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ASSOCIATION OF HEALTH DEMANDS OF OLDER ADULTS IN PRIMARY CARE AND LONG-TERM CARE FACILITIES IN BRAZIL: APPLICABILITY OF THE NURSE CASE MANAGER MODEL

ASSOCIAÇÃO DE DEMANDAS DE SAÚDE DE PESSOAS IDOSAS DA ATENÇÃO PRIMÁRIA EM INSTITUIÇÕES DE LONGA PERMANÊNCIA PARA IDOSOS NO BRASIL: APLICABILIDADE DO MODELO DE ENFERMEIRO GESTOR DE CASOS

ASOCIACIÓN DE LAS DEMANDAS DE SALUD DE LOS ANCIANOS EN LA ATENCIÓN PRIMARIA EN INSTITUCIONES DE LARGA ESTANCIA PARA ANCIANOS EN BRASIL: APLICABILIDAD DEL MODELO DE ENFERMERA GESTORA DE CASOS

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ABSTRACT

Introduction: Longevity with functional capacity and quality of life are challenges for new models of care.

Objectives: This study aimed to analyze the association between the health demands of older adults cared for in Primary Health Care (PHC) and Long-Term Care Facilities (LTCF) in two municipalities in the Northeast of Brazil and the applicability of the Nurse Case Manager model.

Method: Quantitative cross-sectional study, with 423 older adults in PHC and LTCF in Rio Grande do Norte, Brazil. The instruments used were the Health Handbook for Older Adults, Mini-Mental State Examination, Edmonton Frailty Scale, Vulnerability Scale, Functionality Scales (Barthel and Lawton), PRISMA 7, Geriatric Depression Scale, SF-36 Quality of Life, Mini Nutritional Assessment, Risk of Violence and Violence. The data was analyzed using SPSS 23. The project was approved under opinion no. 4267762.

Results: The main demands were functionality, quality of life, frailty, violence, falls, nutrition, polypharmacy, sarcopenia, symptoms of depression, cognitive decline, and vulnerability, and were associated with living in LTCF.

Conclusion: The demands of functionality, quality of life, frailty, violence, falls, nutrition, and polypharmacy are associated with the study scenarios, constituting a major challenge to be faced in the Nurse Case Manager model, denoting the need for its applicability in the quality and effectiveness of care.

Keywords: Aged; Case Managers; Homes for the Aged; Primary Health Care; Nurses.

RESUMO

Introdução: A longevidade com capacidade funcional e qualidade de vida são desafios aos novos modelos de cuidado.

Objetivos: Este estudo teve como objetivo analisar a associação de demandas de saúde de idosos atendidos na Atenção Primária de Saúde em Instituições de Longa Permanência Para Idosos de dois municípios do Nordeste do Brasil e aplicabilidade do modelo de Enfermeiro Gestor de Casos.

Método: Estudo transversal quantitativo, com 423 pessoas idosas na Atenção Primária de Saúde e Instituições de Longa Permanência Para Idosos, no Rio Grande do Norte, Brasil. Foram utilizados os instrumentos: Caderneta de Saúde da Pessoa Idosa, Mini Exame do Estado Mental, Escala de Fragilidade de Edmonton, Escala de Vulnerabilidade, Escalas de Funcionalidade (Barthel e Lawton), PRISMA 7, Escala de Depressão em Geriatria, Qualidade de vida SF-36, Mini Avaliação Nutricional, Risco violência e Violência. Os dados foram ana-

lisados no SPSS 23. Projeto aprovado, parecer n.º 4267762.

Resultados: As principais demandas foram: funcionalidade, qualidade de vida, fragilidade, violência, quedas, nutricional, polifarmácia, sarcopenia, sintomas de depressão, declínio cognitivo e vulnerabilidade, sendo associadas aos residentes em Instituições de Longa Permanência Para Idosos.

Conclusão: As demandas de funcionalidade, qualidade de vida, fragilidade, violência, quedas, nutricional, polifarmácia estão associadas aos cenários do estudo, constituindo um grande desafio a ser enfrentado no modelo Enfermeiro Gestor de Casos, denotando a necessidade da sua aplicabilidade na qualidade e efetividade da atenção.

Palavras-chave: Atenção Primária à Saúde; Pessoa Idosa; Instituição de Longa Permanência para Idosos; Enfermeiros; Gestor de Casos.

RESUMEN

Introducción: La longevidad con capacidad funcional y calidad de vida son desafíos para los nuevos modelos de atención.

Objetivos: El objetivo de este estudio fue analizar la asociación entre las demandas de salud de los ancianos atendidos en Atención Primaria de Salud e Instituciones de Larga Estadía para Ancianos en dos municipios del nordeste de Brasil y la aplicabilidad del modelo de Enfermera Gestora de Casos.

Método: Estudio cuantitativo transversal, con 423 ancianos atendidos en Atención Primaria de Salud e Instituciones de Larga Estadía para Ancianos, en Rio Grande do Norte, Brasil. Los instrumentos utilizados fueron: Manual de Salud del Anciano, Mini Examen del Estado Mental, Escala de Fragilidad de Edmonton, Escala de Vulnerabilidad, Escalas de Funcionalidad (Barthel y Lawton), PRISMA 7, Escala de Depresión Geriátrica, SF-36 Calidad de Vida, Mini Evaluación Nutricional, Riesgo de Violencia y Violencia. Los datos se analizaron con el programa SPSS 23. Proyecto aprobado, dictamen nº 4267762.

Resultados: Las principales demandas fueron: funcionalidad, calidad de vida, fragilidad, violencia, caídas, nutricional, polifarmacia, sarcopenia, síntomas de depresión, deterioro cognitivo y vulnerabilidad, y se asociaron a residentes de Instituciones de Larga Estancia para Ancianos.

Conclusión: Las demandas de funcionalidad, calidad de vida, fragilidad, violencia, caídas, nutricional, polifarmacia están asociadas a los escenarios de estudio, constituyendo un gran desafío a ser enfrentado en el modelo de Enfermera Gestora de Casos, denotando la necesidad de su aplicabilidad en la calidad y efectividad de los cuidados.

Descriptores: Anciano; Atención Primaria de Salud; Enfermeros; Gestor de Casos; Hogares para Ancianos.

INTRODUCTION

Population aging is one of the most significant trends of the 21st century. In Brazil, demographic transition, and improvements in social and economic indicators, compared to previous decades, have expanded the number of older adults. This has been accompanied by a rise in chronic non-communicable diseases, prompting the health system to adopt strategies and methods to promote a better quality of life for this population[1].

According to data from the Brazilian Institute of Geography and Statistics[2], life expectancy for men is 73.1 years, while women's is 80.1 years. In 2022, the population aged 65 or older in the country reached 10.9%, totaling 22 169 101 people, an increase of 57.4% compared to 2010, when this group comprised 14 081 477 people, or 7.4% of the population[3].

Increased life expectancy is a major achievement for the Brazilian population. However, along with this progress comes the need for people to enjoy these additional years with functional capacity, health, and quality of life, leading us to consider new health demands and challenges to traditional models of care.

In recent years, some institutions and researchers have been striving to change the model of healthcare provision[4]. The older population is characterized by multiple specialist consultations, unshared information, numerous medications, clinical and imaging exams, and other procedures that burden the system and create significant financial impact at all levels, while the availability of these services does not generate substantial benefits for older adults health or quality of life[5]. Extending longevity is one of humanity's greatest achievements, but a major challenge arises: caring well for this age group and adding quality to the additional years of life[4].

Determining the health conditions of the older population requires considering their overall status, meaning a satisfactory level of functional independence rather than merely the absence of disease. In this context, functionality becomes a key paradigm in older adults' health, representing one of the most important attributes of human aging, as it involves the interaction of physical, mental, and cognitive capacities for daily activities[6].

In this sense, we highlight the studies[2,4,5] that point out that the monitoring of health conditions of the older population, as well as its associated factors, with a key instrument to guide prevention strategies, and which should have as objectives to interfere favorably in the natural history of the disease, anticipate the emergence of complications, prevent exacerbations and complications of chronic diseases, increase patient involvement in self-care and build a database on the chronic patients, most of them older adults.

Chronic diseases are characterized by prolonged duration, the production of disabilities or impairments due to irreversible pathological changes, and the necessity for extended periods of supervision, observation, or care[7]. This emphasizes the need for a modernized health approach for older adults[7], incorporating a continuum of actions in health education, promotion, prevention of avoidable diseases, delayed disease onset, early intervention, and rehabilitation. In essence, it advocates for the organization of care for older adults based on their specific needs and health demands, grounded in a comprehensive care model.

Given that older adults are frequently affected by multiple chronic diseases, an optimal approach involves structuring integrated models that comprehensively address the diverse needs of this population. Without such models, the underlying issues are unlikely to be resolved, as other conditions and associated frailties will persist[8].

The model proposed in this study is structured around comprehensive care and preventive strategies, facilitated by continuous health monitoring, and coordinated care across all levels of the healthcare system. However, to achieve this, transforming the logic of older adults' healthcare in Brazil is both a challenge and a necessity, especially since this age group is in more vulnerable situations, particularly those living in Long-Term Care Facilities (LTCF).

The LTCF are collective residences, whether governmental or not, that offer health care and activities aimed at maintaining clinical-functional conditions. There is a global trend toward increasing this type of residence, with the number of institutions varying by country and local culture, and the population living in institutions corresponding to approximately 0.5% of the older population in Brazil, 9% in the United States, and 6% in France[9].

The older adults' healthcare model proposed in this study is founded on comprehensive care and preventive measures, supported by continuous health monitoring and coordinated care across all levels of the healthcare system. Professionals involved in this model should be continuously encouraged to pursue training and updates, seeking the highest level of qualification[1].

However, this type of change and innovation must be built into the daily routine of services, in the training of healthcare professionals, in how the health system is managed and organized for care, and in the need to integrate knowledge, theory, application of tools, and routines to offer better care to the older adults[4].

Brazil must take on the task of ensuring quality of life for its older adults, who often have low education levels, limited social protection, and multiple chronic conditions[10] requiring interventions and lifestyle changes as part of a continuous care process that demands constant follow-up and care[11], creating an economic impact for society[12] due to the growing demand for health services[4].

Considering this scenario, chronic disease management is increasingly recognized as an important issue by managers and researchers who seek interventions and strategies to combat these problems worldwide[4]. The model we propose is structured in lighter levels, that is, lower cost and primarily consisting of care provided by well-trained healthcare professionals using epidemiological screening tools, in addition to monitoring technologies[13].

Advances in technology, science, and medicine offer those who use modern health maintenance tools the chance to enjoy life for a longer period. Thus, rethinking the current model is imperative[4]. As a result of an aging population, health promotion in education, disease and frailty prevention, and the maintenance of independence and autonomy are actions that need to be expanded[4].

Therefore, it is necessary to reorganize nursing work in Primary Health Care (PHC), including LTCF, by defining new protocols, managing material and human resources, and ensuring communication between PHC and Hospital Care (HC)[1] levels, as well as establishing a care model based on the figure of the Nurse Case Manager (NCM).

The term "case management" originates from the experiences of countries like the United Kingdom, the United States, and Canada, developed since the 1960s, initially in mental health[14,15]. In 2002, the Community Case Management Nurse (CMN) role was introduced within the Andalusian healthcare system, followed by the establishment of the hospital-based CMN role in 2003. By 2006, the Andalusian government in Spain published the Hospital Case Management Nurse Manual, and in 2007, the Primary Care Case Management Nurse Manual was released[16].

In this context, the CMN figure was integrated into the healthcare systems of Spain and Portugal as a reference for patients with chronic and clinically complex conditions, such as breast cancer. According to the American Nurses Credentialing Center (ANCC), case management is defined as "a systematic and dynamic collaborative process of health service delivery and coordination for a specific population, aiming to provide options and services that meet patients' needs, reducing service fragmentation and duplication, improving quality, and enhancing cost-effectiveness of clinical outcomes"[17].

In this model, the functions of the CMN that work in different care contexts integrate and coordinate social and health care received by users at different levels, such as health centers, home care, specialized care, and social services, and include responsibility for the patient care plan, ensuring coordination among healthcare professionals across different levels, maintaining continuity of care, identifying patients with special needs, chronic conditions, or dependencies with high care demand and risk of complications, and allocating social and healthcare resources as necessary[9].

The CMN provides unique contributions to integrating healthcare, social services, and other support services in primary care settings and long-term care institutions for individuals with complex health needs[18]. Training for CMNs is essential, as they must be able to identify patients with chronic illnesses prone to complications and coordinate resources throughout the care process[19].

Evaluations of the CMN's role indicate its effectiveness and positive impact on healthcare systems and individuals with complex chronic conditions. It is configured as a practice of matrix characteristics, with transversal action concerning the levels of attention, mobilizes various healthcare resources across territories.

The implementation of the CMN figure in Spain exemplifies the broader role of nursing beyond individual care, focusing on patients with chronic illnesses, their primary caregivers, healthcare professionals, and services[20].

To create the ideal CMN profile, it is crucial to develop leadership, the development of leadership skills and ability to articulate and mediate, and coordination skills. Furthermore, involving other team members and services in understanding the CMN model is also necessary to ensure sufficient support for mobilizing resources effectively[20].

The question of the existence of a minimum set of services to be managed is another factor to consider, given that in the Brazilian model, local organizational arrangements can be very different, as well as their resources[20]. The Spanish experience, therefore, can provide insight into establishing a responsive and high-quality health system able to give quality and decisive answers to health needs, especially for the older population[20].

The CMN's leadership in multidisciplinary teams enhances network communication with professionals and users, leading to economic and health benefits and greater professional satisfaction[21].

To justify this study, it is essential to consider aging as a dynamic process, the growing demands for health and care services, and analyze the impacts of issues faced by the older population, the links and their implications, and developments marked by conflicts of various aspects between the people involved in the process of health care. This includes understanding the main health demands related to chronic conditions that present challenges for families, caregivers, and healthcare professionals in providing adequate, qualified, and effective care. Moreover, it highlights the urgent need to build a discussion around care models that break down healthcare fragmentation in PHC and LTCF.

This study aims to analyze the health demands of older adults assisted in PHC and LTCF in two municipalities in northeastern Brazil, as well as to demonstrate the applicability of the case management nurse model.

MATERIALS AND METHODS

This study is a cross-sectional, quantitative study, part of a longitudinal and multicenter project from the International Research Network on Vulnerability, Health, Safety, and Quality of Life of Older Adults: Brazil, Portugal, Spain, and France.

The study population consisted of older adults attended by PHC residing in the municipalities of Santa Cruz and residents in LTCF in Natal, located in the state of Rio Grande do Norte (RN), Northeast Brazil.

For probabilistic sampling, we used the formula for finite populations based on an estimated older population of 125.630 individuals, resulting in a sample size of 384 with an additional 10% to account for potential losses, yielding a final sample of 423 older adults, 223 in Natal and 200 in Santa Cruz, RN.

Inclusion criteria required participants to be aged 60 or older, registered or using a PHC unit, or residing in LTCF. Exclusion criteria included older adults with clinical conditions preventing participation in the study, as assessed by the researcher, or based on information provided by PHC or LTCF professionals.

The instruments used in this study were: the Health Handbook for Older Adults (for socio-demographic and health data), the Mini-Mental State Examination (MMSE), the Edmonton Frail Scale (EFS), the Vulnerable Elders Survey-13 (VES-13), Functional Scales (Barthel and Lawton), PRISMA 7, the Geriatric Depression Scale (GDS-15), Quality of Life (SF-36), the Mini Nutritional Assessment (MNA), the Hwalek-Sengstock Elder Abuse Screening Test (HS-EAST), and the Conflict Tactics Scale (CTS).

Data collection occurred between July and December 2023, conducted by a previously trained multidisciplinary team composed of researchers, collaborators, and graduate and undergraduate students.

The applicability of the Case Management Nurse Model was proposed based on the health demands identified in the PHC and LTCF settings, using the Chronic Disease Management Program initiative from the Portuguese Ministry of Health as an exemplary model[22]. This program aims to promote accessibility and reduce morbidity by creating a contact point between the patient and healthcare services, which is facilitated by home monitoring through a Case Manager (CM) – a nurse from PHC or a hospital who works within a multidisciplinary team.

The multicenter project was approved by the Research Ethics Committee of Onofre Lopes University Hospital/UFRN, under opinion no. 4267762 and CAAE: 36278120.0.1001.5292. Participants meeting the inclusion criteria and agreeing to participate in the study were informed about the research and invited to sign the Informed Consent Form (ICF).

Data analysis and tabulation utilized the Statistical Package for the Social Sciences (SPSS) software, version 23.0. Descriptive analyses of study variables were conducted through absolute and relative frequency distributions for categorical variables. The Odds Ratio test and confidence intervals (OR and 95% CI) measured associations and risk estimates for socio-demographic variables, as well as for variables derived from the instruments, dichotomized to indicate the presence or absence of health demands and conditions among participants. Results appear in tables and figures, with a 5% significance level applied to all analyses.

RESULTS

This study included 423 older adults, with 223 residing in LTCF in Natal/RN and 200 from Santa Cruz assisted by PHC. Most were women (70.0%), aged 80 or older (52.2%), of non-white race/color (58.2%), and literate (63.8%) (Table 1↗).

When comparing characteristics across study settings, similarities were observed in gender and race/color; however, LTCF residents tended to be older than community-dwelling ($p < 0.001$), while community-dwelling had higher educational levels ($p < 0.001$), as seen in Table 1↗.

Community-dwelling older adults are nearly three times more likely to be younger (OR = 2.8, 95% CI 2.2-3.5) and almost twice as likely to be literate (OR = 1.7, 95% CI 1.3-2.2) compared to LTCF residents (Table 1↗).

When evaluating the health demands of older adults, the main changes were observed in functionality levels. Functionality was assessed in the execution of instrumental activities of daily living (IADL), basic activities of daily living (BADL), and functional decline. Most of the older adults demonstrated dependence in performing IADLs (86.3%) and BADLs (67.4%) and showed a risk of functional decline (70.7%).

All these health demands were more common in LTCF ($p < 0.001$), while older adults in PHC were less likely to show these health demands. This indicates that institutionalized older adults have poorer functionality than the community-dwelling (Table 2↗).

Institutionalized older adults showed a higher risk of violence (45.2%) compared to community-dwelling ($p < 0.001$). Moreover, they exhibited greater frequency of almost all health demands. Among the most common demands for community-dwelling older adults, polypharmacy (40.0%; $p < 0.001$) was prominent, with only 9.0% of older adults reporting comorbidities, also more frequent in this setting ($p < 0.001$) (Table 2↗).

Given the health demands identified in both study settings, we will proceed to demonstrate the applicability of the CMN model to address older adults' care in PHC and LTCF settings.

It was found that the health demands of older adults attended by PHC were similar to those residing in LTCF; however, variations were observed in the order of occurrence. Frailty, functionality, and quality of life were the main demands in both settings. However, polypharmacy stood out as the primary demand in PHC, while cognitive decline was more prevalent in LTCF (Figure 1↗).

Comparing the types of health demands indicates that older adults residing in LTCF require more complex care than community-dwelling (PHC).

In the proposed model, the CMN, through the inclusion of older adults in the care process, is responsible for conducting the first home visit by the case management team, alongside other team professionals, and diagnosing the older adults' social context. Following this, an Individual Care Plan (ICP) is developed and adjusted to the older adult's daily reality, shared among all involved parties (team, family, and caregivers). This process identifies specific intervention priorities for the older population, guiding them, their family, and caregivers. The follow-up should be continuous through subsequent home visits, which may be scheduled or as needed, conducted by the local team. Data collection and monitoring of the older adults should continue throughout their participation in the case management program.

Thus, the applicability of the CMN model to address health demands in both study settings (PHC and LTCF) must consider not only the demands but also the inherent conditions of the care process, highlighting the importance of the CMN role at both PHC and LTCF levels. As a mediator in this care process, the CMN supports healthcare teams, older adults, and families, enhancing continuity and quality of care.

DISCUSSION

In this study, the predominant sociodemographic characteristics among participants were being female, aged 80 or older, non-white, and literate. Associations between types of health demands demonstrate that alterations in functionality (IADL, BADL, and risk of functional decline), quality of life, frailty, risk of violence, altered nutrition, sarcopenia, depressive symptoms, risk of falls, cognitive decline, and vulnerability were more frequent among older adults residing in LTCF ($p < 0.001$), except for polypharmacy and comorbidities, which were more frequent in PHC ($p < 0.001$).

A comparative study of older adults in Brazil and Portugal[23] found associations between socioeconomic profile and quality of life (QoL) with depressive symptoms, primarily among women with lower education levels and low income, affecting aspects of QoL related to mental, physical, and social health and self-perceived health.

In the 2020 document Decade of Healthy Aging 2020-2030, the Pan American Health Organization emphasized that there is limited scientific evidence globally to support the idea of better health or healthier aging among future generations compared to past generations[24].

In another study on older populations in Brazil and Portugal[25], an association was found between better assessments of physical and functional aspects of QoL and lower levels of depression, with emphasis on physical health and functionality aspects.

In terms of quality of life, a study[26] found lower QoL scores in Brazil, associated with the risk of functional decline in domains such as physical functioning, general health perceptions, mental health, and physical health dimensions. QoL was associated with functional and nutritional disabilities and depressive symptoms.

Social vulnerability is understood as a life circumstance marked by social and health inequities that increase care needs and necessitate public health promotion policies for older adults[27].

LTCF plays an important role in sheltering older adults facing social vulnerability. Studies show that vulnerability among institutionalized older adults includes factors such as abandonment, lack of housing, health conditions, illiteracy, risk of isolation, need for shelter, survival, and difficulties in social interaction[27-29].

The routine change brought about by the admission of older adults to LTCF can have negative consequences on the quality of care provided and their new living environment, which increases vulnerability and reveals occurrences of depressive episodes and other negative emotions and feelings[28].

Social vulnerability factors are multifaceted and complex but can be mitigated through continuous education, with a focus on older adults' care policies. This involves providing assisting a multidisciplinary team that emphasizes interdisciplinary and intersectoral care, prevention, health promotion, and maintenance of the biopsychosocial and spiritual well-being of institutionalized older adults[28].

Falls among the older adults lead to severe consequences. Therefore, it is essential to identify risk factors for falls, particularly extrinsic ones, which are modifiable and reversible. Additionally, it is recommended to adopt strategies for fall prevention, develop protocols with safe practice drawings, monitor occurrences using indicators, and implement interdisciplinary and multidisciplinary continuing education, with a focus on training and implementing protective and preventive measures[30].

In a study evaluating changes observed after administering multidimensional interventions[31], a reduction in depressive symptoms was noted, as well as improvements in mental health, general health perceptions, and physical role functioning among intervention participants.

Functional assessment is therefore crucial for the correct stratification and allocation of older patients in their care pathway, and it can also help anticipate their care needs. Functional autonomy is an important predictor of older adults health. There are several validated and translated assessment tools in Portuguese for risk screening and organizing healthcare entry points. The PRISMA-7 has been systematically used as a screening tool for functional decline and frailty at healthcare entry points in Canada, by the British Geriatrics Society, and by the Royal College of General Practitioners in England, as a screening instrument for functional loss and frailty[32]. Assessing daily living activities, instrumental activities, and mobility can provide important information for decision-making, and mapping individual risk and protective factors[33].

Since older adults are often chronic illness patients and due to the high number of medications associated with this age group, combined with the vulnerabilities and frailties of aging, they increasingly struggle to adhere to prescribed therapeutic regimens[34].

The CMN role, based on the integrated disease management model, aims to empower patients to promote self-management, reduce complications, encourage multidisciplinary teamwork, support appropriate medication use, and serve as a liaison with other healthcare team members. Special attention should be given to the most vulnerable older adults, such as those of advanced age, those with malnutrition, fall risk, sensory impairments, incontinence, and those on multiple medications[34].

The CMN plays a prominent role in reducing and preventing risk situations to enhance the quality of life of older adults, given their skills and proximity to them, particularly in the home care context. This role requires the responsibility to oversee the educational process in a more personalized way, fostering a close relationship between the CMN, the older adults, and their family or caregiver[34].

The CMN model can serve as a means to support self-management, information, and empowerment, particularly for vulnerable groups, such as the older adults[34].

The CMN's responsibilities across different care contexts involve integrating and coordinating the social and healthcare services received by patients at various levels, including health centers, home care, specialized care, and social services[35]. Training a CMN is essential, as they must be capable of identifying patients with chronic illnesses at risk of complications and coordinating all resources throughout the care process[35].

The success or failure of a CMN model can also be partially attributed to the ability to negotiate and establish trust. This suggests a professional profile in which clinical and managerial skills must necessarily be coupled with relational and conflict mediation competencies[20]. The emergence of a professional role like the CMN represents a promising option for implementation in Brazil, in a local system or subsystem, with minimally adequate resources and training[20].

CONCLUSION

Considering the PHC demands identified among the older adults in this study, we emphasize those related to functionality (IADL, BADL, and risk of decline), quality of life, frailty, violence, falls, altered nutrition, polypharmacy, sarcopenia, depressive symptoms, cognitive decline, vulnerability, and comorbidities.

When comparing the differences in health demands across the study settings, we observe that functionality, quality of life, frailty, violence, falls, altered nutrition, and polypharmacy, among others, are the main identified needs. These are more frequently associated with older adults residing in LTCF, indicating that they have more complex care demands than community-dwelling (PHC).

By demonstrating the applicability of the Case Management Nurse (CMN) model based on the health demands identified in both study settings (PHC and LTCF), we highlight the importance of the CMN's role at both levels, as a mediator in the care process with health

teams, the older adults, and their families. In the proposed model, this professional works to enhance the continuity and quality of care.

The results of this study alert us to the need to propose a more effective care model that allows involved professionals, especially the CMN, to gain a broader understanding of older adult's health demands. This includes commitment and dedication to their care actions, promoting health, meeting identified needs, and improving older adult care quality, along with refining care models to achieve better outcomes for this population in our country.

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Table 1 – Distribution of sociodemographic characteristics by study settings. Rio Grande do Norte, Northeast, Brazil, 2024.[^^^]

Sociodemographic characteristics		Study settings		Total n (%)	p-value RC (95% CI)
		LTCF n (%)	PHC		
Gender	Female	160 (37.8)	136 (32.2)	296 (70.0)	0,401
	Male	63 (14.9)	64 (15.1)	127 (30.0)	
Age group	60 to 79 years	59 (13.9)	143 (33.8)	202 (47.8)	< 0,001
	80 years or older	164 (38.8)	57 (13.5)	221 (52.2)	2,8 (2,2-3,5) *
Race	White	99 (23.4)	78 (18.4)	177 (41.8)	0,261
	Non-white	124 (29.3)	122 (28.8)	246 (58.2)	
Literacy	Literate	120 (28.4)	150 (35.5)	270 (63.8)	< 0,001
	Illiterate	103 (24.3)	50 (11.8)	153 (36.2)	1,7 (1,3-2,2) *

Note: * OR (95% CI) values refer to PHC settings.

Table 2 – Distribution of health demands by study settings. Rio Grande do Norte, Northeast, Brazil, 2024.

Health demands		Study Settings		Total n (%)	p-value RC (95% CI)
		LTCF n (%)	PHC n (%)		
Altered Functionality (IADL)	Present	215 (50.8)	150 (35.5)	365 (86.3)	< 0.001
	Absent	8 (1.9)	50 (11.8)	58 (13.7)	2.1 (1.8-2.5)*
Altered Quality of life	Present	204 (48.2)	152 (35.9)	356 (84.2)	< 0.001
	Absent	19 (4.5)	48 (11.3)	67 (15.8)	1.7 (1.4-2.0)
Frailty	Present	217 (51.3)	100 (23.6)	317 (74.9)	< 0.001
	Absent	6 (1.4)	100 (23.6)	106 (25.1)	3.0 (2.5-3.5)*
Functional Decline Risk	Present	208 (49.2)	91 (21.5)	299 (70.7)	< 0.001
	Absent	15 (3.5)	109 (25.8)	124 (29.3)	2.9 (2.4-3.5)*
Altered Functionality (BADL)	Present	202 (47.8)	83 (19.6)	285 (67.4)	< 0.001
	Absent	21 (5.0)	117 (27.7)	138 (32.6)	2.9 (2.4-3.5)*
Violence Risk	Present	191 (45.2)	77 (18.2)	268 (63.4)	< 0.001
	Absent	32 (7.6)	123 (29.1)	155 (36.6)	2.8 (2.3-3.4)*
Fall Risk	Present	188 (44.4)	71 (16.8)	259 (61.2)	< 0.001
	Absent	35 (8.3)	129 (30.5)	164 (38.8)	2.9 (2.3-3.6)*
Altered Nutrition status	Present	167 (39.5)	74 (17.5)	241 (57.0)	< 0.001
	Absent	56 (13.2)	126 (29.8)	182 (43.0)	2.3 (1.8-2.8)*
Polypharmacy	Present	70 (16.5)	169 (40.0)	239 (56.5)	< 0.001
	Absent	153 (36.2)	31 (7.3)	184 (43.5)	2.8 (2.3-3.5)**
Sarcopenia	Present	159 (37.6)	70 (16.5)	229 (54.1)	< 0.001
	Absent	64 (15.1)	130 (30.7)	194 (45.9)	2.2 (1.8-2.7)*
Depression Symptoms	Present	150 (35.5)	50 (11.8)	200 (47.3)	< 0.001
	Absent	73 (17.3)	150 (35.5)	223 (52.7)	2.7 (2.1-3.5)*
Fall Risk	Present	113 (26.7)	73 (17.3)	186 (44.0)	0.003
	Absent	110 (26.0)	127 (30.0)	237 (56.0)	1.4 (1.1-1.7)*
Cognitive Decline Risk	Present	161 (38.1)	23 (5.4)	184 (43.5)	< 0.001
	Absent	62 (14.7)	177 (41.8)	239 (56.5)	5.9 (4.0-8.6)*
Vulnerability	Present	120 (28.4)	51 (12.1)	171 (40.2)	< 0.001
	Absent	103 (24.3)	149 (35.2)	252 (59.6)	2.0 (1.5-2.6)*
Self-Reported Comorbidities	Present	4 (0.9)	38 (9.0)	42 (9.9)	< 0.001
	Absent	219 (51.8)	162 (38.2)	381 (90.1)	6.0 (2.4-15.4)**

Note: OR (95% CI) estimates for PHC* and LTCF**.

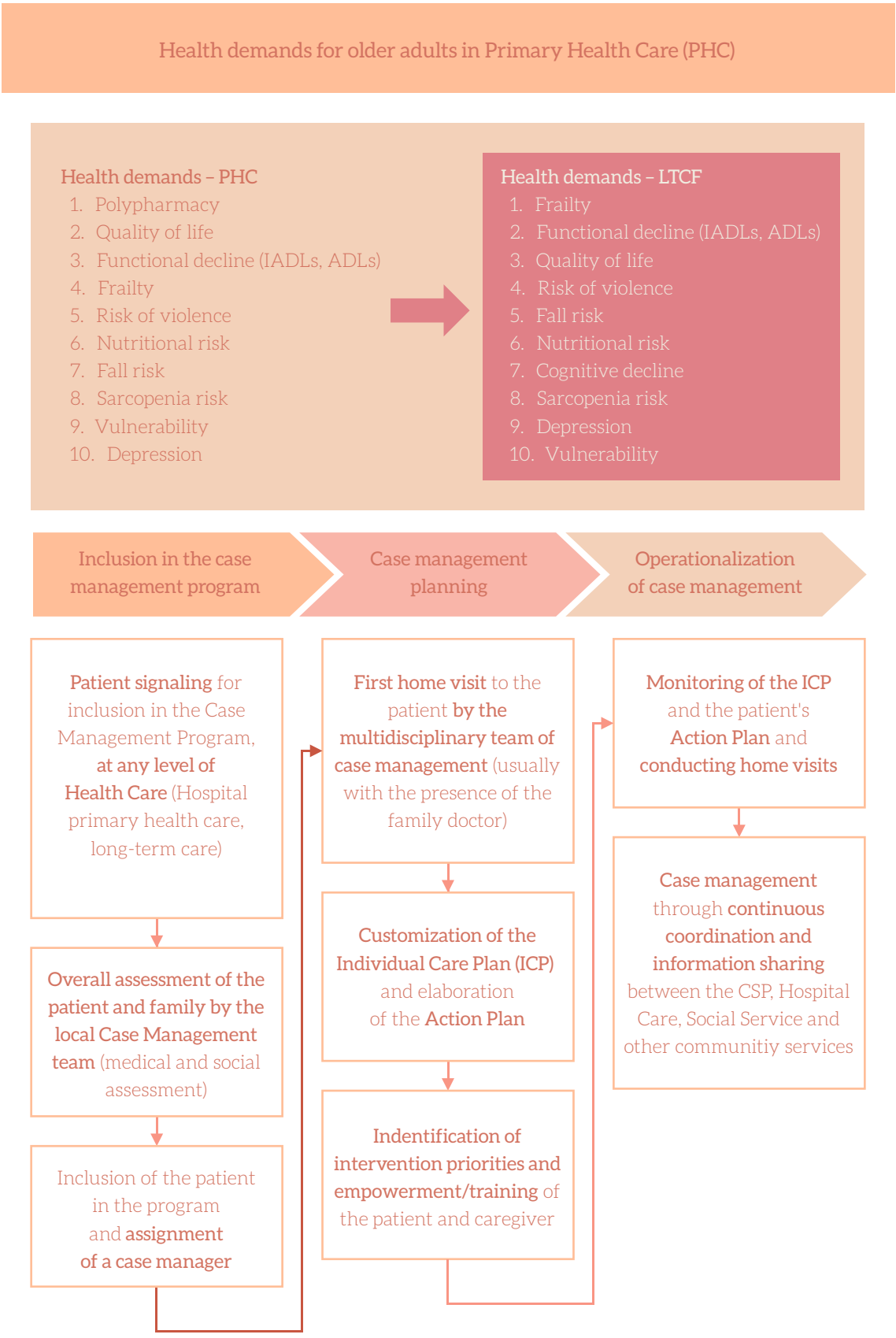

Figure 1 – Health Demands of Older Adults Attended by PHC and LTCF and Applicability of the Case Management Nurse Model. Rio Grande do Norte, Northeast, Brazil, 2024.
Source: Adapted from the Case Management Program in Portugal[22].