Objective: To analyze the domains of quality of life in patients with leprosy in a city of Piauí where the disease is highly endemic.

Methods: This is a descriptive, cross-sectional study, carried out from February to November 2019. For data collection, a sociodemographic form and the SF-36 quality of life questionnaire were used. The information was analyzed using Mann-Whitney's U to compare the difference between two groups and the Kruskal-Wallis test, to compare the mean of two or more independent samples. Results: 46 patients participated in the study. When the socioeconomic and clinical variables related with the quality-of-life domains were evaluated, the "Emotional aspect" had the highest mean (78.25; sd: 39.88) while the lowest was found in the "Mental health" dimension (45.04; sd: 24.95). The variable occupation had a negative relation with the general state of health (p=0.002) and mental health (p=0.009).

Conclusion: Most dimensions evaluated presented a good score, indicating that the quality of life of the population studied was good. The exception were the dimensions "mental health" and "general state of health" when related with the variable occupation, whose score was low, indicating that the quality of life in these dimensions was low.

Descriptors: Quality of Life. Leprosy. Endemic Diseases.
**INTRODUCTION**

According with literature, leprosy is an infectious disease caused by the bacillus *Mycobacterium leprae*.\(^1\) It is considered to be one of the oldest pathologies in the world and is associated with poor social and economic conditions.\(^2,3\) Its transmission takes place through prolonged contact with infected individuals and through droplets or aerosols.\(^4,5\) The diagnosis is clinical and epidemiological, and suspected lesions must be investigated through physical and dermatoneuropathological exams.\(^6\)

Estimates show that nearly 27,000 new cases of leprosy are diagnosed every year in many low- and middle-income countries, meaning that the disease is a matter of public health.\(^7\) Moreover, there is a mean of 200,000 new diagnosis each year around the world, with more than 4 million people living with some sequela or disability caused by the disease.\(^8\)

Brazil, India, and Indonesia are countries with a high incidence of cases, with the first occupying the second place in the world ranks.\(^9,10\) In 2017 alone, nearly 13% of the more than 200,000 cases in the world took place in the Brazilian territory.\(^11\) From 2013 to 2017, the Northeast of Brazil registered the highest general number of notified cases of the disease.\(^12\)

Due to its chronic nature, when leprosy is not treated properly, it can lead to the development of physical and psychosocial disabilities,\(^13\) in addition to the stigmatization of the patient.\(^14\) Therefore, it requires care that takes into consideration the principle of comprehensiveness, in addition to access to the many levels of health care.\(^15\)

The medication treatment is carried out with antibiotics and called polychemotherapy (PCT). It aims to eliminate the bacteria from the body,\(^16\) and reduce the morbidity and mortality provoked by the pathology\(^17\). Even with the treatment, it has a strong impact in the life of the individual, resulting in physical, mental, and social discomfort and making daily life activities more challenging, which is made worse due to the social exclusion the patients are submitted to, all of which worsens their Quality of Life (QoL).\(^17,18\)

In regard to the QoL, many definitions can be associated with important principles, which are functional ability, socioeconomic power, satisfaction, emotional conditions, social interactions, intellectual activity, and health self-protection. Despite being a concept based on one's personal interpretation, people with leprosy have their QoL damaged as well.\(^19\) As a result, it is necessary to broaden the researchers that evaluate the QoL of this public, which would be essential to direct and carry out health policies.\(^20\)

In this context, considering the high number of diagnoses, their complexity, and the conditions that impact QoL, this research aims to analyze the QoL of individuals diagnosed with leprosy to ascertain these factors. This is justified by the need to increase the knowledge and the number of existing studies on the topic, so future actions to improve the QoL of those affected by the disease can be planned.

**METHOD**

This is a descriptive and cross-sectional study, carried out between February and November 2019, about the QoL of patients diagnosed with leprosy in the city of Picos-PI. The population of the study included 90 patients who received the diagnosis of the disease in Picos from 2015 to 2018 and were identified using records available in the Reference Center for the Treatment of Leprosy, which attends Picos and its neighboring cities, providing from diagnosis to the delivery of PCT.

For the selection of the sample, patients with a diagnosis of leprosy were included in the period mentioned above and registered in the reference center. Patients absent after three attempts of data collection were excluded (n=22), as well as those with invalid telephone information (n=15), minors (n=6), hospitalized patients (n=0), and those who passed away (n=1), to a total of 44 excluded patients. As a result, 46 were included.

Regarding data collection, after the identification of patients, the researchers invited them to go to the reference service. There, the goals of the research were explained and, after the participants agreed to participate and signed the Free and Informed Consent Form, data collection instruments were applied.

The instruments used were a sociodemographic form including the variables: sex, color, age group, marital status, income, educational level, profession, morbidities, practice of physical activity, and whether the patient used medication unrelated to the treatment of leprosy. The quality of life questionnaire SF36 was also applied, including 11 questions and 36 items (each with its respective value) in eight domains: functional capacity (ten items), physical aspects (four items), pain (two items), general state of health (five items), vigor (four items), social aspects (two items), emotional aspects (three items), mental health (five items), and a question comparing the participant's current perception of their health and their perception about their health one year prior. To interpret the answers, the numerical value of the answers was converted into a grade. The grades varied from 0 (zero) to 100 (one hundred), where 0 = the worst and 100 = the best result for each domain. This method is called Raw Scale, as the final value has no measuring unit. Using the final raw sale score, data were organized in tables and went through descriptive and inferential analyses carried out using the software Statistical Package for the Social Sciences (SPSS), version 20.0. After the tabulation of the data and the analysis of the results, the percentages from 0 to 100 were considered. the closest to 100%, the better the general QoL of the patient.

The descriptive statistics were analyzed through socioeconomic and clinical analysis, as well as the statistical inference. Mann-Whitney’s U was used to compare between groups, and Kruskal-Wallis’s test, which is used to compare the mean of two or more
RESULTS

The sample included 46 patients with diagnosed leprosy. Most were female (58.7%), above 50 years old (52.2%), with incomplete elementary education (52.2%) and single (37.0%). Nearly 37.0% self-declared black and 58.7% declared to have an income below one minimum wage. Retirement pensions were the most common financial resource (37.0%) (TABLE 1).

Regarding the clinical variables studied using the sociodemographic form, most mentioned the presence of associated morbidities (76.1%), such as systemic arterial hypertension (SAH) (39.2%), Diabetes Mellitus (DM) (39.1%), the use of medication not associated with leprosy (69.6%), and 56.5% reported to be physically sedentary (TABLE 2).

Regarding statistical inferences, the eight domains of the instrument of QoL evaluation (SF-36) were associated with the sociodemographic and clinical variables of the participants (TABLE 3). The domain with the highest mean was Emotional Aspect (78.25; sd: 39.88), suggesting a positive dimension to the QoL of the person evaluated.

The mental health dimension, in turn, showed the lowest mean (45.04; sd: 24.95), being a negative factor in the evaluation of the QoL of the individuals evaluated. There was no significant association between any of the other domains, such as skin color and age group.

Still in regard to SF-36 dimensions and sociodemographic and clinical variables, Table 4 shows a significant association between educational level, profession, and morbidity, with p<0.021, p=0.044, and p=0.013, respectively.

The Kruskal-Wallis test showed that the variable occupation had an effect over the following dimensions: general state of health (p=0.002), social aspect (p=0.015), and mental health (p=0.009). The paired comparisons of the test mentioned showed the influence of the group that does not work/unemployed.

Then, the absolute and relative distribution of frequency of both sexes was carried out, according with their score in the questionnaire, which was classified as low, medium, or high for each domain. It is noteworthy that high scores were more common, for both sexes, in physical aspects, with the men scoring 16 (84.2%) and the women 19 (70.4%) in this domain. Emotional aspects were the second highest, with 15 (78.9%) and 19 (70.4%), respectively, showing a good QoL in these domains. In turn, for both sexes, low scores were most frequent in the mental health domain.

DISCUSSION

The results of this research found a higher number of female participants, disagreeing with a previous study that showed that most individuals with leprosy found in the database of the System of Notification of Information about Health Issues ( SINAN ), from 2013 to 2017, in three states in the Brazilian northeast, were male. (12)

Regarding their age group, a study carried out in public referral hospitals for the treatment of leprosy in João Pessoa found that most participants were older than 50 years of age, corroborating this research. (22)

Regarding the clinical variable, a research showed similar results, indicating that participants were more commonly affected by SAH (56.3%) and DM (41.8%). (23) Literature reports that comorbidities may also be associated with the more advanced age group and result from aging, since elders tend to have other associated disease and a higher risk for complications. (24)

In our study, there was a significant number of responses referring to other diseases, such as: arthrosis, arthritis, slipped disc, gastritis, depression, ankylosing spondylitis, and osteoporosis. The results of a previous study corroborate this work, as it found that the high number of participants with comorbidities is a portrait of the lack of integral health care, one that is not focused on the treatment of a single disease, but on the attempt to provide therapies capable of anticipating diagnosis, favoring QoL, and transforming the setting of leprosy in Brazil. (25)

Regarding the domains of the QoL instrument, unlike in our research, a work carried out in São Luís-MA, presented a higher mean for mental health (64.38) and a lower one for physical aspects (20.0). (26) Another research found a higher mean for social aspects (73.6%). (27)

A study discovered an unsatisfactory result for most participants regarding QoL and the domains analyzed, including those related with Mental health. 73.8% of patients with some form of mental disorder stated that they are using some form of psychoactive substance, showing that the prejudice they experience, associated with the stigma, the pain, and the disabilities provoked by the disease, justify the impact on their emotional and mental health. (28)
Table 2. Numerical (n) and percentage (%) distribution of clinical variables of people with leprosy (n=46). Picos-PI, Brazil, 2019

| Variables               | n  | %   |
|-------------------------|----|-----|
| Sex                     |    |     |
| Male                    | 19 | 41.3|
| Female                  | 27 | 58.7|
| Skin color              |    |     |
| White                   | 14 | 30.4|
| Black                   | 17 | 37.0|
| Brown                   | 15 | 32.6|
| Age group               |    |     |
| 18-29 years old         | 6  | 13.0|
| 30-39 years old         | 6  | 13.0|
| 40-49 years old         | 10 | 21.7|
| 50 years old or older   | 24 | 52.2|
| Marital Status          |    |     |
| Single                  | 17 | 37.0|
| Married                 | 14 | 30.4|
| Divorced                | 3  | 6.5 |
| Widow/widower           | 12 | 26.1|
| Family income           |    |     |
| < 1 minimum wage        | 11 | 23.9|
| 1 minimum wage          | 27 | 58.7|
| 2 minimum wages         | 7  | 15.2|
| > 2 minimum wages       | 1  | 2.2 |
| Years of formal education|    |     |
| Illiterate              | 9  | 19.6|
| Incomplete elementary school | 24 | 52.2|
| Complete elementary school | 12 | 26.1|
| Incomplete high school  | 1  | 2.2 |
| Profession              |    |     |
| Studies                 | 3  | 6.5 |
| Works                   | 16 | 34.8|
| Does not work/unemployed| 10 | 21.7|
| Retired                 | 17 | 37.0|

Source: Research Data, 2019.

*minimum wage in 2019 (R$ 954)

Table 3. Association between the score of the SF-36 domains and the sociodemographic variables of people with leprosy (n=46). Picos-PI, Brazil, 2019

| Domains | Meand (sd) | Variables and significance levels (p-value) |
|---------|------------|--------------------------------------------|
|         | Color      | Age group                                  | Income |
| FC      | 63.37 (±35.15) | 0.585                                       | 0.383   | 0.046   |
| PA      | 77.17 (±39.73) | 0.662                                       | 0.739   | 0.158   |
| P       | 54.52 (±38.29) | 0.711                                       | 0.632   | 0.873   |
| GHS     | 45.58 (±21.19) | 0.508                                       | 0.811   | 0.159   |
| V       | 62.95 (±22.47) | 0.919                                       | 0.563   | 0.475   |
| SA      | 73.29 (±30.65) | 0.516                                       | 0.952   | 0.317   |
| EA      | 78.25 (±39.88) | 0.411                                       | 0.905   | 0.457   |
| MH      | 45.04 (±24.95) | 0.402                                       | 0.628   | 0.049   |

Source: research data, 2019*Kruskal-Wallis's test

Caption: FC = functional capacity; V = vigor; PA = physical aspect; SA = social aspect; P = pain; EA = emotional aspect; GSH = general state of health; MH = mental health

Table 4 Association between the score of the SF-36 domains and the socioeconomic and clinical variables of people with leprosy (n=46). Picos-PI, Brazil, 2019

| Domains | Variables and significance levels (p-value) |

Caption: ENglish Rev Enferm UFPI. 2021 10:e1020. DOI: 10.266/4/reufpi.v10i1.1020
The quality of life of patients diagnosed with leprosy has strong psychological impact on the individuals, especially due to the stigma the disease brings with it, which often leads them to hide it, as they are afflicted by fear, shame, sadness, and anxiety, becoming more distant from the health service and with serious repercussions regarding the QoL. (29)

The item functional capacity, in this work, was the most influenced by the variables, suggesting that it has a close connection with the disadvantages of leprosy, which can be clinical and/or, mainly, sociodemographic.

The person affected by leprosy can develop physical disabilities due to changes in their sensitivity, which often cause damage that is difficult to fix. The bacillus M. leprae attacks the fibers of the peripheral nervous system, leading to sensory, motor, and autonomous changes and making it more...
The quality of life of patients diagnosed with leprosy...

Leprosy is a complex disease associated with a historic stigma, and these elements make it hard to provide early diagnoses or to have a prognostic free of sequelae. Therefore, it is extremely important to carry out new researches on the topic, to strengthen the measures for dealing with the disease, to look more carefully at this public, and to improve the attention provided to patients and their QoL.

REFERENCES

1. Niitsuma ENA, Bueno IC, Antares EO, Carvalho APM, Xavier Junior GF, Fernandes GR, et al. Fatores associados ao adoelecimento por hanseníase em contatos: revisão sistemática e metaanálise. Rev. Bras. Epidemiol [Internet]. 2021;24:e210039. doi: https://doi.org/10.1590/1980-549720210039

2. Lopes FC, Ramos ACV, Pascoal LM, Santos FS, Rollim ILTP, Serra MAAC, et al. Leprosy in the context of the family health strategy in an endemic scenario in maranhão: Prevalence and associated factors. Gênes e Saúde Colet. [Internet]. 2021;26(5):1805-16. doi: 10.1590/1413-81232021265.04032021.

3. Organização Mundial da Saúde. Estratégia global de Hanseníase 2021-2030: “Rumo a zero hanseníase”. Escritório Regional para o Sudeste Asiático, OMS, 2021. Disponível em: http://apps.who.int/iris

4. Costa AKAN, Pfrimer IAH, Menezes AMF, Nascimento, LB, Carmo Filho JR. Clinical and epidemiological aspects of leprosy. Rev Enferm UFPE [Internet]. 2019;13(9):353-62. doi: https://doi.org/10.5203/1981-8963.v13i2a362324p353-362-2019

5. Passos ALV, Araújo LF. Representações sociais da hanseníase: um estudo psicossocial com moradores de um antigo hospital colônia. Interações Estud. Pesqui. Psicol. [Internet]. 2020;21(1):93-105. doi: https://doi.org/10.20435/inter.v21i1.1944

6. Veloso DS, Melo CB, Sá TLB, Santos JP, Nascimento EF, Costa FAC. Perfil clínico epidemiológico da hanseníase: uma revisão integrativa. REAS. [Internet]. 2018;10(1):1429-37. doi: 10.25248/REAS146.2018

7. Silva CO, Dias AA, Nery JAC, Machado AM, Ferreira H, Rodrigues TF, et al. Neutrophil extracellular traps contribute to the pathogenesis of leprosy type 2 reactions. PLoS. Negl. Trop. Dis. [Internet]. 2019;13(9):e0007368. doi: 10.1371/journal.pntd.0007368

8. Deps P, Cruz A. Why we should stop using the word leprosy. Lancet. Infect. Dis. [Internet]. 2020;20(4):e75-8. doi: 10.1016/S1473-3099(20)30061-X

9. Leite TRC, Silva IGB, Lanza FM, Maia ER, Lopes MSV, Calvacante EGR. Ações de controle da hanseníase na atenção primária à saúde: uma revisão integrativa. Vittalle. [Internet]. 2020;32(3):175-86. doi: https://doi.org/10.14295/vittalle.v32i3.11080

10. Meneses LSL, Dias LKBF, Santos PHS, Borges WD, Neres MRM, Medeiros RL. Atenção da enfermagem na prevenção, diagnóstico e tratamento da Hanseníase na atenção primária a saúde em Baião PA: um relato de experiência. Braz J Dev. [Internet].

CONCLUSION

It was possible to determine that, in most dimensions evaluated, a good score suggested a good QoL, with the lowest scores in the items mental health and general health state, showing that the QoL in these aspects was low.
The quality of life of patients diagnosed with leprosy. https://doi.org/10.1590/1980-220X-REEUSP.2020-0357

11. Rodrigues RN, Arcêncio RA, Lana FCF. Epidemiologia da Hanseníase e a descentralização das ações de controle no Brasil. Rev. Bras. Enferm. [Internet]. 2021;35:e39000. doi: 10.18471/rbe.v35.39000

12. Pescarini JM, Teixeira CSS, Silva NB, Sanchez AN, Nativede MS, Rodrigues LC, et al. Epidemiological characteristics and temporal trends of new leprosy cases in Brazil: 2006 to 2017. Cad. saúde pública. [Internet]. 2021;37(7):e00130020. doi: 10.1590/1980-0231X00130020

13. Marquetti CP, Sommer JAP, Silveira EF, Schröder NT, Périco E. Perfil epidemiológico dos acometidos por Hanseníase em três estados da região Norte do Brasil. Monogr. soc. res. child dev. [Internet]. 2022;11(1):e38811124872. doi: http://dx.doi.org/10.33448/rsd-v11i1.24872

14. Silva JSR, Palmeira IP, Sá AMW, Nogueira LMV, Ferreira AMR. Fatores sociodemográficos associados ao grau de incapacidade física na Hanseníase. Rev. Cuid. (Bucaramanga. 2018). 2021;9(3):2338. DOI: https://doi.org/10.33448/rsd-v11i1.24872

15. Jesus MD, Santos TD, Correia MD, Rosa Neto NA, Ornelas LB, Almeida LFN, et al. Perfil epidemiológico da Hanseníase em Alagoas e na sua região de saúde. BJHR. [Internet]. 2018;9(3):2338-48. doi: http://dx.doi.org/10.15649/cuidarte.v9i3.548

16. Lira RMN, Silva MVS, Gonçalves GB. Fatores relacionados ao abandono ou interrupção do tratamento de Hanseníase: uma revisão integrativa da literatura. Rev. Enferm. UFPI. [Internet]. 2017;21(6):2632-38. DOI: 10.34119/bjhrv4n6-215

17. Bernardes MP, Oliveira GS, Grattapaglia RPA, Melo JO, França CW, Pereira GMA. Análise do perfil epidemiológico da Hanseníase no Brasil no período de 2010 a 2019. BJHR. [Internet]. 2021;4(6):23692-9. doi: http://dx.doi.org/10.34119/bjhrv4n6-002

18. Benedicto CB, Marques T, Milano AP, Galan NGA, Nardi ST, Duersken F, et al. Quality of life, physical disability, and the human figure drawing assessment of patients with neuropathies in leprosy. Acta Pisiátrica. [Internet]. 2017;24(3):120-6. doi: https://doi.org/10.5935/0104-7795.20170022

19. Ribeiro DM, Lima BVM, Marcos EAC, Santos MEC, Oliveira DV, Araújo MB, et al. Panorama epidemiológico da Hanseníase, doença tropical negligenciada que assola o nordeste brasileiro. Monogr. soc. res. child dev. [Internet]. 2022;11(1):e23111124884. doi: 10.33448/rsd-v11i1.24884

20. Simões S, Castro SS, Scatena LM, Castro RO, Lau FA. Qualidade de vida dos portadores de Hanseníase num município de médio porte. Medicina (Ribeirão Preto). [Internet]. 2016;49(1):60-7. doi: https://doi.org/10.11606/issn.2176-7262.v49i1p60-67

21. Barcelos RMFM, Sousa GSS, Almeida MV, Palacio FGL, Galva MAM, Ferreira, SMB. Qualidade de vida de pacientes com Hanseníase: uma revisão de escopo. Rev. Esc. Enferm. USP. [Internet]. 2021;55:e20200357. doi: https://dx.doi.org/10.26694/reufpi.v55i1.2020

22. Ruela GA, Simões JC. Perfil epidemiológico da Hanseníase em um município do interior do estado de Minas Gerais, Brasil (2001-2015). Rev. Bras. Pesqui. Saúde. [Internet]. 2019;29(4):93-103. Disponível em: https://periodicos.ufes.br/rbps/article/view/24603/16759

23. Almeida AIS, Nogueira MA, Feitosa EBJ, Corrêa CA, Vasconcelos JS, Soma RF, et al. Marcas do passado: memórias e sentimentos de (ex) portadores de Hanseníase residentes em um antigo "leprosário". Enferm. Foco (Brasília). [Internet]. 2018;9(4):13-7. doi: https://doi.org/10.21675/2357-707X.2018.v9.n4.1353

24. Nogueira PSF, Marques MB, Coutinho JFV, Maia JC, Silva MJ, Moura ERF. Factors associated with the functional capacity of older adults with leprosy. Rev. Bras. Enferm. [Internet]. 2017;70(4):744-51. doi: https://doi.org/10.1590/0103-7185-2017-0091

25. Silva PSR, Cunha NGT, Oliveira LS, Santos MCA. Perfil clínico-epidemiológico de pacientes portadores de Hanseníase em um município do Maranhão. REAS. [Internet]. 2020;12(8):e3468. doi: https://doi.org/10.25248/reas.e3468.2020

26. Bezerra MKHL, Alves TM, Furtado LAF, Venceslau JSP, Ribeiro Filho J. Prática do autocuidado em Hanseníase - revisão sistemática. BJD. [Internet]. 2020;6(8):54187-205. DOI: 10.34117/bjdv6n8.001

27. Torres DC, Pinho KS, Borges CKS, Lopes APB, Costa GP, Gonçalves MC, et al. Comparação da qualidade de vida de indivíduos com e sem Hanseníase. Revista Ceruma Perspectivas. [Internet]. 2017;30(2):64-77. Disponível em: file:///C:/Users/user/Downloads/152-724-1-PB.pdf

28. Amorim AAS, Pereira ISSD, Silva Júnior EG. Análise da qualidade de vida de pacientes acometidos por Hanseníase. Can. J Infect. Control. [Internet]. 2016;5(4). Disponível em: https://jic.abbih.com.br/index.php/jic/article/view/154

29. Govindanar J, Prinivasan S, Darlond J. Perception toward the disease of the peopleaffected by leprosy. Int J Mycobacteriol. [Internet]. 2018;7(3):247. doi: 10.4103/ijm.im.jvm.66.18

30. Brasil. Ministério da Saúde. Diretrizes para vigilância, atenção e eliminação da Hanseníase como problema de saúde pública: manual técnico-operacional. [Internet] 2016. Disponível em: http://www.saude.sp.gov.br/resources/ceve-controle-de-vigilancia-epidemiologica/areas-de-vigilancia/hanseniose/doc/hans16_manual_tecnico_o_peracional.pdf

31. Finotti RFC, Andrade ACS, Souza DPO. Transtornos mentais comuns e fatores associados entre pessoas com Hanseníase: análise transversal em Cuiabá, 2018. Epidemiol. Serv. Saude (Online). [Internet]. 2020;29(4):e2019279. doi: https://doi.org/10.5123/S1679-49742020000400006

32. Gonçalves M, Santos KS, Silva SS, Marcussi TC, Cavalcão KV, Fortuna CM. Mulheres e Hanseníase: interferências e vivências.

English
Rev Enferm UFPI. 2021 10:e1020. DOI: 10.26694/reupf.v10i1.1020
ISSN: 2238-7234
Souza ICP *et al.*, Rev Lat Am Enfermagem. [Internet]. 2021;29:e3419. doi: 10.1590/1518-8345.4347.3419

33. Lima ABA, Tavares CM, Santos TS, Goes FS, Vieira NF, Figueredo AAS. Perfil sociodemográfico e avaliação neurofuncional de mulheres no pós-alta de hanseníase, RSD. [Internet]. 2021;10:e110101623020-e110101623020. doi: 10.33448/rsd-v10i16.23020.

The quality of life of patients diagnosed with leprosy.
Financing source: No
Conflicts of interest: No
Date of submission: 2021/04/15
Accepted: 2021/10/28
Publication: 2021/12/15

Corresponding author:
Izabhel Chryistine Pereira de Souza
Email: izabhelts2@hotmail.com

How to cite this article:
Souza ICP, Correia VGA, Velôso HP, Luz LE. The quality of life of patients diagnosed with leprosy in a city in Piauí Rev Enferm UFPI [internet]. 2021 [cited ano mês abreviado dia]: 10: e1020. Doi: 10.26694/reufpi.v10i1.1020