

RESEARCH ARTICLE (ORIGINAL) 

Health Literacy of Informal Caregivers of Older Adults from the Perspective of Madeleine Leininger's Theory

Literacia em Saúde de Cuidadores Informais de Pessoas Idosas à Luz da Teoria de Madeleine Leininger

Alfabetización en la Salud de los Cuidadores Informales de Personas Ancianas desde la Perspectiva de la Teoría de Madeleine Leininger

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Abstract

Background: Informal caregivers' health literacy (HL) should be included in public health policies.

Objective: To assess the HL of informal caregivers of older adults admitted at a university hospital from the perspective of Madeleine Leininger's Theory of Culture Care Diversity and Universality (CCT).

Methodology: Exploratory study with a quantitative approach on a sample of 37 informal caregivers of older people. Data were collected using the Brazilian version of the European Health Literacy Survey Questionnaire and analyzed according to the CCT.

Results: Informal caregivers' HL was inadequate (21.7). The Health Promotion domain obtained the highest score (23.6), while Disease Prevention obtained the lowest (20.1).

Conclusion: Informal caregivers' HL was inadequate, indicating a gap in educational actions for training decision-making in health.

Keywords: cultural care; nursing theory; caregivers; elderly; health literacy

Resumo

Enquadramento: A literacia em saúde (LS) dos cuidadores informais deve ser abordada nas políticas de saúde pública.

Objetivo: Avaliar o nível de LS de cuidadores informais de pessoas idosas admitidas num hospital universitário, à luz da Teoria da Diversidade e Universalidade do Cuidado Cultural (TDUCC) de Madeleine Leininger.

Metodologia: Estudo exploratório, de natureza quantitativa, com uma amostra de 37 cuidadores informais de pessoas idosas. Os dados foram recolhidos através da versão brasileira do *European Health Literacy Survey Questionnaire* e analisados com base na TDUCC.

Resultados: A LS dos cuidadores informais revelou-se inadequada, com um valor global médio de 21,7. O domínio com maior pontuação foi o da Promoção da Saúde (23,6) e o com a pontuação mais baixa foi o da Prevenção da Doença (20,1).

Conclusão: A LS dos cuidadores informais foi considerada inadequada, evidenciando necessidade de intervenções educativas que promovam a capacitação para a tomada de decisão em saúde.

Palavras-chave: cuidado culturalmente competente; teoria de enfermagem; cuidadores; idoso; literacia em saúde

Resumen

Marco contextual: Es necesario promover la inclusión de la alfabetización en la salud (AS) de los cuidadores informales en las políticas de salud pública.

Objetivo: Evaluar la AS de los cuidadores informales de personas ancianas atendidas en un hospital universitario desde la perspectiva de la Teoría de la Diversidad y Universalidad de los Cuidados Culturales de Madeleine Leininger (TDUCC).

Metodología: Estudio exploratorio con enfoque cuantitativo en una muestra de 37 cuidadores informales de personas ancianas. Se utilizó la versión brasileña del *European Health Literacy Survey Questionnaire* (HLS-EU-BR). Los datos se analizaron según la TDUCC.

Resultados: La AS de los cuidadores informales fue de 21,7, lo que resulta inadecuado. El ámbito con mejor puntuación fue Promoción de la salud (23,6) y Prevención de la enfermedad (20,1), el peor.

Conclusión: La AS de los cuidadores informales fue inadecuada, lo que indica una laguna en las acciones educativas para mejorar la toma de decisiones sanitarias.

Palabras clave: salud intercultural; teoría de enfermería; cuidadores; anciano; alfabetización en salud



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Introduction

Health literacy (HL) refers to the set of cognitive and social skills that enable individuals to access, understand, appraise, and apply information to maintain and improve their health, encompassing the ability to exert greater control over their health, seek out information and take responsibility for their health (Nunes, 2014).

International literature shows that higher levels of HL are associated with greater health promotion and disease prevention, leading to healthier lives and a more cost-effective mobilization and use of resources, consequently resulting in a more effective and efficient health system (Shahid et al., 2022).

Population aging is a global reality that affects both developed countries and developing countries. This situation is the result of technological innovations, low fertility rates, and reduced mortality (Garizábalo-Dávila et al., 2024). In Brazil, the rapid demographic transition is resulting in an ever-increasing proportion of hospital care for older adults. In 2019, those aged 60 and over accounted for 15.7% of the Brazilian population, yet represented 26.4% of those receiving care from the Unified Health System (SUS; Instituto Brasileiro de Geografia e Estatística, 2024). This trend is likely to accelerate in the coming years, presenting the hospital network with the challenge of developing more efficient care pathways, including HL programs for informal caregivers, in order to meet the specific needs of this population (Garcez-Leme & Leme, 2014).

In 2002, the caregiver's role was recognized in Brazil as the individual responsible for assisting and promoting the well-being, health, nutrition, hygiene, education, culture, and leisure of dependent individuals, without receiving any form of financial compensation (Ceccon et al., 2021). Informal caregivers are primarily responsible for providing health care to older adults. Therefore, it is essential that they receive training in caring for hospitalized older people to avoid complications and reduce the functional decline associated with hospitalization (Martínez-Velilla et al., 2019).

The literature shows that informal caregivers' HL is low, contributing to poor quality of care and difficulty in understanding the instructions provided by health professionals. Therefore, it is essential to consider the evaluation of informal caregivers' HL in public health policies, with a view to improving the health outcomes of caregivers and the older people they care for (Araújo, 2023).

The scarcity of literature on the subject reflects the unprecedented nature of this study, which, to the best of our knowledge, is the first investigation in a hospital setting on the HL of informal caregivers of older people admitted at the Geriatrics Department in the region of the Amazon. In addition, HL can play an important role in both maintaining and improving the health status of the population.

Thus, this study aims to assess the HL among informal caregivers of older people admitted at a university hospital from the perspective of Madeleine Leininger's Theory of Cultural Care Diversity and Universality (CCT).

Background

From 2009 to 2015, European countries, including Austria, Bulgaria, Germany, Greece, Ireland, the Netherlands, Poland, Spain, and Portugal came together and created the Health Literacy Survey-European Union (HLS-EU) Consortium to measure and assess HL (Vaz, 2021). This study and research initiative resulted in the preparation of an instrument to assess HL levels, the HLS-EU-Q. This questionnaire was translated into European Portuguese and validated for the Portuguese context in 2013 (HLS-EU-PT; Vaz, 2021). Subsequently, the instrument underwent a cultural adaptation to Brazilian Portuguese (HLS-EU-BR) carried out by the study and research group Promotion in Communication, Education and Health Literacy in Brazil – ProLiSaBr (Nunes et al., 2019). Furthermore, a multidimensional definition of HL was proposed by the Health Literacy Europe network (Sørensen, 2019):

Health literacy is linked to literacy and entails the motivation, knowledge, and competencies to access, understand, appraise and apply health information in order to make judgments and take decisions in everyday life concerning healthcare, disease prevention and health promotion to maintain or improve quality of life throughout the course of life. (p. 27)

This conceptual model relates the health information processing skills (accessing, understanding, appraising, and applying) to the three fundamental domains of health: healthcare, disease prevention, and health promotion, resulting in 12 HL sub-dimensions (Vaz, 2021). Nunes et al. (2019) highlight and define the three fundamental domains of health, which are:

DOMAIN 1 - Healthcare and curative care refers to the ability to obtain information on medical or clinical problems, to understand, interpret, and evaluate medical information, and to make informed decision on health issues; DOMAIN 2 - Disease prevention involves the ability to access, understand, and evaluate information on risk factors, and judge the relevance of this information; DOMAIN 3 - Health promotion is related to the ability to stay updated on determinants of health, to understand, and to appraise health-related information, and the ability to make informed decisions on health issues.

The daily practice of caregiving can result in a lower quality of life, overload and tension for caregivers due to several factors such as lack of preparation to take on this mission, often caused by an insufficient amount of information, knowledge, or skills for care; financial problems due to illness-related costs, pain management, and end-of-life care; family conflicts due to resistance to sharing caregiving responsibilities; the advanced age of many caregivers, who are often older adults with chronic diseases; and the absence of public policies aimed at informal caregivers, which makes them more vulnerable to illness (Souza Filho et al., 2022).

From this perspective, Madeleine Leininger developed the CCT. The main proposal of the CCT is to promote care with a holistic view of individuals, considering their



social and cultural contexts, emphasizing scientific and humanistic knowledge (Almeida et al., 2021; Silva et al., 2021). The CCT argues that the people of each culture are able to recognize and interpret how they experience and perceive their care, so that health education can contribute to populations using their knowledge to meet their needs in the health-disease process (Silva et al., 2021). In this way, the CCT's theoretical assumptions provide the opportunity to observe and identify differences, or even similarities, in the HL of informal caregivers in different populations, thus reducing health inequities through the promotion of health policies that focus on individuals and populations. For Sørensen (2019), a paradigm shift is necessary: "instead of requiring people to deal with complex systems, health systems must change to deal with the complexities of people". Thus, care based on the CCT, by understanding the regional diversity and universality of the individual and considering them as holistic beings in their social and cultural structures, among other dimensions, helps promote well-being and adequate care for different people, families, and communities.

Research question

What is the level of HL of informal caregivers of older adults admitted to a university hospital from the perspective of Madeleine Leininger's CCT?

Methodology

This is a cross-sectional, observational, descriptive, and correlational study using a quantitative approach, following the *Strengthening the Reporting of Observational Studies in Epidemiology* (STROBE) guidelines for qualitative studies. The study was also grounded in the concepts and assumptions of culture and culturally congruent care from Madeleine Leininger's CCT (Leininger, 2015).

The research took place in the Geriatrics Department of the João de Barros Barreto University Hospital (HUIBB) in the municipality of Belém, Pará, Brazil.

Data were collected on-site through interviews conducted by the principal investigator between August 1 and October 30, 2022.

A non-probability, convenience sampling method was used. All informal caregivers accompanying older adults admitted to the HUIBB Geriatrics Department during the data collection period were interviewed, resulting in a total of 37 informal caregivers. The sample size was considered robust due to the homogeneity of the participants, which minimized data dispersion and enabled accurate analysis with a small sample, consequently making a large sample unnecessary to ensure the reliability of the findings. Methodological rigor was enhanced through data triangulation, which integrated theoretical depth and varied data collection and analysis perspectives. This approach aimed to address sample limitations by enriching the contextual understanding of informal caregivers' HL.

Inclusion criteria were: being an informal caregiver aged 18 or over, acting as the primary, secondary, and/or tertiary caregiver, not receiving financial compensation for caregiving, being able to answer the questionnaire, and being available during the data collection period. Family caregivers who were unable to answer the questionnaire for any reason (difficulty in understanding the questions) were excluded.

For data collection, family caregivers accompanying the older adults were invited to participate in the study before or after a medical and/or nursing appointment during the afternoon shift, except on public holidays, in accordance with the Geriatrics Department's routine. The interviews were held in a designated room to ensure confidentiality of the information provided by both informal caregivers and older adults and lasted approximately 20 to 30 minutes. Two instruments were used for data collection: i) a sociodemographic and care questionnaire developed by the researcher, including caregiver variables (age, gender, marital status, education level, and where did the caregiver live in relation to the older adult) and the caregiving context variables (caregiver's health status, perceived impact of caregiving on their health, responsibility for any other older adults, degree of kinship); ii) and the HLS-EU-BR, a validated instrument adapted to Brazil, consisting of 47 items across three domains: healthcare (16 items), disease prevention (16 items), and health promotion (15 items). The HLS-EU-BR demonstrated strong internal consistency (Cronbach's $\alpha > 0.80$) and uses a 4-point Likert-type scale (*very easy, easy, difficult and very difficult*), with an additional "don't know/does not answer" option, enabling the interviewee's self-assessment and self-perception when faced with different health-related issues. Scores range from 0 to 50 points, with zero representing the minimum level and 50 representing the maximum level of HL. HL levels are classified as: *inadequate* (0-25); *problematic* (25,1-33); *sufficient* (33,1-42) and *excellent* (42,1-50). HL was calculated using the formula: $HL = (\text{mean} - 1) * (50 / 3)$. In the context of the CCT, the instrument applied to informal caregivers seeks to provide a broader understanding of the cultural barriers that influence HL.

This operational integration of the CCT into the HLS-EU-BR integrates the informal caregiver's cultural knowledge with their ability to understand and apply health information. This approach allows planning interventions that adapt guidelines to informal caregivers' realities, respecting their beliefs and promoting culturally congruent care.

Data were analyzed using *Epi Info*TM version 7.2.5.0 and *GraphPad Prism* version 8. The nonparametric chi-square goodness-of-fit test was used for univariate categorical variables, and G tests were used for bivariate categorical variables. One-way ANOVA was used for numerical variables, as the assumptions of normality were met (assessed by the Bartlett's test), with a statistical significance level set at 5% ($\alpha = 0.05$).

The study was carried out in accordance with the principles of the 2013 Declaration of Helsinki, ensuring data confidentiality and anonymity for all participants. It was approved by the Ethics Committee of the Federal University of Pará under opinion no. 5.312.450.

Results

The study sample consisted of 37 informal caregivers, mostly female ($n = 34$; 92%), with a mean age of 48 years, married ($n = 23$; 62%), with a high school diploma ($n = 16$; 43%) and living in the same household as the older adult being cared for ($n = 17$; 46%). Regarding the caregiving context, the majority of the interviewees reported a good health status ($n = 20$; 54%), not influenced by caregiving ($n = 21$; 56.7%). The majority was responsible

for one older adult ($n = 17$; 45.9%), a father/mother ($n = 24$; 64.8%).

Informal caregivers' HL was classified as inadequate. The overall mean HL score was 21.7 (inadequate literacy). The three assessed domains obtained the following mean scores: Healthcare, 21.7; Disease prevention, 20.1; and Health promotion, 23.6—the highest among the three. The reliability of the instrument, assessed by Cronbach's alpha, was .92, ranging from .75 to .92, indicating high reliability for this population (Table 1).

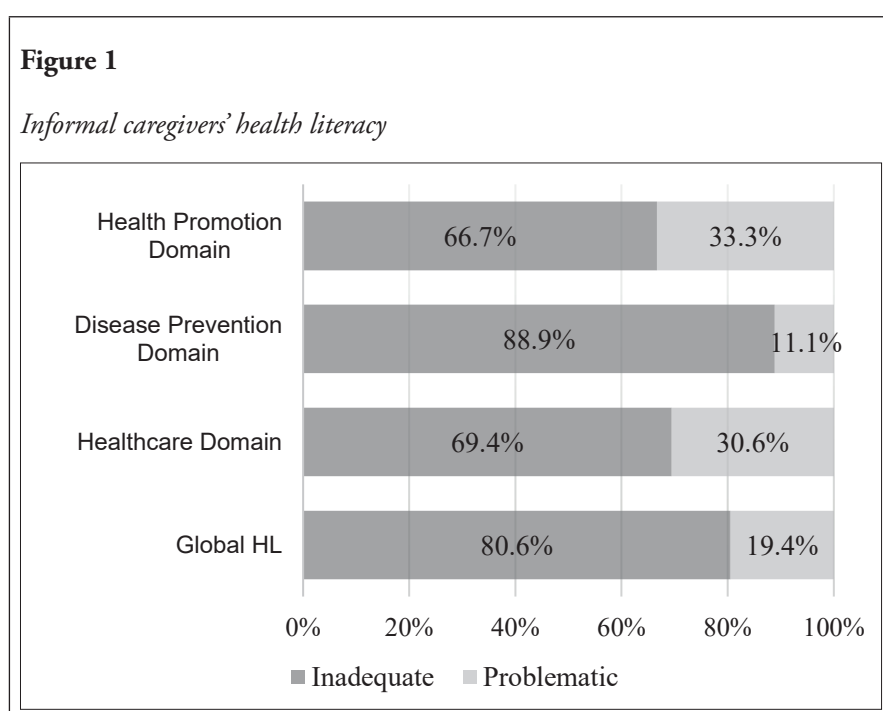
Table 1

Cronbach's alpha, mean, and standard deviation of global health literacy and its domains

Scale/Domain	Number of items	Cronbach's alpha	Mean	SD
Global HL	47	0.927	21.7	4.7
Healthcare	16	0.842	21.7	4.9
Disease prevention	16	0.895	20.1	5.2
Health promotion	15	0.752	23.6	5.3

Note. SD = Standard deviation.

Informal caregivers' HL was classified as inadequate and/or problematic ($n = 37$; Figure 1).



A statistically significant association was found between the caregiving context and HL, specifically regarding the variable "How many people do you care for?" and

Problematic HL ($p < .001$). This finding suggests that the more individuals an informal caregiver is responsible for, the higher their HL level (Table 2).

Table 2*Association between the number of older people cared for and the health literacy level of informal caregivers*

Variable	Problematic		Inadequate		<i>p</i> -value
	<i>n</i>	%	<i>n</i>	%	
How many people do you care for?					
One	1	14.3	16	55.2	0.001*
Two	2	28.6	13	34.5	
Three	3	42.9	1	11.3	
More than three	1	14.3	0	0.0	
Total	7	100.0	30	100.0	

Note. *n* = Absolute frequency; % = Relative frequency; *p*-value = statistical significance, **p* < .05 indicates a statistically significant difference (chi-square goodness-of-fit test)

Discussion

This is the first study conducted in a hospital setting in the Amazon region to assess the HL of informal caregivers of older adults admitted to the Geriatrics Department of a university hospital in the Eastern Amazon region. The integration of HL with Madeleine Leininger's CCT supports a care approach that respects caregivers' cultural backgrounds and promotes autonomy and empowerment. The sociodemographic profile of the informal caregivers aligns with findings from studies conducted in the northeastern region of Brazil (Alves et al., 2019) and in China (Tao et al., 2020), which identified the feminization of care, characterized by female caregivers with an average age of 48 years. Historically, caregiving has been associated with women, and care has been socially constructed as a woman's responsibility (Alves et al., 2019).

As for marital status, most caregivers were married, corroborating findings from a study carried out with informal caregivers in São Paulo, Brazil (Manzini, 2016). According to Alves et al. (2019), being married may positively influence the sharing of caregiving tasks with a partner. Regarding education level, most caregivers had completed secondary education. This differs from national studies (Figueiredo, 2022; Mendes et al., 2019), which found that the majority of informal caregivers of older adults had only completed primary education. It is well established that higher education levels are associated with more positive attitudes and greater HL (Mamani et al., 2019).

In this study, the question "Where do you live in relation to the older adult you care for?" revealed a predominance of responses indicating cohabitation. This finding suggests the presence of strong informal social support, indicating the caregiver's physical proximity to the care recipient. Cohabiting with the older adult is associated with longer caregiving hours and more frequent tasks, which can lead to a higher caregiver burden. Therefore, it is important to recognize that the family plays a central role in meeting the social and health needs of older adults and the importance of providing them continuous and qualified support (Queiroz et al., 2018).

Regarding self-reported health status, most caregivers clas-

sified their health as "good" and "neither good nor bad" and reported no significant impact from the COVID-19 pandemic. A similar result was found in a study conducted with informal caregivers in the southern region of Brazil, in Santa Catarina, where caregivers also reported their health status as "good" (Maldonado et al., 2017). In this context, it is plausible that the younger age of caregivers contributed to better perceived health, since a study indicates that older caregiver age is directly associated with poorer health among informal caregivers (Wintaco et al., 2024). Self-rated health is a multidimensional indicator that encompasses physical, mental, and social health domains, reflecting an individual's recognition of symptoms, medical diagnoses, and/or functional decline (Castro et al., 2019). Regarding the demographic profile of the older adults being cared for, most were women in their 70s, reflecting a trend towards longevity. Similar results were found in studies with older adults conducted in Brazil's central-western region (Mendes et al., 2019) and in Portugal (Bonhorst, 2018).

The Cronbach's alpha values in this study, ranging from .75 and .92 for both the overall HL scale and its domains, confirm the reliability of the scale when applied to this specific population and are consistent with those of the original scale (HLS-EU Consortium, 2012) and the Portuguese version adapted for Portugal (Pedro et al., 2016). In this study, the overall HL of informal caregivers was considered inadequate and/or problematic, corroborating the findings of studies conducted in Brazil (Soares et al., 2021) and Portugal (Pedro et al., 2016). Inadequate HL is strongly associated with a limited understanding of health services and outcomes, which may contribute to higher hospitalization rates, greater prevalence and severity of chronic diseases, and poorer general health conditions (Pedro et al., 2016).

From this perspective, Madeleine Leininger advocates adapting care to cultural practices rather than following biomedical models, which may be inadequate. Since care is influenced by cultural contexts, integrating cultural elements into HL is essential to promote culturally congruent care that respects the informal caregiver-older adult dyad (Sousa et al., 2024).

Among the HLS-EU-BR domains, the highest scores were observed in the “Health promotion” domain. This domain reflects how healthcare services are provided, the quality of interactions between health professionals and patients, the ease with which people navigate the health system, and the support systems available to help them find the information and answers they need. In contrast, the lowest scores were observed in the “Disease prevention” domain, which addresses the health system’s and professionals’ responsibility in the communication process so that individuals can listen, understand, apprehend, and act the available evidence, thus being able to make better decisions and choices about their health. Thus, HL in the context of healthcare use requires more proactive action from the health system, directing interventions more towards meeting the needs of individuals (Pedro et al., 2016). In this regard, the CCT emphasizes that care must align with the informal caregiver’s cultural values, beliefs, and practices. Health professionals can apply the principles of this theory to improve informal caregivers’ HL (Leininger, 2015).

The integration of the CCT with the HLS-EU-BR instrument enhances caregiving by considering cultural aspects and HL. For example, healthcare teams can adopt accessible language to explain medications, value religious practices to encourage vaccination adherence, and promote the replacement of processed foods with healthy regional options. This approach fosters more humanized, understandable, and culturally sensitive care (Leininger, 2015).

In this study, no association was found between caregivers’ demographic profiles and HL, a result that differs from other studies carried out in Brazil (Marques & Lemos, 2018) and Italy (Lorini et al., 2023), which showed an association between informal caregivers’ gender, older age, and education level and HL.

An association was identified between the number of people cared for by informal caregivers and their HL. Specifically, the more individuals an informal caregiver is responsible for, the higher their HL level. This finding, along with national literature, supports the hypothesis that informal caregivers’ HL can be improved through health education actions, enhanced support in hospital care, and better interaction between informal caregivers and health professionals. It also underscores the importance of including HL as a component in the education and training of these professionals (Marques & Lemos, 2018). This study contributes to nursing knowledge by highlighting factors that may influence informal caregiving to older adults who are monitored in outpatient settings. It offers a basis for planning and implementing specific health actions in this population. It also highlights the lack of specific studies on informal caregivers in hospital contexts, as informal caregivers require training to provide daily care to older adults.

Limitations of this study include the use of a convenience sample, which restricts the generalizability of the findings to other types of caregivers, the cross-sectional study design, which prevents establishing temporal relationships between variables, and the context of the COVID-19

pandemic, due to the restrictions and conditions of care provided to informal caregivers and older adults, which may have affected informal caregiver-health professional interactions and access to services.

Conclusion

This study found that the informal caregivers of older adults had inadequate HL, with an association between the number of older adults cared for and HL. The HLS-EU-BR proved to be an adequate instrument for assessing the HL of informal caregivers, with good psychometric properties comparable to those in the original validation study. Madeleine Leininger’s CTT contributes to addressing inadequate HL by integrating informal caregivers’ cultural values and beliefs into care. Its modes of action make it possible to adapt guidelines in a culturally sensitive way, promoting better understanding, adherence, and support for caregivers in their daily practices, ultimately strengthening home care. In addition, assessing informal caregivers’ HL allows developing and aligning HL targeted strategies and interventions for this specific population. Therefore, implementing a HL strategy is essential in hospital settings and in the Amazon region.

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References

- Almeida, G. M., Nascimento, T. F., Silva, R. P., Bello, M. P., & Fontes, C. M. (2021). Reflexões teóricas do cuidado transcultural de Leininger no contexto da Covid-19. *Revista Gaúcha Enfermagem*, 42(esp), e20200209. <https://doi.org/10.1590/1983-1447.2021.20200209>
- Alves, B. S., Oliveira, A. S., Santana, E. S., Chaves, R. N., Marinho, M. S., & Reis, L. A. (2019). Characterization of the informal caregivers of dependent elderly according to the sociodemographic and health aspects. *Revista de Saúde Coletiva da USP*, 9, 113-118.



- Araújo, L. S. (2023). *Literacia para saúde do cuidador informal na pandemia de COVID-19 no contexto amazônico* [Dissertação de mestrado, Universidade Federal do Pará]. Repositório Científico da Universidade Federal do Pará. https://repositorio.ufpa.br/jspui/bitstream/2011/16204/1/Dissertacao_LiteraciaSaudeCuidador.pdf
- Bonhorst, D. (2018). Um novo olhar sobre a prevalência da fibrilhação auricular em Portugal: O estudo Safira. *Revista Portuguesa de Cardiologia*, 37(4), 315-317. <https://doi.org/10.1016/j.repc.2018.02.002>
- Castro, C. M., Costa, M. F., Cesar, C. C., Neves, J. A., & Sampaio, R. F. (2019). Influência da escolaridade e das condições de saúde no trabalho remunerado de idosos brasileiros. *Ciência & Saúde Coletiva*, 24(11), 4153-4162. <https://doi.org/10.1590/1413-812320182411.05762018>
- Ceccon, R. F., Vieira, L. J., Brasil, C. C., Soares, K. G., Portes, V. M., García Júnior, C. A., Schneider, I. J., & Carioca A. A. (2021). Envelhecimento e dependência no Brasil: Características sociodemográficas e assistenciais de idosos e cuidadores. *Ciência & Saúde Coletiva*, 26(1), 17-26. <https://doi.org/10.1590/1413-81232020261.30352020>
- Figueiredo, L. C., Barbosa, G. C., Monteiro D. Q., Martins, G., Silva, A. F., Ruy, L. F., Sato, T. O., & Gratão A. C. (2022). Factors associated with symptoms of physical and emotional burden in informal caregivers of the elderly. *Revista Brasileira de Enfermagem*, 75(4) e20210927. <https://doi.org/10.1590/0034-7167-2021-0927>
- Garcez-Leme, L. E., & Leme, M. D. (2014). Costs of elderly health care in Brazil: Challenges and strategies. *MedicalExpress*, 1(1), 3-8. <https://doi.org/10.593 5/MedicalExpress.2014.01.02>
- Garizábalo-Dávila, C. M., Cañon-Montañez, W., & Rodríguez-Acelas, A. L. (2024). Nursing outcomes and social support intervention for diabetes self-management: Consensus study. *Revista Cuidarte*, 15(3), e3742. <https://doi.org/10.15649/cuidarte.3742>
- Instituto Brasileiro de Geografia e Estatística. (2024). *Pesquisa nacional por amostra de domicílios contínua*. <https://biblioteca.ibge.gov.br/index.php/biblioteca-catalogo?view=detalhes&id=2101637>
- Leininger M. M. (2015). *Culture care diversity and universality: A theory of nursing*. Jones Bartlett Publishers.
- Lorini, C., Buscemi, P., Mossello, E., Schirripa, A., Giammarco, B., & Rigon, L., Alboea, G., Giorgetti, D., Biamonte, M. A., Fattorini, L., Bruno, R. M., Giusti, G., Longobucco, Y., Ungar, A., & Bonaccorsi, G. (2023). Health literacy of informal caregivers of older adults with dementia: Results from a cross-sectional study conducted in Florence (Italy). *Aging Clinical and Experimental Research*, 35(1), 61-71. <https://doi.org/10.1007/s40520-022-02271-0>
- Maldonado, B. A., Vizeu, C. B., Giacomozzi, A. I., & Berri, B. (2017). Representações sociais do cuidado ao idoso e mapas de rede social Social. *Liberabit*, 23(1), 9-22. <https://dx.doi.org/10.24265/liberabit.2017.v23n1.01>
- Mamani, A. R., Reiners, A. A., Azevedo, R. C., Vechia, A. D., Segri, N. J., & Cardoso, J. D. (2019). Elderly caregiver: Knowledge, attitudes and practices about falls and its prevention. *Revista Brasileira de Enfermagem*, 72(2), 119-126. <https://doi.org/10.1590/0034-7167-2018-0276>
- Manzini, C. S., & Vale, F. A. (2016). Resiliência em cuidadores familiares de idosos com doença de Alzheimer. *Revista Eletrônica de Enfermagem*, 18, e1190. <http://dx.doi.org/10.5216/ree.v18.37035>
- Marques, S. R., & Lemos, S. M. (2018). Health literacy and associated factors in adults primary care users. *Trabalho Educação e Saúde*, 16(2), 535-559. <https://dx.doi.org/10.1590/1981-7746-sol00109>
- Martínez-Velilla, N., Casas-Herrero, A., Zambom-Ferraresi, F., Asteasu, M. L., & Galbete, A. (2019). Effect of exercise intervention on functional decline in very elderly patients during acute hospitalization: A randomized clinical trial. *JAMA Internal Medicine*, 179(1), 28-36. <https://doi.org/10.1001/jamaintern-med.2018.4869>
- Mendes, P. N., Figueiredo, M. L., Santos, A. M., Fernandes, M. A., & Fonseca, R. S. (2019). Sobrecargas física, emocional e social dos cuidadores informais de idosos. *Acta Paulista de Enfermagem*, 32(1), 87-94. <https://doi.org/10.1590/1982-0194201900012>
- Nunes, L. A., Martins, R. A., Farinelli, M. R., & Julião, C. H. (2019). *O papel da literacia para a saúde e educação para a saúde na promoção da saúde*. Editora CRV.
- Nunes, L. S. (2014). Literacia para a saúde e a conscientização da cidadania positiva. *Revista de Enfermagem Referência*, 3(11 supl), 94-99.
- Pedro, A. R., Amaral, O., & Escoval, A. (2016). Health literacy, from data to action: Translation, validation and application of the European Health Literacy Survey in Portugal. *Revista Portuguesa da Saúde Pública*, 34(2), 259-275. <https://doi.org/10.1016/j.rpsp.2016.07.002>
- Queiroz, R. S., Camacho, A. C., Gurgel, J. L., Assis, C. R., & Santos, M. L. (2018). Perfil sociodemográfico e qualidade de vida de cuidadores idosos com demência. *Revista Brasileira de Geriatria e Gerontologia*, 21(2), 205-214. <https://doi.org/10.1590/1981-22562018021.170170>
- Shahid, R., Shoker, M., & Chu, L. M. (2022). Impact of low health literacy on patients' health outcomes: A multicenter cohort study. *BMC Health Services Research*, 22(1148), 1-9. <https://doi.org/10.1186/s12913-022-08527-9>
- Silva, E. R., Alencare, B., Diase, A., Rochal, C., & Carvalhos, C. M. (2021). Transculturalidade na enfermagem baseada na teoria de Madeleine Leininger. *Revista Eletrônica Acervo Saúde*, 13(2), e5561. <https://doi.org/10.25248/reas.e5561.2021>
- Sørensen, K. (2019). Uma visão para a literacia em saúde na Europa. In C. Lopes & C. V. Almeida (Coords.), *Literacia em saúde na prática* (pp. 27-32). Edições ISPA. <https://repositorio.ispa.pt/entities/publication/72efa066-e850-4013-a8d5-3b6f1b370bd0>
- Sousa, G. C., Gomes, L. E., & Silva, L. D. (2024). Teoria de Madeleine Leininger aplicada ao acolhimento de enfermagem para atenção primária: Uma revisão integrativa. *Contemporary Journal*, 4(12), 1-22. <https://doi.org/10.56083/RCV4N12-036>
- Souza Filho, Z. A., Sá, A. M., Cunha, L. K., Silva, T. F., Santos, R. B., Ramos, F. R., & Prado, M. L. (2022). Nursing care for the Amazon population: Knowledge production and human resource development. *Revista Brasileira de Enfermagem*, 75, e20201084. <https://doi.org/10.1590/0034-7167-2020-1084>
- Tao, X., Chow, S. K., Zhang, H., Huang, J., Gu, A., Jin, Y., He, Y., & Li, N. (2020). Family caregiver's burden and the social support for older patients undergoing peritoneal dialysis. *Journal of Renal Care*, 46(4), 222-232. <https://doi.org/10.1111/jorc.12322>
- Vaz, I. D. (2021). *A literacia em saúde dos cuidadores formais e informais* [Dissertação mestrado, Escola Superior de Saúde]. Repositório Científico do Politécnico do Porto. <http://hdl.handle.net/10400.22/17502>
- Wintaco, L. M., Quintero-Lesmes, D. C., Vargas-Soler, J. A., Barrera, D. M., Palacio, L. N., Granados, U., & Uribe, L. G. (2024). Analysis healthcare infections before and during of COVID-19 pandemic in a Colombian hospital. *Revista Cuidarte*, 15(1), e3624.