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Longevity in houses and environments: project under construction for aging

Longevidade nas moradias e nos ambientes: projeto em construção para o envelhecimento

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Abstract

The place where we live and grow old can be favorable to life if it meets the demands of a dignified existence, from everyday life to the dreams and future we project. It is in the city that life happens, whether in living spaces or in residential environments influenced by socioeconomic challenges and physical and environmental structure. The analysis of aging in Brazil takes into account the social inequalities that influence life expectancy and the number of elderly people in each region, affected by job opportunities; income; rights; access to public and market goods; education, among others. The number of elderly people in the country reaches 32 million – 15% of the general population, which totals around 203 million – according to the 2022 Census. Having a city that meets the demands of elderly people requires changes in policies and an environment built to adequately respond to the capabilities and resources of these people, anticipating flexible responses. To improve the quality of life for the elderly population, it is essential to overcome existing barriers through urban planning and the redefinition of current models, thereby promoting independence and autonomy throughout old age. In this article we will analyze, using an exploratory and descriptive methodology of a qualitative and applied nature, some problems that Brazilian cities face in relation to the elderly, and we will propose some answers to these problems, looking at the solutions adopted by cities in other countries.

Keywords: Environments. Habitation. Longevity. Housing.

Resumo

O lugar onde vivemos e envelhecemos pode ser favorável à vida caso atenda às demandas de uma existência digna, desde o cotidiano, até os sonhos e o futuro que projetamos. É na cidade que a vida acontece, seja nos espaços de moradia, seja nos ambientes do entorno residencial influenciado por desafios socioeconômicos e da estrutura física e ambiental. A análise do envelhecimento no Brasil leva em consideração as desigualdades sociais influentes na expectativa de vida e no número de pessoas idosas em cada região, afetadas por oportunidades de trabalho, renda, direitos, acesso a bens públicos e de mercado, educação, entre outros. O número de pessoas idosas no país alcança 32 milhões – 15% da população geral que totaliza cerca de 203 milhões – conforme o Censo 2022. Contar com uma cidade que atenda às demandas das pessoas idosas requer mudanças nas políticas e um entorno construído para responder de maneira adequada às capacidades e

recursos dessas pessoas, antecipando-se em respostas flexíveis. Para melhorar a qualidade de vida da população idosa, é necessário superar as barreiras existentes por meio do planejamento urbano e da redefinição dos modelos vigentes, promovendo, assim, a independência e a autonomia ao longo da velhice. Neste artigo analisaremos utilizando uma metodologia exploratória e descritiva, de natureza qualitativa e aplicada, alguns dos problemas que as cidades brasileiras enfrentam em relação aos idosos e proporemos algumas respostas para esses problemas, olhando para as soluções adotadas por cidades de outros países.

Palavras-chave: *Ambiente. Habitação. Longevidade. Moradia.*

Introduction

The global population is aging, and life expectancy is increasing both in developed and developing countries (Kunst *et al*., 2021). In the case of Brazil, data from the new 2022 census indicate that the aging process of the population increased by 57.4% between 2010 and 2022, with those over 65 now representing 10.9% of the total population. According to the World Health Organization, Brazil is expected to become the sixth country in the world with the largest number of elderly people by 2025 (Kunst *et al*., 2021). Life expectancy has also grown in recent years, rising from 73.1 in 2010 to 75.5 years in 2022, despite the decline during the COVID-19 pandemic.

If we look at the percentages of the elderly population in 2022 in European Union countries, we see that Italy (23.8%), Portugal (23.7%), Finland (23.0%), Greece (22.7%), Croatia (22.5%), and Germany (22.2%) are the oldest countries, with their proportions increasing year after year. Spain (20.1%) is slightly below the EU-27 average of 21.1% (Consejo Superior de Investigaciones Científicas, 2023). As can be observed, these percentages are still much higher than those in Brazil. What is concerning is that the changes in Brazil have been more accelerated while France took 100 years for its elderly population to rise from 7.0% to 14.0%, Brazil will take less than 25 years to reach the same level of growth (García-Ballesteros; Jiménez, 2016). This means, as indicated by the Director of the United Nations Population Fund for Asia and the Pacific in 2002 at the Second World Assembly on Aging, "[...] in Europe, countries became rich before they aged. But in the developing world, countries are aging before they become rich." This process, known as the "[...] demographic transition" (Camarano; Kanso; Mello, 2004; Miguel; Mafra; Fontes, 2016), brings about profound changes in terms of demands for healthcare, housing, education, pensions, culture, leisure, among others. Population aging is, as Kofi Annan, Secretary-General of the United Nations, stated in 1998 on the occasion of the International Year of Older Persons, "a silent revolution that goes beyond demographics, with significant economic, social, cultural, psychological, and spiritual repercussions." We could also add urban planning to that.

The urban issue is highly significant considering that more than half of the world's population currently lives in cities, and this proportion is expected to reach two-thirds by 2050. In the case of Brazil, three-quarters of its population reside in urban areas (Kunst *et al*., 2021).

In light of this new situation, cities must adapt to this new model of aging societies, whose needs and demands are different and increasing, both in terms of internal housing adaptations and neighborhood designs, transport infrastructures, public spaces, among others. To ensure quality of life for this population, two very important elements are housing and the environment, as they have a direct impact on their daily lives, activities, and health (Braga; Bestetti; Franco, 2016). The changes that occur during the aging process reduce their ability to adapt, making them more sensitive to the environment (Nascimento *et al.*, 2017).

Public spaces such as streets, squares, parks, civic facilities, cultural and sports centers are places where people meet and interact. They are, therefore, spaces of coexistence and sociability, which highlights their importance. However, in general, and particularly in Brazil, urban spaces present numerous challenges for the elderly, both physical derived from urban designs that do not consider the various limitations that become more pronounced with age and social, which include higher crime rates, insecurity, poverty, traffic risks, the scarcity of social services, and the lack of infrastructure aimed at the elderly, as well as noise and pollution. All these factors cause elderly people living in cities to feel a greater sense of social and environmental vulnerability (Sánchez González; Domínguez Moreno, 2014; Sánchez González; Egea Jiménez, 2011), and can even contribute to a restriction of their movements due to the fear they may have of a potentially hostile environment.

Another important issue is housing. Elderly individuals need their homes to be accessible and safe (Santos *et al*., 2019). Therefore, public policies with programs that allow the elderly population access to decent housing with adequate infrastructure are necessary (Albuquerque *et al*., 2020; Naud *et al*., 2019) something particularly challenging in a country like Brazil, which struggles to provide adequate housing for the population in general.

In this article, we will address both the housing and environmental challenges using an exploratory and descriptive methodology of a qualitative and applied nature, aimed at generating practical knowledge about the specific issues faced by the elderly (Gil, 2007). To achieve this, a bibliographic and documentary review of the subject was conducted, along with an analysis of best practices in Brazil and Europe, particularly Spain. This will allow us to identify situations, explore alternatives, and propose solutions (Zikmund, 2000). The concept of "environment" used in this article stems from the Plan for the Decade of Healthy Aging 2021-2030, which identifies three environments for initiatives by the member countries of the United Nations that adhere to the proposal: the physical environment, the social environment, and the socioeconomic environment (Pan American Health Organization, 2020, p. 11).

Development

In this study, we understand housing as the physical structure that is built, consisting of internal and external areas, and related to residents, functioning, and usage habits (Costa *et al*., 2016 *apud* Martucci; Basso, 2002). We consider housing as situated in an urban or rural space composed of the physical environment where the population establishes residence and circulates. The environment refers to the surrounding context of social life - both built and unbuilt - encompassing the entire set of circumstances of human existence.

Among the numerous actors involved with cities and their environments - public managers, politicians, administrators, planners, citizens, among others - people observe and analyze the adequacy, or lack thereof, of the localities and their dynamics, which influence citizenship, quality of life, health, and well-being.

The three spheres of the Brazilian government conduct surveys to listen to the general population about cities, with results incorporated into annual and multi-year plans, budgets, and other management tools. However, it is rare to have specific surveys focused on the elderly population, which are typically conducted locally in cases of managerial decision-making support for the foundation of municipal policies, programs, or actions. Surveys of elderly people tend to

inquire about the positive and negative aspects of their localities, particularly in relation to the physical environment, transportation, and mobility infrastructure.

In Brazil, the practice of conducting qualitative research to gather feedback from the elderly population has been based on the publication by the World Health Organization (WHO): the *Global Age-Friendly Cities: A Guide* (World Health Organization, 2007). The WHO Guide disseminates the responses of elderly individuals to the 2006 survey conducted in 33 countries, operationalized through the Vancouver Protocol—developed by aging experts, aimed at listening to elderly people about their cities. At the time, the WHO's objective was to create a strategy for implementing active aging in cities. The concept of "active aging" was previously proposed by the WHO in a 2002 publication titled *Active Ageing: a policy framework*, published in Brazil as *Envelhecimento Ativo – uma política de saúde* - Active Aging – a Health Policy (Pan American Health Organization, 2005), which provides a framework for social aspects of aging policies, going beyond the Health perspective.

When developing programs based on the *Global Age-Friendly Cities Guide*, Brazilian cities conduct surveys to gather feedback from the elderly using a "[...] bottom-up participatory approach" (World Health Organization, 2007, p. 7) – an essential element for meeting the requirements of municipal certification as an Age-Friendly City.

Any city in the world that implements the Age-Friendly Cities Program has its data included in the portal of the *Global Network for Age-Friendly Cities and Communities*, which was launched in 2010 as a platform for disseminating work at a global level. In 2023, Brazil had 31 cities with information available on the network's website - most of them located in Paraná: 23. The remaining cities were from the states of Rio Grande do Sul, Santa Catarina, Minas Gerais, and São Paulo. Globally, there are 1,542 cities and communities participating, representing 51 countries and reaching a global population of 320 million people (World Health Organization, [2024?]).

The implementation of each Age-Friendly City Program is guided by the requirements of the *Global Age-Friendly Cities Guide*, which establishes essential points for certification, with particular emphasis on gathering feedback from the elderly through qualitative research or a diagnostic method that involves elderly people. Figure 1 highlights the forms of feedback collection in each of the four Brazilian initiatives already certified or in progress.

The first column lists the requirements of the Global Network, available to anyone accessing the portal: https://extranet.who.int/agefriendlyworld/.

An important support component for initiatives implementing the Age-Friendly City Program is the set of eight dimensions for city evaluation (World Health Organization, 2007, p. 9) by the elderly, which is not included in Figure 1 as it is not a requirement, but it can be an integral part of the research conducted by public management that adheres to the program. The Vancouver Protocol, which is an internal document created by experts who met in Vancouver, Canada, was not published but proposed eight dimensions as "suggested consultation topics," though their use is not mandatory. Each municipal manager can develop their own research/diagnostic protocol for the evaluation of urban and rural spaces.

Dimensions defined in the Vancouver Protocol:

1) Physical Environment.

2) Transportation.

3) Housing.

4) Participation.

5) Respect and Social Inclusion.

6) Communication and Information.

7) Learning Opportunities.

8) Support, Health, and Care.

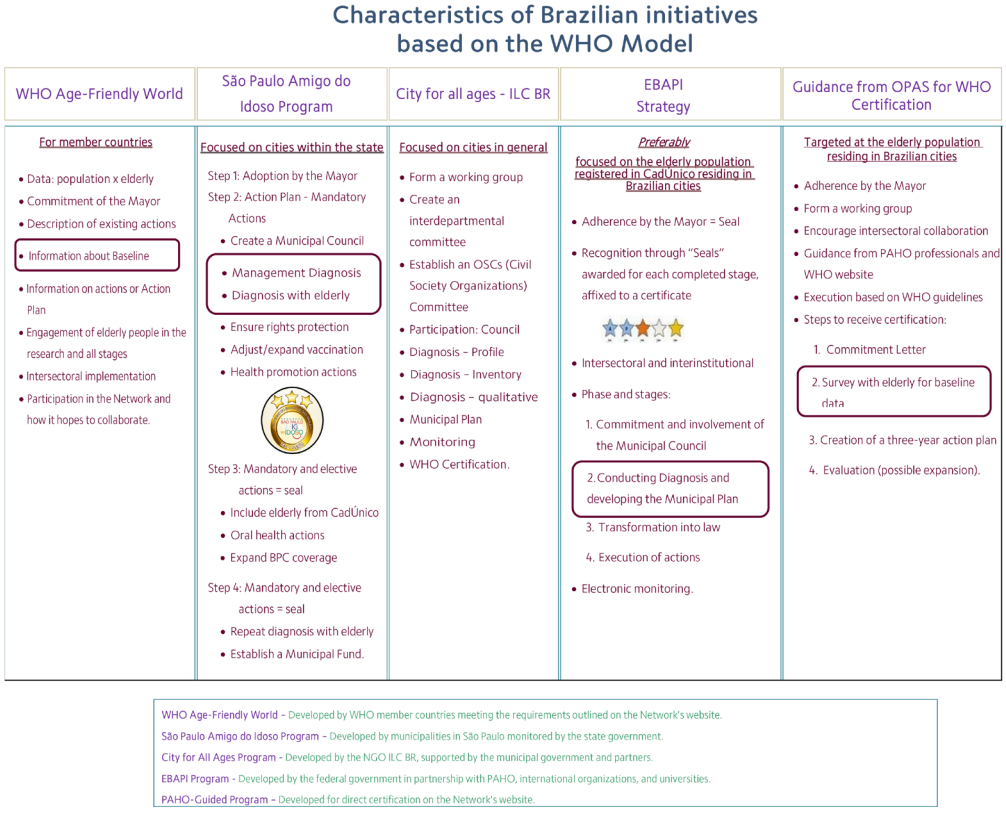

Figure 1 – Overview of the characteristics of Brazilian initiatives.

Source: Self-prepared based on a literature review and participant observation (2024).

The eight dimensions serve as a tool for verifying the suitability of a city as "age-friendly," conducive to active aging, encompassing structures, environment, services, and policies (World Health Organization, 2007, p. 9). They are used in research instruments and in the dissemination of responses.

An analysis of the set of eight dimensions highlights characteristics of the city's physical environment in the first three topics, with implications for mobility and movement through spaces, facilitated by transportation, which in turn enables the circulation of elderly people for social participation activities.

> The other three topics reflect different aspects of the social environment and culture that affect participation and mental well-being. Respect and social inclusion address the attitudes, behavior, and messages from other people and the community as a whole towards the elderly. Social participation pertains to the engagement of older adults in recreational, social, cultural, educational, and spiritual activities (World Health Organization, 2007, p. 9).

The topics related to communication/information and support also fall within the social environment, leading to the conclusion that the eight dimensions are configured within an ecosystem of environments: physical, social, and socioeconomic.

This configuration of environments appears in the proposal for the Decade of Healthy Aging 2021-2030 (Pan American Health Organization, 2020), approximately 14 years after the launch of the Age-Friendly Cities Program. The Decade was proposed at the end of 2020 during the General Assembly held by the United Nations (UN) and came under the governance of the World Health Organization, with the Pan American Health Organization responsible for its implementation in the Americas (Pan American Health Organization, 2020).

The goal of the Decade of Healthy Aging 2021-2030 is to establish 10 years of sustained and combined collaboration, putting people at the center of the plan and bringing together governments, civil society, international agencies, professionals, academia, the media, and the private sector. The Decade's proposal is a "plan of action" that guides the 10 years of joint action, structured within the realm of Health, including social and socioeconomic aspects.

The Action Plan is organized into four "areas of action"—pillars of the achievements made during the decade, which are:

1. Change the way we think, feel, and act towards age and aging.
2. Ensure that communities foster the capabilities of older people.
3. Deliver integrated care services and person-centered primary health care suitable for the elderly.
4. Provide access to long-term care for elderly people in need.

Related to the Decade of Healthy Aging 2021-2030, the focus of this work is Action Area 2, which is subdivided into the physical, social, and socioeconomic environments (Pan American Health Organization, 2020), with the purpose of ensuring the promotion of the capabilities of older people.

The studies conducted in this work pointed to two macro groups of environments: (1) the set of dimensions from the Global Age-Friendly Cities Program—as discussed above—and (2) the Action Plan for the Decade of Healthy Aging 2021-2030. The publications that convey the Program and the Action Plan make similar statements, both grounded in health. The Global Age-Friendly Cities Program is based on and aims to achieve "active aging" through its components and strategies. The Action Plan for the Decade of Healthy Aging 2021-2030 is centered on "healthy aging" to be achieved through initiatives carried out within the four "areas of action" mentioned above.

There is also another parallel that can be drawn between the two proposals (the Program and the Plan for the Decade): the Global Age-Friendly Cities Program emphasizes the importance of gathering feedback from older adults as an essential element for the implementation of the Program and obtaining city certification. Similarly, the Action Plan for the Decade of Healthy Aging 2021-2030 recommends listening to the diverse voices of older people, allowing for the involvement of family members, caregivers, young people, and communities. Meaningful engagement with older people indicates that they are both beneficiaries of services and agents of change. This involvement with older adults themselves will be crucial for each of the action areas. Considering that social relationships develop within these three environments, which encompass sectors of human life, we understand that this is the locus where public policies are proposed and implemented.

To maintain the scope of this article, we have chosen to discuss only the "physical environment" as the subject for presenting issues that require public management efforts to

implement improvements and adjustments that adapt spaces to the accelerated process of population aging and to the new demands inherent to age groups and people with disabilities, both elderly and non-elderly.

Results and Discussion

Housing

The home is an important reference point for older adults, with whom they maintain a stronger connection than other age groups, as pointed out by Stones and Gullifer (2016). This connection is not only with the physical space and the objects within it, but also with the experiences, memories, and life stories associated with it, their community, and the sociocultural context. Additionally, the elderly remaining in their homes contributes to the preservation of their identity, sense of control, autonomy, and independence, which are crucial as people age (Stones; Gullifer, 2016; Mackenzie; Curryer; Byles, 2015). All of these are essential for active aging.

However, it is important to take into account that access to adequate housing in Brazil is limited for the general population, especially for low-income individuals. Therefore, although efforts have been made, as we will see, to provide adequate housing for low-income elderly people, there is still a large gap to cover (Bonduki, 2008; Gandini; Barione; Souza, 2012; Costa *et al*., 2016). Despite the Federal Government's efforts, housing programs for the elderly are scarce, as they require resources not only for construction but also for establishing health centers, social assistance services, among others (Schussel, 2012; Yoshida, 2017).

The process of creating housing for the elderly has been long and not without challenges. It began with the *National Policy for the Elderly* in 1994 and the *Statute of the Elderly* in 2003 and continued with the *City Statute* and the approval of the *National Fund for Social Interest Housing*. São Paulo was the first city to adopt the initial initiatives for housing elderly homeless individuals, with the construction of Vila DignIDADE (dignity).

However, it was during the first *National Conference on the Rights of the Elderly* in 2006 that the right to adequate housing for the elderly began to gain momentum. This deliberative conference had the general objective of "Defining strategies for the implementation of the Elderly Protection and Defense Network." One of its key points was to promote the construction of housing for the elderly, housing that should meet existing accessibility standards (Santos, 2022).

Alternatives created in Brazil to meet the growing demand for housing for the elderly include senior residences such as Assisted Living, Independent Living, Collective Housing, Continuing Care Retirement Communities, Clinics, and Alzheimer's Specialized Clinics, among others (Yoshida, 2017). These spaces were created through public policies, with most being subsidized by the federal government (Bestetti, 2006). Other initiatives, such as shared housing or senior co-living arrangements, have also been adopted by groups of elderly individuals who wish to live with friends (Laborde, 2016), seeing this strategy as an interesting way to maintain companionship in this stage of life. More recently, the Senior Cohousing project has been explored as a shared housing model for elderly people, where common spaces exist alongside private spaces (Leite, 2019). In Spain, more than a dozen shared housing projects for elderly people are already in operation across much of the country, in places like Antequera, Horcajo de Santiago in Cuenca, Losar de la Vera in Cáceres, Torremocha de Jarama in Madrid, as well as in cities such as Valladolid, Málaga, Barcelona, and Madrid.

These last examples of housing solutions are aimed at people with high income levels. However, in Brazil, there is a large segment of the population with low or very low income levels that needs other solutions, similar to the "Minha Casa, Minha Vida" program. An example of this is the pioneering experience of the State of Paraíba with the "Cidade Madura" program, created to serve low-income elderly people, which served as a model for the "Programa Viver Mais Paraná" in the State of Paraná.

Cidade Madura is a housing program initiated in 2011 and delivered in 2014, aimed at facilitating access to housing for low-income elderly people. It is located in the *Cidade Verde* neighborhood, in the southern zone of João Pessoa. The program consists of 40 semi-detached houses, a square, a community garden, a social space, a medical post, a parking space, an administrative building, and a security booth (Programa [...], 2014). These houses belong to the government, and the residents only have a concession for use, which does not allow them to make any modifications, rent, or transfer the property. This model inspired other cities in the State of Paraíba, such as Campina Grande, Cajazeiras, Guarabira, and Pato (Miguel; Mafra, 2019).

The "Programa Viver Mais Paraná" is aimed at people over 60 years old, without their own home, and with a family income of one to six minimum wages, with priority given to those with lower purchasing power. Selected individuals may reside for an indefinite period and will be required to pay social rent equivalent to 15% of the minimum wage. The housing complexes follow similar conditions to those of the *Cidade Madura* program. There are already complexes in Jaguariaíva, Foz do Iguaçu, and Prudentópolis, and others are under construction in the cities of Cornélio Procópio, Irati, Telêmaco Borba, Cascavel, Francisco Beltrão, and Ponta Grossa.

Although these initiatives are very positive in addressing a growing problem, research conducted so far has identified issues such as non-compliance with specific legislation, undersized living spaces, unmet resident needs, and isolation, as well as a lack of communication within the housing complexes (Rodrigues *et al*., 2020).

In countries with a long-standing high percentage of elderly population and that have tried different housing alternatives for this group, aging in place is gaining increasing importance. This concept stems from the conceptual developments of being in place and aging at home (Rowles, 2000) and is defined as the possibility of aging in a stable environment (Phillips; Walford; Hockey, 2011). It also emphasizes the virtues of receiving care at home: maintaining autonomy, self-efficacy, expression and self-esteem, privacy, identity, maintaining relationships, connection to the neighborhood, and a sense of belonging (Dahlin-Ivanoff *et al*., 2007; Cooney, 2012; Rowles, 2000). Additionally, it benefits the entire population by promoting the strengthening of intergenerational relationships between the elderly and the community in which they live (Farber; Shinkle, 2011).

By keeping the elderly living in their homes, a place that has been important to them throughout their entire life cycle, it gains new significance in this final stage of life, becoming the necessary instrument for remaining part of society (Lebrusán, 2020).

Most of the time, when asked, older adults prefer to live at home, and doing so is also beneficial for their health and well-being, even for those who are dependent (Pinzón-Pulido, 2016). Furthermore, staying at home fulfills an important psychosocial function, as it becomes part of social representation and is essential for self-definition, anchoring people's identity and generating a sense of belonging (Preece, 2020).

The issue of identity is especially relevant for the elderly, as the lack of socialization at this stage of life makes aging a challenge to identity, making it difficult to define and sometimes hard to face. Thus, continuity in a familiar environment (where I know and am known) plays a fundamental

role in connecting old age with previous life stages, and therefore, with one's identity. Moreover, aging in place implies an active decision and the expression of a desire, symbolizing control over one's own life, allowing this phase to be experienced as a continuation of previous stages rather than something separate. It holds important meanings related to a person's experience, biography, and personality (Nygren *et al*., 2007). Additionally, it has been shown that keeping the elderly in their homes is the most cost-effective option for the state (Rowles, 1993).

In Spain, the *Etxean Ondo* ("living well at home") experience, promoted by the Basque Government and the Matia Gerontological Institute, aims to advance the review of the elderly care model under an ecosystemic, territorial, and community-based approach. It does so by developing a proposal for comprehensive home care capable of incorporating and coordinating the different roles played by the agents involved in this care: families, social services, primary and specialized healthcare, the domestic work and care sector, personal assistants, volunteers, community services, and community participation initiatives. The goal is to move from a rigid administrative model to an integrated care model, which would include the following principles: autonomy, choice, comprehensiveness, individualization, social inclusion, independence, and continuity.

However, for an elderly person to remain at home, the home must meet appropriate conditions that somehow compensate for the deterioration of their health and functional capacity (Miguel *et al*., 2018).

The deficiencies of homes make them incapable of providing quality of life to their residents, whether they are elderly or not. These issues are not so much related to the size of the housing stock but rather to its specificities and characteristics.

These problems require public policies that are not only aimed at building new homes but also at improving existing ones, with improvements ranging from regularization (titles and urbanization) to providing basic services infrastructure - such as installing sanitary units, water supply, waste collection, energy provision, among others (Fundação João Pinheiro, 2017).

To further explore the issue of housing inadequacy, we utilized the latest report from 2022 by the Fundação João Pinheiro (2022), which examined the calculation of the housing deficit and housing inadequacy in Brazil and its regions. The report presents updated results on the inadequacy of housing between 2016 and 2019, based on the re-evaluation of the PnadC (*Brazilian Institute of Geography and Statistics*, 2021).

In the document, residences are classified as inadequate according to the following criteria: (a) inadequacy of urban infrastructure, linked to sub-indicators such as water supply, sanitary sewage, waste collection, and electricity; (b) inadequacy of the building, related to the size of the dwelling, water storage, number of bedrooms, lack of a private bathroom, inadequate roofing, and flooring; and (c) inadequacy of the land, referring to properties located on land that is not privately owned.

Based on these indicators, four types of inadequacies are defined: (a) total inadequacy; (b)

infrastructure inadequacy; (c) building inadequacy; and (d) land ownership inadequacy.

In the following graph, an absolute increase in households with some type of inadequacy can be observed during the 2016-2019 period. In terms of the re-evaluated results, there is a small positive variation in absolute figures, but a relative decline.

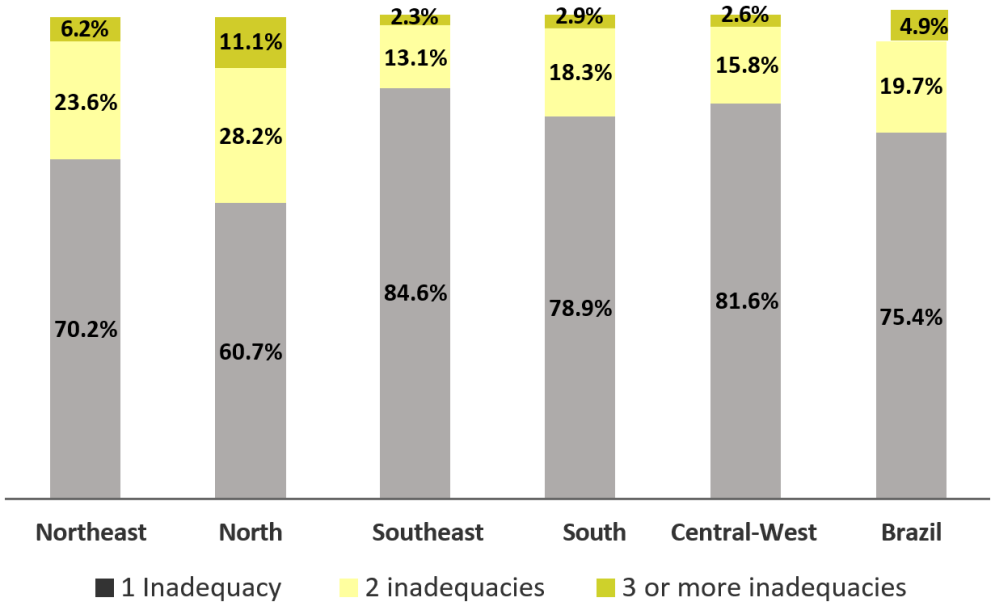

Figure 2 – Graph of the intensity of total inadequacies, according to the total inadequacies indicator – Brazil and Regions – 2019.
Source: Basic data from the Instituto Brasileiro de Geografia e Estatística (2021), PNAD CONTÍNUA, 2016-2019.

Although these data refer to the general population, it is easy to understand that people living in these homes, when they age, face the same problems, which, in their case, further jeopardizes their quality of life. Several studies conducted by Hui *et al.* (2014), Agnelli (2012), Tomé and Másculo (2006), and Mustaquim (2015) show that elderly homes should be analyzed with the aim of improving their quality of life homes where architectural barriers, design, and ergonomic issues do not hinder their autonomy and independence, and which ensure safety and comfortable daily mobility within their space.

In reality, many elderly individuals face daily challenges due to the lack of ramps or proper signage, lack of thermal, acoustic, and visual comfort, or exposure to noise and visual pollution (Bestetti; Graeff; Domingues, 2012).

When analyzing the elements that should be considered in a home for the elderly, Pistori and Ferrão (2004) highlight the following: the efficiency of the furniture, the rationality of circulation, the location and arrangement of equipment, and their methods of handling. To achieve good results with the changes, it is necessary to observe and analyze the daily life of the resident, including the time spent and the use of each space, and from there, make the necessary modifications.

In Spain, there is also an issue of housing inadequacy for the elderly, though to a different degree. Currently, there are 1,596,675 people over the age of 65 living in homes that suffer from what could be described as extreme residential vulnerability. This means they live in homes that accumulate a series of problems: habitability, health, safety, isolation, or minimal provisions of well-being. These problems never occur in isolation but combine in such a way that they severely affect the quality of life of those living in these homes. The more severe problems we face (such as not having a bathroom or piped water, structural issues with the building that endanger our safety), the more likely we are to experience other problems (such as lack of heating or an elevator). We refer to extreme residential vulnerability when this combination of problems occurs within the same home (Lebrusán, 2018).

The absence of elevators in multi-story buildings causes isolation and loneliness for the elderly residents, which consequently leads to social and health problems.

In the following image, we can see the areas in Spain with the highest number of homes without elevators among the 840,000 existing ones.

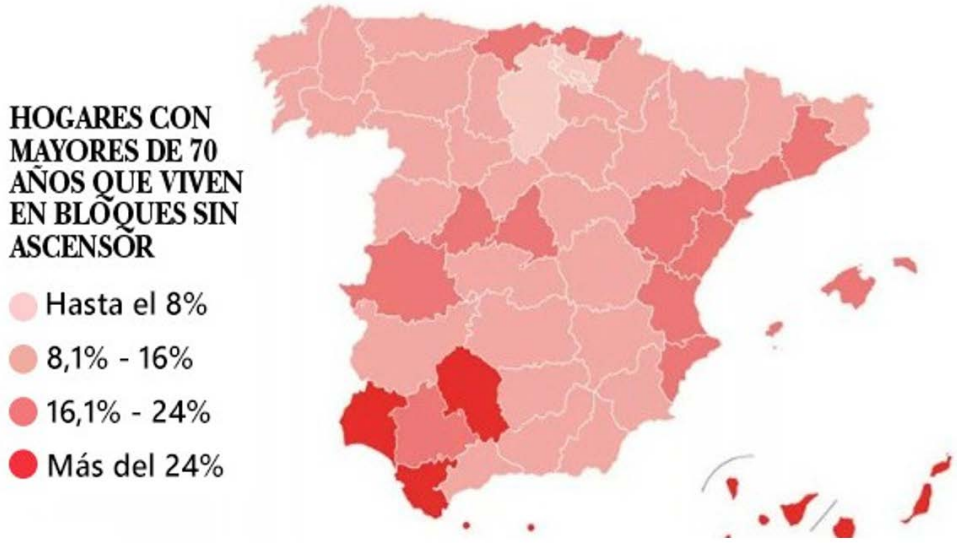

Figure 3 – Map of Households with People Over 70 Years Old Living in Buildings Without Elevators.
Source: El Mundo (2023).

Lastly, we would like to emphasize that adapting the home of an elderly person, something necessary for them to remain at home and improve their quality of life, does not mean turning it into something unfamiliar. It is important for the elderly to continue feeling that they are at home, surrounded by their memories and the things they love. Therefore, sometimes the changes are not so much about adding safety features, but rather about minimizing risks.

Environments

The issues related to environments described here represent "best management practices" based on (1) responses to the survey reported in the *Global Age-Friendly Cities Guide* and (2) the WHO's recommendation to listen to the voices of older people, as established in the *Action Plan for the Decade of Healthy Aging 2021-2030*. The best practices selected for this work do not exhaust the subject.

At this point, it is worth noting that the urban aspects discussed below concern the infrastructure of cities, which falls under the responsibility of public management and public-private partnerships. These represent a subset of problems that require effective public policies and legislation:

1) Urban Tree Planting: Trees in cities improve air quality, reduce noise pollution, provide shade, moderate ambient temperatures, and increase relative humidity. Brazil has legislation and plans in this area. Responses to the survey published in the *Global Age-Friendly Cities Guide* highlight the importance of an environment with balanced temperatures, green areas, cleanliness, and free from air and noise pollution (World Health Organization, 2007).

2) Reversible Public Roads for Physical Activity: Opening public roads, typically used by vehicles, for pedestrian use creates opportunities for people to move around, engage in physical activity, and even exercise - under the guidance of a qualified professional. In the *Global Age-Friendly Cities Guide* (World Health Organization, 2007), elderly people in various countries mentioned physical activity and injury prevention guidance as important services and health promotion factors. Brazilian urban policies include provisions for public recreational spaces and green areas (Brazil, 2001).

3) Urban Furniture for Rest During Long Journeys: Urban furniture meets the demand for rest during long journeys and provides shelter and social interaction at public transport stops, city squares, and parks. These are features outlined in the *City Statute* (Brazil, 2001) and are highlighted in the responses to the World Health Organization's (2007) survey as essential for comfort, well-being, and health.

4) Adequate Sidewalks: The characteristics of an adequate sidewalk include accessibility, appropriate width, smooth flow, continuity, protection against falls, space for socialization, and environmental comfort (Rio de Janeiro City Hall, 2015). In many parts of the world, sidewalks represent barriers and pose risks to the physical integrity of citizens (World Health Organization, 2007).

5) Areas for Physical and Motor Accessibility: Access to all built structures, such as ramps, handrails, solutions for uneven surfaces, and protections at public transport stops, is regulated by specific technical standards (Brazilian Association of Technical Standards, 2020) and by the *Brazilian Law for the Inclusion of Persons with Disabilities* (Brazil, 2015), which addresses barriers to city mobility. In many countries, accessibility is a crucial issue that is often inadequately addressed by urban planners and managers (World Health Organization, 2007).

6) Areas for Sensory Accessibility: Consisting of signage and lighting, the systems include signs, illuminated warnings, posters, and other materials and equipment that cater to the senses of sight, hearing, touch, and smell. The goal is to achieve clarity through "simple language" (São Paulo City Hall, 2020) and "universal design" (Francisco; Menezes, 2011) in stairways and entrances/exits, public buildings, public transport vehicles, and any situation that needs to be well understood to prevent accidents. This also applies to stations and bus stops, ensuring schedules and routes are readable and easy to understand. Additionally, resources are provided for cultural participation through the use of audio description, subtitles, and Brazilian Sign Language (Libras).

Conclusion

As we have seen, when we talk about the city and the right to the city for the elderly and society in general, we are referring to the right to enjoy urban life, with its public and open spaces, quality facilities and services, the ability to self-manage available resources, access to dignified housing that meets their needs, and the strengthening of autonomy and citizenship.

To achieve this, we must eliminate mobility and accessibility barriers - such as the quality of roads and sidewalks. These barriers remain a major challenge for cities to adapt their organization and functioning in order to promote a good quality of life for all people, especially the elderly, as is also the case with housing.

Rethinking the city so that it is not just an ideal habitat for the young should be one of the major challenges for architects, urban planners, geographers, economists, sociologists, and other

scientists involved in city planning. The goal is to create shared, inclusive, and friendly urban spaces that encourage social activity and facilitate access to services and opportunities for everyone, including the provision of public and green spaces that promote physical activity and social interaction. Furthermore, there should be an increase in the availability of appropriate, accessible services, and safe and responsible public transport.

Considering the socio-physical environment in aging implies recognizing that there are factors beyond biological ones that influence aging, thus contributing to a multidimensional and multidirectional understanding of the aging process.

It is also important to note that listening to and considering the opinions of older adults is crucial if we want to create increasingly livable cities for all generations. Age does not stop people from being citizens, and they must be treated as such.

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Contributors

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