease is given by the damage on the peripheral nerves that causes great physical disabilities such as lower or lack of muscle strength, stiff joints, muscular contraction and atrophy. There are also damages in autonomic fibers leading to the loss of sweating, which makes the skin drier and therefore more vulnerable to infections. These alterations can cause physical and psychosocial limitations in Hansen's disease patients (HEALTH MINISTRY, 2008). The Hansen's disease carriers present limited working capacity and deformities, which make them experience social discrimination and thus suffer with changes in their self-esteem. The physiotherapist has a key role in the multidisciplinary team, reaching an early diagnose by detecting sensorial-motor disability, besides of having the potential to educate patients regarding the prevention of secondary results and the treatment of their disabilities. The performance in Hansen's disease contributes to the patients' integral care, providing guidance about the illness and self-care and using resources and maneuvers that contribute to their rehabilitation and reinsertion in society [5]. Considering the wide incidence of Hansen's disease as well as of the lack of specific scientific papers that cover the physiotherapy's role in the treatment of such

disease's carriers, it is necessary to have standard techniques and resources to be used during the treatment, besides raising the population's awareness regarding contamination, treatment, transmission and prevention of deformities. The main objective of the present paper is to describe the physiotherapy's performance Hansen's disease patients and the specific objectives are: learn about the complications that may occur during the Hansen's disease treatment; list the resources and techniques used in physiotherapy interventions with Hansen's disease patients.

Methodology

The present study uses quantitative and qualitative approaches, applied work and exploratory objective, with field research and survey as procedures. The research field was Dona Libânia Dermatological Center, which is benchmark in Hansen's disease treatment in Ceará. The data was collected with a semistructured survey with eleven questions for physiotherapists and twenty-one questions for patients, as well as the observation of physiotherapy treatment. The research includes a sample of thirty participants that were present during the data collection, which took place in July and August 2018. The researchers were present in the field in different days and times, in order to collect as many questionnaires as possible to obtain a more significative sample. Hansen's disease patients who are assisted by a physiotherapist for at least one month, of both genders, were included in the research, regardless of their age, as well as physiotherapists that work in this area for at least six months. The research does not include patients who were diagnosed with Hansen's disease but did not receive physiotherapy and patients and physiotherapists who refused to take part in the study. The data was transcribed into Google Forms questionnaires and later organized by the same application. In addition to that, Excel was used for charts and tables. Finally, it is worth highlighting that during the data collection period there was a delay in the patients' transportation benefit, which limited the number of Hansen's disease patients treated

at the place and therefore made the participation of Hansen's disease patients that receive physiotherapy more difficult. In addition to that, these individuals received physiotherapy three times a week on average. The research follows the Resolution No 510, of April 7th, 2016, of the National Health Council, which establishes the legal and ethical aspects for research with human beings, upon approval of the Research Ethics Committee of Centro Universitário Estácio do Ceará and Dona Libânia Dermatological Center under the issue number 2.764.172.

Results and Discussion

Patients

During data collection, 30 questionnaires were answered, and it was possible to note a majority of men, 76,7% (n=23), over women, who represent only 23,3% (n=7), which concurs with the study carried out by Vieira et al. [6] with Hansen's disease patients in a city in Piauí where the male gender prevailed. It was also noted that the most affected age range was from 45 to 58 years of age, which corresponds to 36,7% of the sample. This data concurs with the ones obtained by Longo and Cunha [7] who observed a more significative number of cases in the age range from 40 to 59 years of age. There were no cases in individuals under 20 years of age and the average age is of 57,5. Regarding education level, 6,7% (n=2) had Higher Education level, 40% (n=12) had Secondary School level, 3,3% (n=1) had not finished Secondary School, 30% (n=9) had not finished Primary School, 10% (n=3) had Primary School level, 6,7% (n=2) were illiterate and 3,3% (n=1) were unable to inform their education level. It can be inferred that insufficient education can hinder the acquisition of information and awareness about the disease and its treatment. It was also verified that the predominant ethnicity in data collection was brown (cognate term for the Brazilian *pardo*), with 66,7% (n=20), followed by white, 16,7% (n=5), then black, 13,3% (n=4) and yellow with 3,3% (n=1). This data differs from the study of Melão et al. (2011), where

white ethnicity was dominant, possibly due to the number of participants in the research or the fact that it was carried out in a more ethnic diverse region with semiarid weather. Regarding marital status, the majority was of married individuals, 50% (n=15), followed by singles, 33,3% (n=10), widowed, 10% (n=3), and divorced, 6,7% (n=2) (Table 1).

The collected data shows that 76,7% (n=23) did not acknowledge Hansen's disease before developing the condition, and 23,3% (n=7) already knew about it through family, population and media, such as television. This result concurs with Moreira et al. [8] who compared in a study the awareness of individuals before and after an educational lecture, stating that most patients ignore the disease before the diagnosis. According to the data collected, after being diagnosed with Hansen's disease, 53,3% (n=16) understood what the illness was and 46,7% (n=14) were not familiar with it. The number of individuals who understood how Hansen's disease can be transmitted was of 53,3% (n=16), while 46,7% (n=14) did not know how transmission took place. There were minor differences among answers, which confirms the unawareness of the participants even though they were going through treatment. It could also be verified that 53,3% (n=16) were aware of a possible for a cure for the disease, while 46,7% (n=14) did not know about this information. This variable proved to be a doubt among the majority of participants, since some of them had heard from doctors about a possible cure, but did not believe it actually existed, given that they had been in treatment for years. It was revealed that 56,7% (n=17) did not know another person diagnosed with Hansen's disease, while 43,3% (n=13) did. Most of the population covered by the sample, 83,3% (n=25) were aware of the complications caused by the illness and only 16,7% (n=5) did not know which secondary results could occur (Table 2). Regarding adverse symptoms, there was higher awareness, since the patients struggle with the complications on a daily basis.

Table 1: Sociodemographic variables of the participants.

Variables	N	%
Gender		
Female	7	23,3
Male	23	76,7
Age		
20-40	7	23,3
41-60	11	36,7
61-80	10	33,3
81-100	2	6,7
Education		
Illiterate	2	6,7
Primary Education Complete	3	10
Primary Education Incomplete	9	30
Secondary School Complete	12	40
Secondary School Incomplete	1	3,3
Higher Education	2	6,7
Unable to inform	1	3,3
Etnicity		
Yellow	1	3,3
White	5	16,7
Black	4	13,3
Brown	20	66,7
Marital Status		
Married	15	50
Divorced	2	6,7
Single	10	33,3
Widowed	3	10
Total	30	100

Source: Authors' own design

Table 2: Acknowledgement of Hansen's Disease.

Questions	Yes(%)	No(%)
Had you heard about Hansen's disease before having it?	23,3	76,7
Had your Family heard about Hansen's disease before you were diagnosed with it?	23,3	76,7
Do you know what is Hansen's disease?	53,3	46,7
Do you know how the disease is transmitted?	53,3	46,7
Do you know if there is a cure for this disease?	53,3	46,7
Do you know other people who have Hansen's disease?	43,3	53,7
Do you know which complications this disease can cause to you?	83,3	16,7

Source: Authors' own design

Concerning physiotherapy, 66,7% (n=20) had not heard about practice before starting the treatment and only 33,3% (n=10) were familiar with it. Based on the data collected, 73,3% (n=22) did not believe that

physiotherapy was important before being diagnosed with Hansen's disease and only 26,6% (n=8) thought it was necessary. After beginning physiotherapy, results showed that 96,7% (n=29) considered it very important in their treatment and only 3,3% (n=1) did not acknowledge its importance (Table 3).

Table 3: Acknowledgement of physiotherapy before the disease.

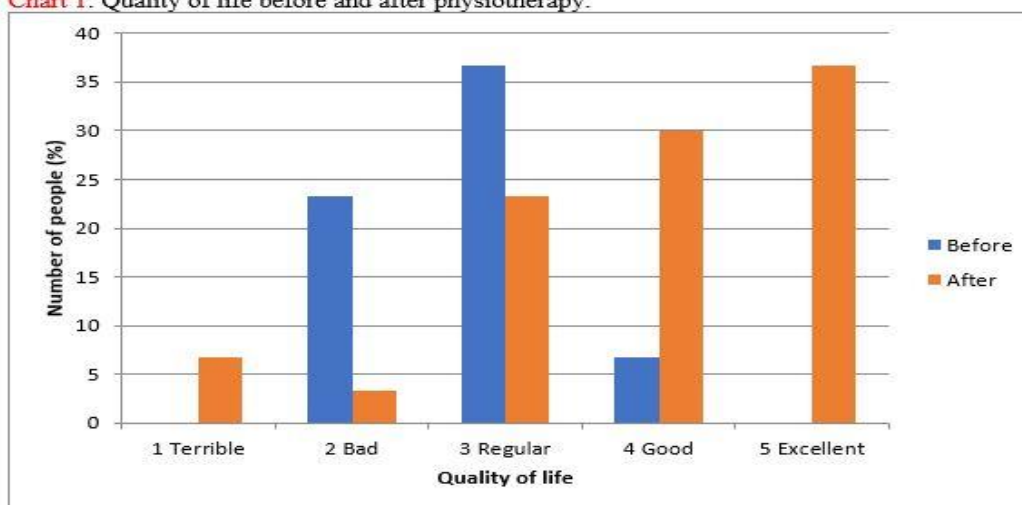
Questions	Yes(%)	No(%)
Had you heard about Physiotherapy before starting the treatment at Dona Libânia Dermatologic Reference Center?	33,3	66,7
Before the Hansen's disease diagnosis, did you believe physiotherapy had an important role in the treatment of this illness?	26,7	73,3
Do you believe physiotherapy is important in your treatment?	96,7	3,3

Source: Authors' own design.

A quantitative scale was applied in order to know about the quality of life of the Hansen's disease patient before starting physiotherapy, in which 1 corresponded to terrible life conditions and 5 to excellent conditions. According to the data collected, 33,3% (n=10) chose 1 as answer, 23,3% (n=7) chose 2 (bad), 36,7% (n=11) answered 3 (regular) and 6,7% (n=2) rated 4, which shows good aptitude. In order to compare the quality of life of Hansen's disease patients after initiating physiotherapy, the same scale was applied and 66,7% (n=20) had improvements in quality of life, 23,3% (n=7) determined it as regular, 3,3% (n=1) presented their life conditions as bad and 6,7% (n=2) claimed to have terrible quality of life (Chart 1). Regarding the time spent by patients in physiotherapy, 46,7% (n=14) were going under

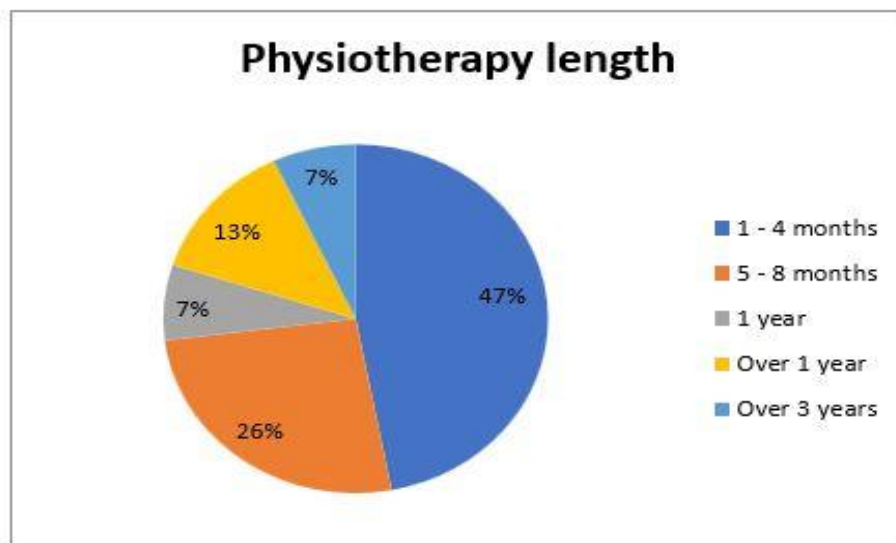
intervention for 1 to 4 months, 26,6% (n=8) for 5 to 8 months, 6,7% (n=2) for one year, 13,3% (n=4) for over a year and 6,7% (n=2) for over 3 years (Chart 2) [9]. confirms the data collected, where it could be verified that given the clinical symptoms of the disease, physiotherapy has a key role in the treatment of these individuals, acting on the evaluation as well as on the prevention of possible complications after the infection [10] and [11] state that the sooner the intervention program begins, especially when the damage to nerves are still primary, the lower are the chances for deformities to be established. Constant monitoring during the rehabilitation process is key for the functioning recovery of the patient.

Chart 1: Quality of life before and after physiotherapy.



Source: authors' own design

Chart 2: Physiotherapy length



Source: Authors' own design

It was found that 86,7% (n=26) felt interferences while carrying out daily activities after the Hansen's disease diagnose and only 13,3% (n=4) felt no influence of it. The study of Costa et al. [12] concurs with the data collected, showing that Hansen's disease damages the everyday life of individuals, causing suffering that goes beyond physical discomfort, interfering in social and psychological matters. The data also reveals that 96,7% (n=29) were able to improve their daily activities, while only 3,3% (n=1) could not benefit from such improvement. After physiotherapy, patients were able to improve movement, 33,3% (n=10), pain relief, 30% (n=9), numbness, 30% (n=9), sensitivity, 10% (n=3), gross and fine motor skills, 6,7% (n=2), strength, 23,3% (n=7), cramping, 3,3% (n=1) and 20% (n=6) felt no improvement. Most of the patients, 90% (n=27), claimed that they would not be able to achieve the same evolution in their clinical state without physiotherapy, while 10% (n=3) claimed that the same result could be achieved without it. This result concurs with the study of Lima et al. [3], where Hansen's disease patients treated with physiotherapy showed improvements in muscle strength and pain, besides avoiding the worsen of the disease. According to the data collected, 60% (n=18) of the patients did not know about

the resources and techniques used in their treatment. Patients claimed that the most used resources were functional electrostimulation (F.E.S.), 20% (n=6), transcutaneous functional electrostimulation (T.E.N.S.), 16,7% (n=5), surface heat, 13,3% (n=4), therapeutic exercise, 6,7% (n=2) and stretching, 3,3% (n=1). With the data above, it was possible to verify that there is a deficiency in the treatment of the patients, provided that most of them claimed to use only electrical stimulation (TENS and FES) and surface heat on the limbs. However, there are multiple complications, as sensitivity, strength and range of motion loss, as well as numbness, and there are several low-cost resources and orientations that can be used by the patients at home. A wide range of the patients, 70% (n=21), claimed that physiotherapy helped them understand Hansen's disease, while 30% (n=9) said that there was no contribution regarding knowledge about the disease. Most patients, 93,3% (n=28) said that lectures and workshops to teach about Hansen's disease, its risks, prevention and treatment are necessary, whereas only 6,7% (n=2) claimed that such educational actions are unnecessary (Table 4). In a study, Moreira et al. [8] highlights that the development of educational actions to prevent Hansen's disease is key to the illness' eradication.

Table 4: Acknowledgement of Physiotherapy after the disease.

Questions	Yes(%)	No(%)
After initiating physiotherapy, was there an improvement in daily activities?	96,7	3,3
Was there an improvement in your clinical state?	96,7	3,3
Do you believe you could achieve the same result without physiotherapy?	10	90
Do you know the physiotherapy resources used in your treatment?	40	60
Has physiotherapy helped you learn about Hansen's disease?	70	30
Are lectures and workshops to give basic information about Hansen's disease and its risks, prevention and treatment necessary?	93,3	6,7
Source: Authors' own design		

Physiotherapist

A questionnaire was applied to the physiotherapist responsible by the physiotherapy department in Dona Libânia Dermatologic Center, who claimed to work in the area for a period between one and five years, has no record of the disease in the family and reported that there are several complications during the treatment, such as Reaction Syndrome. According to the same professional, there is a higher incidence among the male gender, and physiotherapy has no means to prevent Hansen's disease, only the BCG vaccine is able to do it. Unlike the physiotherapist's answer, physiotherapy can work in the prevention of Hansen's disease. According to Brazil [13], the health professional who works in NASF-Family Health Expanded Center, must recognize the area, act in humanized and integrated manner, contribute to popular and permanent health education and direct actions to promote health, cooperating directly in the quality of life of individual. The techniques used in the treatment are electrical stimulation (TENS and FES), stretching, kinesiotherapy (maintain-relax/shrink-relax), manual lymphatic drainage and massage therapy. The difficulties found in the place are due to financial availability and lack of equipment, even though the professional claimed no limitations in financial resources. The physiotherapist believes that educational lectures are necessary and also that physiotherapy can improve the quality of life of the patients.

Conclusion

With the present study, it is possible to conclude that physiotherapy is carried out with a certain deficiency, given that it involves only the use of specific devices in most times, thus being only a protocol. During the period of data collection, it was possible to notice that physical exercises do not take place often, as well as superficial or deep vibrating stimulation or working with motor skills, since pace is compromised and there is a strength loss. There are also no orientations for the patient to follow at home. Nevertheless, in spite of all these deficiencies, physiotherapy contributes in a positive manner to improve the quality of life of patients. However, motor physiotherapy, therapeutic touch, humanized professionals and mainly primary educational actions with lectures or workshops for this population are still necessary.

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