

Nursing diagnoses in people with leprosy: approximation between Orem's theory and the ICNP®

Diagnósticos de enfermagem em pessoas com hanseníase: aproximação entre teoria de Orem e a CIPE®

Michele Dias da Silva Oliveira¹ , Juliana de Oliveira Roque e Lima¹ , Hélio Galdino Júnior¹ ,
Telma Ribeiro Garcia^{2*} , Maria Márcia Bachion^{1**} 

ABSTRACT

Objective: To analyze the profile of nursing diagnoses in people with leprosy based on Orem's theory and the International Classification for Nursing Practice (ICNP®). **Method:** cross-sectional, descriptive study of 24 people with leprosy in outpatient care. Data collection occurred through nursing consultations in the light of Orem's theory, using interviews and clinical examination. **Results:** The process of nursing diagnoses development was based on clinical reasoning, the seven-axis model of the ICNP® and the ISO 18104. The diagnostic inferences were validated by three judges. **Conclusion:** Sixty nursing diagnoses were identified, 51.6% of which were classified as health deviation self-care requisites. The diagnostic profile indicates specific self-care demands of this population and the need for the organization of interventions based on the supportive-educative system.

Descriptors: Nursing; Nursing Theory; Classification; Leprosy; Communicable Diseases; Standardized Nursing Terminology.

RESUMO

Objetivo: Analisar o perfil de diagnósticos de enfermagem em pessoas com hanseníase, utilizando a teoria de Orem e a Classificação Internacional para a Prática de Enfermagem (CIPE®). **Método:** Estudo transversal, descritivo, incluiu 24 pessoas com hanseníase, em atendimento ambulatorial. A coleta de dados ocorreu mediante consultas de enfermagem, à luz da teoria de Orem, utilizando-se entrevista e exame clínico. **Resultados:** O processo de elaboração dos diagnósticos de enfermagem foi apoiado em raciocínio clínico, no modelo de sete eixos da CIPE® e na ISO 18.104. As inferências diagnósticas foram validadas por três juízes. **Conclusão:** Foram identificados 60 diagnósticos de enfermagem, sendo 51,6% classificados como requisitos de autocuidado de desvio da saúde. O perfil de diagnósticos indica demandas de autocuidado específicas desta população e a necessidade de intervenções organizadas no sistema apoio e educação.

Descritores: Enfermagem; Teoria de Enfermagem; Classificação; Hanseníase; Doenças Transmissíveis; Terminologia Padronizada em Enfermagem.

¹Federal University of Goiás – Goiânia (GO), Brazil. E-mails: michele_oliveira@ufg.br, julianalima@ufg.br, helio_junior@ufg.br, maria_marcia_bachion@ufg.br

²Federal University of Paraíba – João Pessoa (PB), Brazil.

*In memoriam

**Scholarship holder at the National Council for Scientific and Technological Development, Brazil (process n. 312093/2013-6).

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INTRODUCTION

Leprosy is an infectious disease caused by the *mycobacterium leprae* with high prevalence in 145 developing countries and considered one of the priority endemic diseases by the World Health Organization⁽¹⁾.

In 2016, the absolute number of new leprosy cases in the world was approximately 200 million⁽¹⁾. This detection of new cases indicates that the disease remains a Public Health problem in many countries of the world, including the Americas, where Brazil stands out and ranks second in absolute numbers of cases in the world⁽¹⁾.

The *mycobacterium leprae* has a predilection for the skin and peripheral nerves. It causes lesions with altered sensitivity that can generate deformities and disabilities related to pain and neurological dysfunction, which are potentially stigmatizing⁽²⁾.

Clinical manifestations and treatment for leprosy lead to modification and/or reduction of activities of daily living in people affected by this disease. It is necessary to identify the factors that influence the capacity and demand for self-care for the planning of actions.

Thus, the use of Dorothea Orem's theory of self-care⁽³⁾ in clinical nursing practice aimed at people with leprosy can guide nurses' actions with a view to the development of self-care skills and identification of the engagement and limitations of these people to perform it, in addition to the fundamental actions for the prevention of physical disabilities.

In this theoretical model⁽³⁾, self-care is about voluntary attitudes and actions developed by individuals themselves with the intention to meet their needs for regulation, functioning and development. This activity is learned over time, through interpersonal relationships and communication, in search for a state of integrality or completeness. Such attitudes and actions can be supported and stimulated by the deliberate action of nursing.

In this framework, the professional performs estimates and prescription operations in a process directed to diagnostic and therapeutic decisions and the evaluation of the outcome of their interventions, that is, the Nursing Process⁽³⁾, understood as the expression of the clinical method in the area.

Several nursing terminologies allow the standardization of the language used in the Nursing Process and the documentation of care. The International Classification for Nursing Practice (ICNP[®]) has been used in the implementation of information systems, nursing documentation and allows an adequate assessment of health gains⁽⁴⁾.

In the context of the estimated operations in Orem's Theory, the development of nursing diagnoses reveals the phenomena that require nursing interventions to achieve expected outcomes, with a view to increasing the capacity for self-care. It is performed from a broad patient-centered data collection⁽⁵⁾.

Studies on nursing diagnoses in people with leprosy are scarce and generally use other terminologies⁽⁶⁾ that have been criticized for their poor applicability in primary care, not taking into account the use of the ICNP[®]⁽⁵⁾. This terminology, in turn, has been gaining ground in public health settings in Brazil⁽⁷⁾.

The identification of nursing diagnoses in the care of people with leprosy with an approach based on the self-care model⁽³⁾ and using the ICNP[®] taxonomy can deepen the knowledge in the area, with a view to better serve this population.

In view of the above, the aim of the present study is to analyze the profile of nursing diagnoses in people with leprosy using Orem's theory and the International Classification for Nursing Practice (ICNP[®]) in clinical practice.

METHOD

Cross-sectional descriptive study, conducted from January to October 2015 in four Basic Health Centers in the city of Goiânia, Goiás, where the care demand of people with leprosy was greater. The recommendations of the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) for cross-sectional studies were adopted for the preparation of the manuscript.

The study population consisted of people with leprosy undergoing treatment in the Basic Health Centers at the time of the study.

The convenience sample with successive entries met the following inclusion criteria: age greater than or equal to 18 years, residence in Goiânia, prediction of at least three months until the end of treatment at the time of recruitment for study. Exclusion criteria were having severe hearing loss and not having an interpreter, and presence of cognitive impairment.

On the scheduled date to receive the supervised medication dose, between January and April 2015, users were approached, and those who met the inclusion criteria, were invited to participate in the study. Users that agreed to participate signed the Informed Consent form (IC).

Seven nursing consultations were planned for each participant throughout three months for the complete assessment of all self-care requirements. They were distributed as follows: three nursing consultations at a one-week interval, three nursing consultations at a 15-day interval and one nursing consultation at a 30-day interval. The estimated duration of the first nursing consultation was 50 minutes; the second, 40 minutes; and, from the third consultation, 30 minutes. Nursing consultations were held in the Basic Health Center of origin of participants and the total of 109 consultations were performed in the period.

Figure 1 shows the flowchart of procedures for the recruitment, inclusion and follow-up of study participants.

An assessment script based on Orem's model was used for data collection⁽³⁾, adapted through preliminary testing for the inclusion of the record of estimated, transitional and prescriptive operations⁽³⁾. Clinical and laboratory data collected from patients' medical records were used, and data were collected from interview and physical examination procedures. Cognitive assessment⁽⁸⁾ and simplified neurological assessment⁽⁹⁾, were also included for complementary assessment of self-care requisites.

The process of naming the ND was initially based on the ICNP® version 2015 and on the bank of terms identified in publications of the Ministry of Health⁽¹⁰⁾, then, terms were validated by experts and updated using the ICNP® 2019⁽¹¹⁾. In the mentioned bank, there are terms not included in the ICNP® and also considered useful for clinical nursing practice.

For the combination of terms, the standards of ISO 18104⁽¹²⁾ were used. In case of absence of the term necessary for the name of the nursing diagnosis identified in the aforementioned sources^(10,11), the researchers consulted

works^(13,14) with nomenclature of nursing diagnoses, outcomes and interventions using the ICNP®⁽¹³⁾ or based on their logic⁽¹⁴⁾ for other populations of interest.

The diagnostic statements, as well as data for each participant, were sent to three nurses, considered judges (experts) in the present study. They have a doctoral degree, familiarity with terminologies of nursing diagnosis and/or leprosy. They assessed the reliability of the diagnostic judgment and presented suggestions for readjustment, refinement and exclusions. Initially, this process occurred independently, followed by discussion for consensus. Agreements and disagreements were examined and only statements in which at least two judges confirmed the diagnostic hypothesis raised by the field researcher were maintained.

The nursing diagnoses were grouped according to Orem's self-care requisites⁽³⁾, analyzed using descriptive statistics and presented as simple and percentage frequency.

This study is part of a greater study entitled "ICNP® terminological subset for the care of people with leprosy" approved by the Research Ethics Committee of the UFG (CAAE:38108114.6.0000.5078, number 878.555).

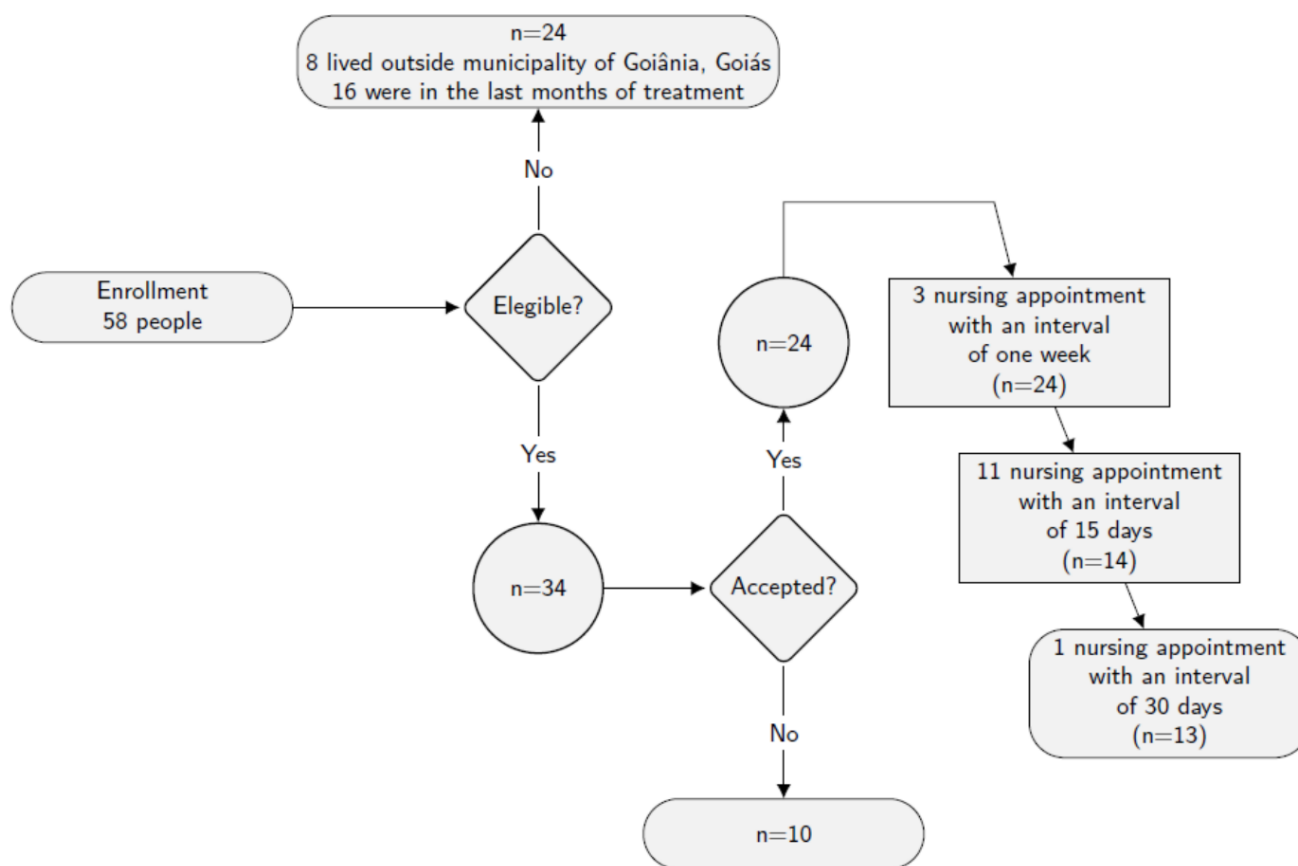


Figure 1. Flowchart of recruitment, inclusion and follow-up procedures in the study.

RESULTS

Twenty-four people participated in the study, predominantly with complete or incomplete primary education (Table 1), and a similar proportion of young adults (18–30 years old), adults (31–50 years old) and older adults and elderly (>50 years old).

Most participants were classified in the clinical form dimorphous (67%), although according to the operational classification, 100% were multibacillary (MB). As for sputum smear microscopy, 21.2% had positive sputum smear microscopy for *mycobacterium leprae*, and 71% of patients had zero disability (Table 2).

This group presented 60 nursing diagnoses, of which 21 (35.0%) related to universal self-care requisites, 8 (13.3%) to developmental requisites (Table 3) and 31 (51.6%) related to health deviation requisites (Table 4). Among the diagnoses related to universal and developmental self-care requisites, 19 (65.5%) were developed by exclusively taking into account the terms contained in the ICNP^{®(11)}, whether in a more comprehensive, more restricted, identical or similar way; in 1 (3.4%), it was necessary to resort to the previously developed Bank of terms⁽¹⁰⁾, in 9 (31.0%) the constant terms in the literature production were used exclusively^(13,14) and in 1

(3.4%), a term found both in the Bank⁽¹⁰⁾ and in the reference literature^(13,14) was used, as shown in Table 3.

In turn, among the diagnoses established in the context of health deviation self-care requisites, 23 (74.1%) were developed from terms contained in the ICNP[®] in an identical or similar way, 3 (9.7%) diagnoses were included in the Bank of terms⁽¹⁰⁾, 2 (6.4%) were present only in one of the works that presented a bank of nursing diagnoses developed according to the ICNP^{®(13,14)} and 3 (9.7%) were not included in any bank or terminology, and were developed based on the ISO 18104⁽¹²⁾.

DISCUSSION

Two major groups of nursing diagnoses were identified in people with leprosy: those that configure human responses linked to universal self-care requisites, common to all stages of life, the maintenance of the integrity of the structure of human functioning; and to developmental, associated with the processes of life inherent to human beings in general, and those that configure health deviation requisites, which represent self-care demands related to the fact of living with leprosy.

Table 1. Sociodemographic characterization of people with leprosy seen at Basic Health Centers (n=24). Goiânia, GO, Brazil, 2015.

Variables	Frequency	%
Gender		
Male	13	54.20
Female	11	46.00
Age (years)		
18–30	7	29.20
31–40	3	12.50
41–50	5	21.00
≥51	9	37.50
Educational level		
Illiterate	0	0.00
Primary school	14	58.30
Secondary school	9	37.50
Higher education	1	4.20
Marital status		
Single	10	42.00
Married	12	50.00
Separated	1	4.20
Widowed	1	4.20

Table 2. Clinical characterization of people with leprosy seen at Basic Health Centers (n=24). Goiânia, GO, Brazil, 2015

Variables	Frequency	%
Clinical form		
Indeterminate	2*	8.30
Tuberculoid	1*	4.20
Dimorphous	16	67.00
Dimorphous-Virchowian	1	4.20
Virchowian	3	12.50
Pure neural	1	4.20
Operational classification		
Paucibacillary	0	00.00
Multibacillary	24**	100.00
Bacilloscopy		
0	19	79.20
1–2,9	01	4.20
3–4	04	17.00
Degree of physical disability		
0	17	71.00
1	05	21.00
2	02	8.30

*Hypothesis of medical diagnosis; **Classification assumed by doctors during treatment based on clinical evolution.

Table 3. Distribution of nursing diagnoses in people with leprosy (n=24) according to universal and developmental self-care requisites. Goiânia, GO, Brazil, 2015.

Universal self-care requisites	Nursing diagnosis	Frequency	%
Maintenance of a sufficient intake of air	Stress dyspnea	4	16.7
	Smoking	1	4.2
	Cough	1	4.2
Maintenance of a sufficient intake of food/water	Deficient food intake	8	33.3
	Underweight	1	4.2
	Obese	1	4.2
	Risk for dehydration	1	4.2
	Overweight	1	4.2
Provision of care associated with elimination process and excrements	Constipation	3	12.5
	Urinary incontinence	1	4.2
Maintenance of balance between activity and rest	Sedentary lifestyle ^a	10	41.7
	Impaired sleep	5	20.8
	Impaired physical activity	2	8.3
	Insomnia	2	8.3
	Decreased leisure ^a	1	4.2
	Impaired rest ^a	1	4.2
	Somnolence	1	4.2
Maintenance of balance between solitude and social interaction	Impaired family process	2	8.3
	Risk for contamination exposure [specify location]	1	4.2
	Impaired social interaction ^a	1	4.2
	Impaired communication	1	4.2
Developmental self-care requisites	Nursing diagnosis	Frequency	%
	Appropriate self-care ^a	11	45.8
	Inappropriate vaccine status ^a	10	41.7
	Health seeking behavior	5	20.8
	Inappropriate personal hygiene [specify location]	5	20.8
	Disposition for appropriate self-care ^a	3	12.5
	Ineffective individual coping ^a	3	12.5
	Ineffective disease prevention ^b	3	12.5
	Unsatisfactory sexual activity ^a	2	8.3

^aterm from the reference literature^(13,14); ^bterm from the Bank of terms⁽¹⁰⁾.

These diagnoses are intrinsically and dynamically related, as we will see later, and demand great clinical reasoning capacity and specific knowledge of professionals. The complexity involved in this profile of nursing diagnoses also shows that the process of falling ill demands that these people are able to adapt, mobilize resources, acquire skills for self-care and engage with its performance.

Among all diagnoses, Non adherence to medication regime stands out, identified in 21 participants (87.5%).

This is understandable, as the Therapeutic regime control represents a great challenge for people with leprosy, because they face a long pharmacological treatment⁽¹⁵⁾ that can cause side effects⁽¹⁶⁾. In addition, they are susceptible to leprosy reactions⁽¹⁷⁾ which, together with the side effects of medications used in the treatment, interfere with the performance of their activities of daily living and work activities⁽¹⁸⁾. In leprosy, the Risk for medication side effect and possible complications imply a wide and lasting picture

of self-care behaviors necessary to prevent deformities, disabilities and physical disabilities⁽¹⁹⁾.

Drug treatment for leprosy includes multidrugs and is known as Polychemotherapy (PCT). For paucibacillary (PB) cases, a combination of rifampicin and dapsone is used, offered in six monthly doses of daily use that can be completed within nine months. For MB cases, dapsone, clofazimine and rifampicin, offered in 12 monthly doses of daily use, and can be completed in up to 18 months⁽¹⁵⁾.

In addition to the complexity and duration of treatment, the diagnosis Medication side effects: PCT for leprosy, has an interface with the diagnosis Non adherence to medication regime identified in participants of the study. For the most part, these effects were expressed by gastric discomfort, anemia and skin effect. In a prolonged follow-up, the frequency of this diagnosis may be much higher. The side effects of rifampicin vary from cutaneous, gastrointestinal, hepatic, hematopoietic, hemolytic anemia and pseudogripal syndrome⁽¹⁶⁾. The side

Table 4. Distribution of nursing diagnoses in people with leprosy in health deviation self-care requisites. Goiânia, GO, Brazil, 2015.

Health deviation self-care requisite	Nursing diagnosis	Frequency	(%)
Health deviation	Non adherence to medication regime	21	87.5
	Impaired sensory perception [specify]	20	83.3
	Deficit of knowledge about the disease	16	66.7
	Impaired skin integrity	15	62.5
	Risk for fall	11	45.8
	Acute pain [specify location]	9	37.5
	Neurogenic pain [specify location]	7	29.2
	Medication side effect [specify medication and effect]	7	29.1
	Impaired physical mobility [specify location]	6	25.0
	Decreased muscle strength ^b	5	20.8
	Nasal obstruction	5	20.8
	Fear [specify object of fear]	4	16.7
	Adherence to therapeutic regime	3	12.5
	Anxiety	3	12.5
	Edema [specify location]	3	12.5
	Weakness	3	12.5
	Ineffective tissue perfusion	2	8.3
	Dry eye ^a	2	8.3
	Low self-esteem ^a	1	4.2
	Negative self-image	1	4.2
	Ineffective skin protection behavior ^b	1	4.2
	Hopelessness	1	4.2
	Chronic pain [specify location]	1	4.2
	Yellowish sclera ^a	1	4.2
	Fatigue	1	4.2
	Absent muscular strength ^b	1	4.2
	Risk for infection [specify location]	1	4.2
	Risk for injury [specify location]	1	4.2
	Risk for discrimination	1	4.2
	Tremor	1	4.2
Dizziness ^a	1	4.2	

^aterm from the reference literature^(13,14); ^bterm from the Bank of terms⁽¹⁰⁾; [*] to those that do not appear in any bank and terminology.

effects of clofazimine are cutaneous and gastrointestinal, while effects of dapsone are cutaneous, hepatic, hemolytic and some rare, such as insomnia and peripheral motor neuropathy⁽¹⁶⁾.

Non adherence to pharmacological treatment may be one of the main causes for the development of resistance to antibiotics, physical disabilities and permanence of the disease transmission chain, and is considered an obstacle to the control of leprosy worldwide⁽²⁰⁾.

There is a scheme called Uniform Multidrug Therapy (U-MDT), only for PB and MB, shorter (lasts six months), with the same drugs and doses as PCT-MB (dapsone, clofazimine and rifampicin). The objective is to increase patient adherence and reduce the complexity of the current PCT, and it has been tested and can help to reduce the complications of PCT⁽²¹⁾.

The possibility of pain contributing to Non adherence to medication regime of people with leprosy should also be considered, since it can interfere with the focus of attention, impair thinking, lead to distracted behavior⁽¹³⁾ and forgetting medication intake.

In the present investigation, Pain configured another diagnosis identified in health deviation self-care requisites. We highlight the need to specify the type of pain in the title of this diagnosis. In the studied population, it was Neurogenic pain, Acute pain, Joint Pain and Chronic Pain. Only the latter was not related to leprosy manifestations.

Joint pain can occur due to neuritis and is manifested spontaneously or on palpation, in a given nerve trunk, with or without impairment of function⁽¹⁸⁾. Pain can lead to limitation of freedom of movement and action to perform activities of daily living and work activities in people with leprosy⁽¹⁹⁾.

In turn, the diagnosis Impaired sensory perception, identified in a considerable portion of participants, is linked to two types of events. The clinical manifestations of leprosy are related to the involvement of the skin and peripheral nerves, which can lead to the loss of protective sensitivity of the epithelium, tone, muscle strength and affect organs such as the eyes and nose, causing deformities and/or physical disabilities that if diagnosed and treated late, may become definitive^(2,20,21).

In addition, during the course of leprosy, or even after treatment, a significant proportion of people with this disease may develop sudden and intense immuno-inflammatory processes, with frequent involvement of peripheral nerves, the so-called leprosy reactions, which are classified as type 1 reaction or Reversal Reaction (RR) and Type 2 reaction or Erythema Nodosum Leprosum (ENL)⁽¹⁷⁾.

If left untreated, these inflammatory processes can cause demyelination and chronic remyelination leading to calcification with loss of neural function and non-traumatic peripheral neuropathy⁽¹⁷⁾. These can lead to impaired

protective sensory perception, resulting from the disease itself and/or leprosy reactions.

Most of the times, disabilities are related to loss of sensation and the appearance of lesions in the limbs, which causes some dependence and insecurity, impairing the individual's mobility⁽²²⁾.

The Risk for infection in people with leprosy is justified by the presence of dry and scaling skin, which makes them vulnerable to fissures that can become secondarily infected and compromise muscles, tendons, bones and joints⁽⁹⁾; as well as nasal obstruction due to the production of nasal secretions of viscous characteristic with odor and adherent to the mucosa. When this area is manipulated to unblock and remove secretions and crusts, the mucosa can be damaged⁽⁹⁾.

More than half of participants presented the nursing diagnosis Impaired skin integrity, which points to the need for nurses investing in the health education of these patients with a view to self-care.

The slowness or loss of accommodative reflexes and mobility of the bone structure are also part of the range of factors that lead to physical disabilities⁽⁹⁾, thereby favoring the nursing diagnosis Risk for fall identified in almost half of patients in the study.

The Risk for fall diagnosis is considered to be related to other phenomena identified as nursing diagnoses, such as: Impaired physical mobility; Decreased muscle strength; Weakness; Fatigue; Absent muscular strength; Dizziness and Tremor.

The care plan for people diagnosed with Risk for fall is broad and involves the promotion of a safe environment; help or assistance with walking, activities of daily living, work activities, transfer and body hygiene; assessment of risk for fall, level of awareness, motor skills and health education focused on fall prevention measures⁽¹³⁾.

Appropriate self-care in people with leprosy has been associated with health commitment, family collaboration, responsibility, autonomy and overcoming stigma⁽²³⁾. The lack of self-care involves issues related to patients' lack of empowerment and awareness of the severity of the disease⁽²⁴⁾, negative body image, the stigma suffered and the fear of losing their job.

The Deficit of knowledge about the disease by the patient, family and community was also identified in other studies aimed at this population⁽²⁵⁾, which may contribute to the ineffective control of the therapeutic regime.

The nursing approach in the care for people with leprosy should be expanded in order to recognize other nursing diagnoses that are not directly related to this disease, such as smoking, obesity and sedentary lifestyle. It is a great challenge to achieve comprehensive care to this population in a way that both health promotion and disease prevention are addressed.

The supportive-educative system emerges in this scenario⁽³⁾, where health education provided by nurses is a method to help the prevention of disabilities and the promotion of health. It is necessary to ensure that people with leprosy have information about the disease that can favor the development of self-care and changes in fundamental attitudes for the prevention of disabilities⁽¹⁹⁾ and psycho-emotional support.

Nurses who work with people with leprosy should invest in the planning and execution of care strategies aimed at adherence to the therapeutic regime, which is not just medication, and increase the self-care capacity so these patients do not develop physical disabilities.

As the terminology contained in the ICNP^{®(6)} was not sufficient to allow the designation of all diagnoses identified, the use of other sources was necessary, especially to designate those that referred to developmental and health deviation self-care requisites. This implies that professionals are not limited to the ICNP^{®(6)}, although they can certainly use it as their reference or starting point. The bank of terms⁽¹⁰⁾ and the works that bring together diagnoses, interventions and outcomes^(13,14) are useful to describe nursing diagnoses in this group.

The designation of diagnoses using a standardized language may favor the comparison with results of studies aimed at this population.

A limitation of this study was the small number of participants. In addition, the fact that the clinical evaluation of patients was performed by only one professional, which, on the one hand, minimizes the risk of bias regarding standardization, but on the other hand, can contribute to underestimate the phenomena to be observed.

CONCLUSION

The profile of 60 nursing diagnoses in people with leprosy identified in nursing consultations based on Orem's theory of self-care brought to light the phenomena related to the universal, developmental and health deviation self-care requisites that require nursing interventions organized from the supportive-educative system.

Since using the standardized ICNP[®] language for the development of nursing diagnoses aimed at assisting people with leprosy was not sufficient, other sources had to be exploited. This set of nursing diagnoses can be used for the development of a terminological subset of the ICNP[®], as it was validated by experts in the field of leprosy and/or diagnostic terminologies, thereby favoring the management of information and consolidation of nursing knowledge in this area.

The use of a standardized terminology for the care of people with leprosy in Primary Health Care allows the computerized nursing documentation, favors the performance

of systematized actions, enhances the exchange of knowledge in the area and the development of new studies aimed at improving the service to this population.

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