



**DOSSIER: AGEING,
TERRITORY AND ENVIRONMENT**

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Innovative architectural design parameters for institutional housing based on older residents' perceptions of ambiance

Parâmetros inovadores de projeto arquitetônico para moradias institucionais com base nas percepções de ambiência de residentes idosos

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Abstract

The older population in Brazil has been growing exponentially, leading to a need for new housing alternatives, including more adequate options for long-term care facilities. Portugal has experienced this process for a longer period and serves as a relevant case for study. This research aimed to identify innovative architectural elements in institutional housing for older adults based on the Portuguese experience. Seven care homes in the Lisbon region served as case studies, where qualitative and exploratory research with 61 older residents was conducted. They were inquired about the ambiance of their homes, considering the physical and emotional environment. A questionnaire and semi-structured interview script were used along with field diaries. Data was categorized and analyzed using thematic content analysis. The responses were grouped into three domains: Environmental Comfort, Well-Being, and Belonging, and terms categorized into Advantages, Barriers, and Suggestions. Among the 16 subcategories defined, aspects such as social interaction, agency, belonging, autonomy, and well-being in the institutional environment were mentioned. Regarding architectural parameters, it meant embedding in the design elements such as privacy in shared spaces, noise reduction, accommodation of personal objects and furniture, and stimulating spaces for socializing, among others. In conclusion, the perceptions of older people about the ambiance can serve as inspiration for creating innovative architectural designs in long-term care institutions in Brazil. It is up to architecture and urban planning professionals to carefully listen and understand the context of each institutional housing to creatively incorporate the most appropriate parameters for each reality in their designs.

Keywords: Aging. Architecture. Care homes. Long-term Care Facilities. Older people.

Resumo

A população idosa no Brasil tem crescido exponencialmente, levando à necessidade de novas alternativas de moradia, incluindo opções mais adequadas para instituições de longa permanência. Portugal vivencia esse processo há mais tempo e serve como um caso relevante



para estudo. Esta pesquisa teve como objetivo identificar elementos arquitetônicos inovadores em moradias institucionais para pessoas idosas com base na experiência portuguesa. Sete instituições na região de Lisboa serviram como estudos de caso, onde foi realizada uma pesquisa qualitativa e exploratória com 61 residentes. Eles foram questionados sobre a ambiência de suas moradias, considerando o ambiente físico e emocional. Foram utilizados questionário, roteiro de entrevista e diários de campo para coletar dados, que foram categorizados e analisados através de análise de conteúdo temático. As respostas foram agrupadas em três domínios: Conforto ambiental, Bem-estar e Pertencimento, e os termos foram categorizados em Vantagens, Barreiras e Sugestões. Entre as 16 subcategorias definidas, aspectos como interação social, agência, pertencimento, autonomia e bem-estar no ambiente institucional foram mencionados. Em parâmetros arquitetônicos, isso significa incorporar ao projeto elementos como privacidade em espaços compartilhados, reduzir ruídos, acomodar objetos e móveis pessoais, criar espaços estimulantes e de fácil identificação, entre outros. Em conclusão, as percepções das pessoas idosas sobre a ambiência podem servir de inspiração para a criação de projetos arquitetônicos inovadores em instituições de longa permanência no Brasil. Cabe aos profissionais de arquitetura e urbanismo ouvir atentamente e compreender o contexto de cada instituição para incorporar em seus projetos, com criatividade, os parâmetros mais adequados a cada realidade.

Palavras-chave: *Arquitetura. Envelhecimento. Instituições de longa permanência. Pessoas idosas.*

Introduction

Brazil presents significant growth rates of the older population, demanding an urgent analysis of how to meet the requirement of adequate accommodation. According to data from the United Nations (2019), the population over 65 years would increase from 6.9% to 9.3% from 2000 to 2020. However, the last census has shown that the group of older adults, aged 60 years forward, has reached 15.6% of the Brazilian population (Bello, 2024). The decreasing birth rate determines a future scenario with fewer informal caregivers and a greater need for outsourced care, which leads to the option for institutional housing.

Instituição de Longa Permanência para Idosos (ILPI) is the name given to collective homes for older adults in Brazil, a technical nomenclature adapted from the expression “Long-Term Care Facilities” (LTCF), used by the World Health Organization – WHO (Camarano; Kanso, 2010; Costa; Mercadante, 2013). Its operation is guided by a technical regulation by the Collegiate Directive Resolution number 502 (RDC) of the National Health Surveillance Agency (ANVISA), part of the Ministry of Health (Brasil, 2021). It includes physical characteristics and professional support to meet the precepts for a good quality of life for older residents. Although LTCFs in Brazil are often confused with asylums, they have evolved in care for increasingly older people, considering the specificities of old age and contemporary demands (Silva; Yamaguchi, 2017).

The rupture of familiarity in the transition from the original residence to collective housing and the advancement of different degrees of dependence are issues related to heterogeneity in old age. Throughout life, one builds their history within a certain culture and spaces, including social and physical environments, which become places through their use and appropriation, subjectivity, and connectedness, giving great significance to certain environments (Nascimento, 2023; Pedroso, 2018). As we age, these places, especially the home environment, provide a sense of belonging, comfort, and agency, due to routines, familiarity, and idiosyncrasies created over a long time (Nascimento, 2023; Rowles, 1983), ultimately impacting the health and well-being of older people.

Therefore, it is important to consider the needs and expectations of older residents regarding their living environments. When we get acquainted with the reality of many Brazilian care homes, however, we realize that the focus on assistance has dominated care, often leaving

aside the residents' protagonism (Costa; Mercadante, 2013; Silva; Nascimento; Bestetti, 2020). On one hand, it results from the intention of offering the best service, on the other, it fallouts in overloading employees, who are compelled for productivity and fail to offer a more sensitive service to the emotional needs of residents.

Reflecting on the current Brazilian housing models for older individuals, alternatives to different demands are lacking. In Portugal, the aging phenomenon has been occurring over a longer period at a slower rate than in Brazil. As a result, Portugal has already overcome many of the issues in the care and housing sector that Brazilian society is currently facing and will have to deal with soon. In this sense, the Portuguese Residential Structures for Older People (*Estruturas Residenciais para Pessoas Idosas*, ERPI in Portuguese) offer interesting differentials, since the European continent has adjusted to the need for these accommodations sooner than Latin America.

The Portuguese experience presents important contributions to innovative proposals in institutional housing (Fonseca, 2018, 2023). For instance, the prejudice against collective housing is being fought by combining ERPI with other facilities and services in the same building, such as kindergarten and day-care centers for older adults, integrating the local community and residents. The proximity to other countries also allows for the exchange of information, practices, and technologies to stay updated with new developments. Technology, in this context, refers to the tools and methods used to perform tasks (Amaral, 2015). It includes assistive devices that make work easier and processes that can be adjusted to improve the effectiveness of services. Despite the differences regarding aging and care in Brazil and Portugal, the cultural, linguistic, and more specifically, operational similarities between ILPI and ERPI support the research done in this European country, using it as a case study.

From the standpoint of Environmental Gerontology, it is possible to acknowledge how dynamic the relationships between old people and the environment are when considering the dimensions of historical, cultural, and ecological changes, social and family arrangements, technological innovations, and individual characteristics (Batistoni, 2014; Oswald *et al.*, 2024). The ambiance, defined by comfort, production of subjectivities, and improved work processes (Brasil, 2010; Brasil, 2017), present in institutional housing is co-constructed by residents and staff and is effectively transformed according to the changes resulting from living with other individuals. A friendlier institutional housing environment can become a solution compatible with the evolution of social dynamics.

To this end, this article presents some of the research findings from a study conducted between 2019 and 2020 in Lisbon. The study aimed to establish innovative architectural parameters in institutional housing for older adults that promote autonomy among residents, facilitate care processes, and improve the quality of services provided.

Architects and urban planners must respond to society's new demands, considering that older people are increasingly connected to the virtual world, and there is an urgent need to develop housing options that address their needs. Only by practicing empathy will it be possible to truly immerse oneself in the universe of the residents of institutional homes dedicated to caring for the ever more longevous older people.

Methodological Procedures

This was qualitative and exploratory research conducted in Portugal, in the Lisbon region, with support from the São Paulo State Research Support Foundation (FAPESP), between October

2019 and January 2020. Over 25 ERPI in the Lisbon region were contacted and invited to participate in the research, but only 7 accepted the invitation, thus making the final sample. Each ERPI selected its residents and attested to the participants' cognitive abilities and capacity to answer the questions. The researcher was given a list of participants identified by managers during her visit to the institution. Finally, 61 older people in 7 different care homes participated in the research. The managers of the care homes authorized the research, and all the interviewees signed a Free and Informed Consent Form.

The instruments used were a field diary, to record relevant information, both in meetings with the managers and during the interviews; a questionnaire with closed questions about the physical and emotional environment of the residence, and interviews with a semi-structured script. The questionnaire had 15 questions about the physical and social environment of the ERPI divided into three domains (environmental comfort, well-being, and belonging), each with 5 questions, answered using a Likert scale of faces, descriptors, and numbers from 1 to 5, with the lower (1) being "very bad" and the higher (5) being "very good". The interviews were done individually following the questionnaire application, allowing participants to elaborate their responses and share their subjective perceptions of their living environment, relationships with others, and feelings in more detail. All the interviews were recorded and later transcribed. The data analysis was conducted using the content analysis technique (Bardin, 2009), which consists of identifying categories a posteriori emerged from similarities and differences in participants' speeches, emphasizing terms and expressions that were frequently repeated. The research was performed in compliance with the ethical procedures adopted by the Brazilian university and approved by its Ethics Committee².

Results and Discussion

Older residents aged between 65 and 102 years (mean 80.9 years) participated in the study, 59% female and 41% male, with schooling ranging from elementary to higher education. The interviewed residents were attested as having preserved cognitive ability by the ERPI's staff and did not have difficulties with the scale of faces, since recognition could be compromised if there were cognitive losses.

Data from 61 questionnaires with 15 objective questions were tabulated, and nearly 13 hours of recorded interviews were transcribed. The data from the questionnaire responses was divided into the same three domains that comprised it: Environmental Comfort, Well-being, and Belonging.

The Environmental Comfort domain asked about perceptions of temperature, lighting, and ventilation in the facility, as well as circulation in the hallways and maintenance of furniture and equipment. There was a predominance of "good" answers for the questions in this domain (Figure 1). Opinions were divided in one care home between "good" and "very good", and predominantly "very good" in another. There were comments about the intensity of artificial lighting, the lack of ventilation due to the care taken to preserve the health of the most fragile people, and the constant use of air conditioning to maintain the temperature. The criticisms referred mainly to the eventual damages that cause discomfort, which was quite emphasized. On the other hand, there are positive opinions, showing that the perception of environmental comfort varies according to the level of fragility, but also by a more critical look with advancing age (Charles; Carstensen, 2010; Chaudhury; Oswald, 2019).

² The research was submitted and approved by the Research Ethics Committee of the Brazilian university on October 8th, 2019 (process number 3.626.939).

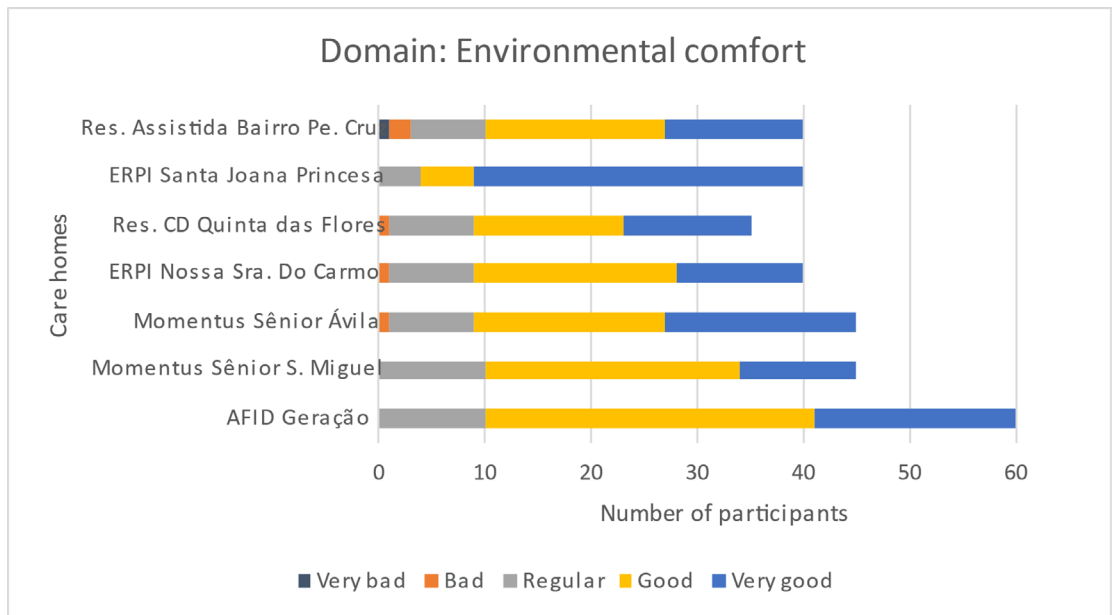


Figure 1 – Assessment of the Environmental Comfort domain.

Source: Elaborated by the authors (2020).

In the Well-being domain, the respondents evaluated comfort of armchairs and seats in the cafeteria, floor unevenness, circulation between rooms, and their overall well-being in the home. There were divided opinions (Figure 2), ranging from “regular” to “very good”, particularly in one of the locations. Three facilities had at least one person evaluating this domain as “bad”. Nonetheless, the institutions were mostly classified as “good” or “very good”, characterizing a positive result. Noises coming from staff conversations and residents living with dementia stood out in the speeches, even though they said it was tolerable because they were aware of the irregular behavior that occurs due to dementia. They also spoke about the height and firmness of sofa and armchair seats causing discomfort when getting up. The malfunctions disrupt circulation when many people are waiting for elevators. The presence of many wheelchair users is noted in corridors that are frequently not wide enough for a two-way passage and people standing with walkers or canes. There were some negative perceptions regarding the feeling of being far from one’s own home, sometimes without the possibility of returning, which affected the overall sense of well-being in the residence.

Finally, the domain Belonging evaluated perceptions regarding the staff responses to suggestions and requests, their friendliness and appreciation of residents, activities in the collective environments, and the relationship with other residents. Most of the opinions varied from “good” to “very good” (Figure 3). Only one place indicated a slight predominance of “regular”, where many residents with a high level of education were concentrated and eager for cultural activities, which were not always possible to provide. There were references to situations of confrontation with caregivers, especially because the need to speed up the work could lead to disregarding the time needed for the resident to feel part of the process. They reported the lack of interlocutors among the residents as there were many living with dementia. Others were bothered by the living conditions, generating relationship difficulties and even competition for the staff’s attention. It is important to have alternative activities that meet the desires of the residents, while some prefer quieter environments, others look for more lively interactions.

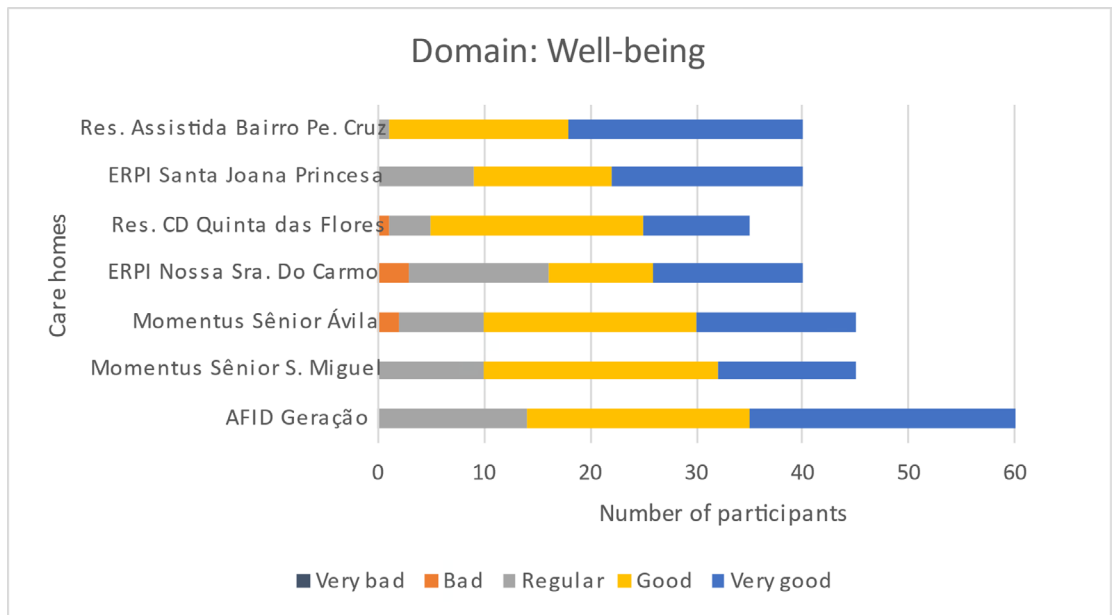


Figure 2 – Assessment of the Well-Being Domain.

Source: Elaborated by the authors (2020).

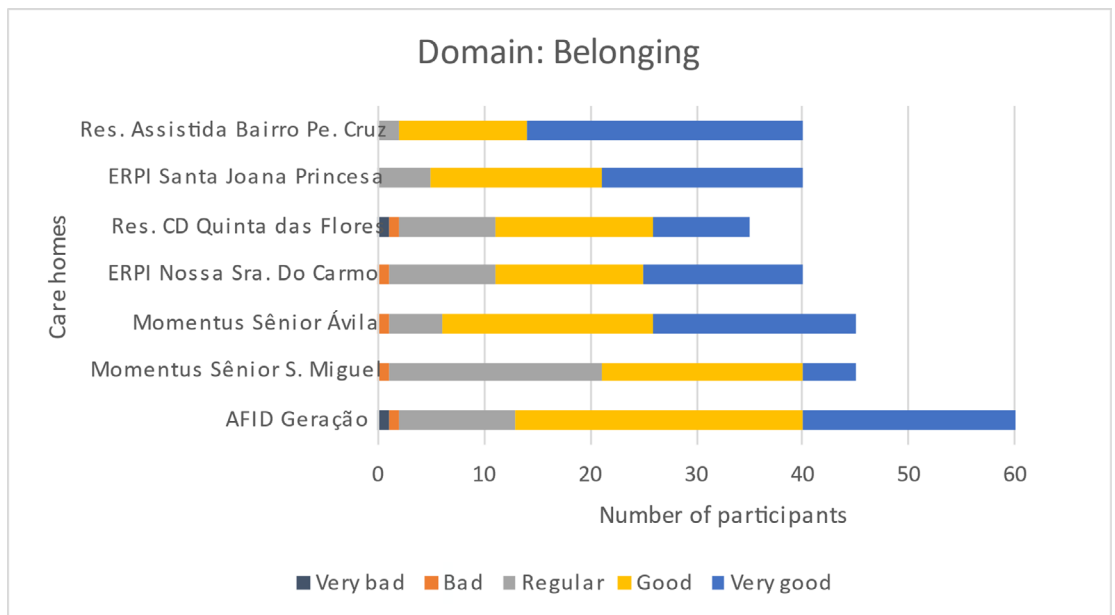


Figure 3 – Assessment of the Belonging Domain.

Source: Elaborated by the authors (2020).

Then, the participants proceeded with the interview, which assessed their subjective perceptions of home. They were asked about their feelings towards their living environment and the other residents, sense of home and familiarity, and their preferences regarding spaces in the facility and activities. The interviews were always carried out after the response to the objective questionnaire, a moment that facilitated communication and reduced the resistance of most participants.

The data from the recorded interviews were analyzed and distributed into three categories of analysis for each question: “Advantages” – answers with positive aspects that may point out gains related to the experiences in the facility; “Barriers” – referred to restraints of well-being, which could have extrinsic and intrinsic causes³; and “Suggestions” – highlighted by some who have expressed the desire to contribute with transformations that they considered positive and, therefore, deserve attention for being the result of a bottom-up vision, a perspective that underlies the method adopted. After organizing each sentence into one of the 3 categories abovementioned, 16 subcategories of analysis were established and labeled based on the most significant part of the speeches or the underlying meaning of the content, as described by Bardin’s technique (2009). Table 1 presents the categories and subcategories and the simple frequency of repetition.

Table 1 – Frequency of terms divided into advantages, barriers and subcategories, Lisbon, 2020.

Subcategories	Advantages		Barriers	
	n	%	n	%
Privacy	35	7,40	22	5,49
Social Interaction	72	15,22	36	8,98
Agency	59	12,47	58	14,46
Belonging	53	11,21	14	3,49
Resilience	20	4,23	32	7,98
Resistance	0	0,00	53	13,22
Autonomy	59	12,47	32	7,98
Territory	33	6,98	27	6,73
Environmental comfort	10	2,11	11	2,74
Prominence	35	7,40	8	1,99
Well-being	57	12,05	32	7,98
Safety	21	4,44	21	5,24
Attachment	3	0,63	17	4,24
Family	3	0,63	6	1,50
Livelihood	5	1,06	10	2,49
Mobility	8	1,69	22	5,49
Total	473	100,00	401	100,00

Source: Elaborated by the authors (2020).

It can be noticed that among the terms that express “Advantages”, “Social interaction” stands out, especially considering the possibility of creating social bonds living in institutional housing. “Social interaction” was less seen as a barrier, and those who classified it as such did it mostly because of the difficulties of living in disturbed environments, especially due to the “uncomfortable” manifestations of individuals living with dementia. In a few cases, residents had a previous relationship with the surrounding neighborhood, which contributed to maintaining the social bonds. However, those who started living with others, which meant having company during meals, activities, or trips, and discovering new friendships, realized the loneliness previously experienced, with no support for the necessary care or even with severe mobility limitations due to the insecurity of not having someone to count on. Nonetheless, it is important to bear in

³ It should be considered that the interview was made in a single opportunity, although it happened only after the interviewee’s agreement, uncomfortable situations before the meeting with the researcher might have happened and could have influenced his/her mood.

mind that living in residential homes for older adults does not guarantee that these connections will be stimulated, especially if the routines are focused only on care and assistance. The active participation of the residents in the institutional environment is essential, enabling interactions with peers, and facilitating the sharing of activities (Bonicenha, 2019; Regnier, 2018).

“Agency” had similar frequencies in “Advantages” and “Barriers”. Agency is the ability an individual develops to exercise control over his/her physical and social context, involving proactive behaviors (Nascimento, 2019; Oswald *et al.*, 2024; Wahl; Iwarsson; Oswald, 2012). The processes of agency include cognition and control over the physical environment, both in the reactive and proactive sense of use, facilitating the understanding of the place lived (Wahl; Iwarsson; Oswald, 2012). In adulthood the sense of agency is high, reducing as we age due to factors like the decrease in capabilities and changes in social life, being accentuated over time. Exercising their agency was viewed by the participants as both beneficial and sometimes compromised in the institutional setting.

Keeping personal objects from the original residence is a way of exercising agency because the older person is an agent of change in his/her own life through these intentional and proactive behaviors (Wahl; Iwarsson; Oswald, 2012), as pointed out by several interviewees regarding the ownership of a television set or a radio, besides pieces of furniture, according to the available space. The intention to maintain some familiarity with their place of esteem was noticeable, either through an object or by being able to compose it with furniture and other complements (Figure 4). A television in a private environment allows leisure, spending time, and staying connected, being the most popular personal belonging among all objects. They indicated that it was the most common way to fight boredom, and it was important for those with physical limitations because they could use it independently. They also drew attention to the importance of bringing furniture from the old house, with an emotional value associated with it, since it reminds them of significant moments in their lives (Hoof *et al.*, 2016). For space availability reasons, often shared with other residents, photographs are the most used items to remember memorable moments, often depicting family members (Figure 5).

Even though social contact in pleasant environments is always desirable, the bedroom alone does not define the feeling of home, even if it contains important objects like souvenirs (Hoof *et al.*, 2016). The notion of home is part of the resident’s identity and integrates past and present in the rituals and routines of everyday life (Pallasmaa, 2017). Therefore, institutions should allow older residents to exercise their agency in other spaces outside the bedroom, being part of the designing process, and contributing to the maintenance of residents’ autonomy.

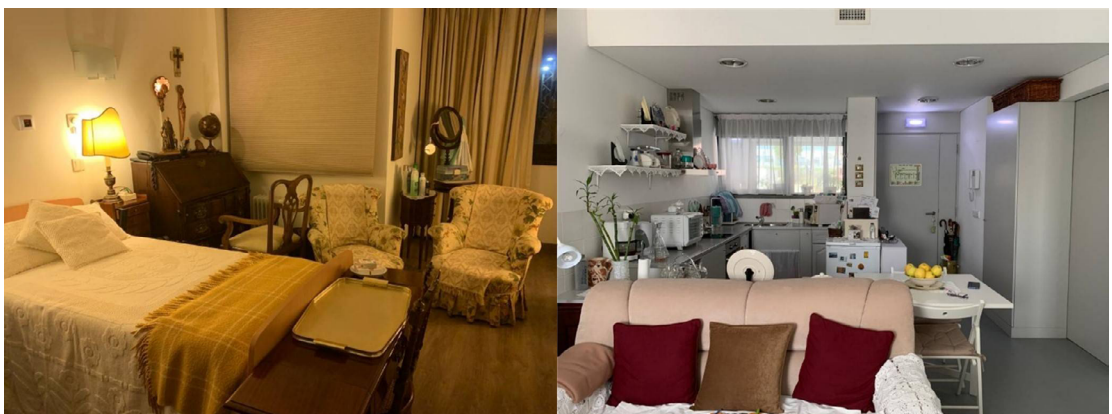


Figure 4 – Room with resident’s furniture and belongings can be a way to provide familiarity and exercise agency (ERPI Momentus Sênior Ávila on the left, Residência Bairro Padre Cruz on the right).

Source: First author (2020).



Figure 5 – When the room is shared, the TV or a photograph can provide a sense of agency to residents. A room at AFID Geração on the left, and ERPI Nossa Senhora do Carmo on the right.

Source: First author (2020).

“Autonomy” is related to self-management and the ability to make decisions (Neri, 2005). It also regards preferences and needs for identifying elements present in different scenarios (Bluyssen, 2020). Lawton and Nahemow’s (1973) studies assume that unique combinations of personal competence and environmental characteristics determine an individual’s optimal level of functioning. Thus, there is continuity and control over activities important to each individual because the individual’s ability is combined with the environment’s condition (Oswald *et al.*, 2024; Regnier, 2018; Wahl; Iwarsson; Oswald, 2012). Environment adaptation allows the maintenance of autonomy, avoiding the learned dependence, when the person is assisted with something he/she can do it himself/herself (Regnier, 2018). Maintaining control over one’s capabilities contributes to overcoming adversity. Persevering individuals develop the ability to cope with unexpected experiences and create new strategies to achieve objectives without fear (Golant, 2015). The participants seemed to have their autonomy preserved, as it was pointed out as an “Advantage”, for it was important for them to make their own choices. Nonetheless, some interviewees indicated a desire for freedom because certain rules forced them to change their habits when they came to the institution (Hoof *et al.*, 2016). Even if older adults trust influencers, family members, staff, and other social actors, being able to exercise agency and preserve their autonomy may reduce the feeling of losing those traits (Golant, 2015; Wahl; Iwarsson; Oswald, 2012).

“Well-being” was another term that had a significant frequency as an “Advantage”. Well-being involves comfort conditions, culture, and religion, as well as understanding that perceptions are different in the different degrees of dependency among seniors (Braga; Bestetti; Franco, 2016). For instance, interior design preferences are personal, just as the dimensions of some pieces of furniture will not meet the anthropometric characteristics of all users (Regnier, 2018). For the participants, dining environments require better attention to noise, lighting, floor covering, and furniture design. Chairs need armrests and seats that are high enough to facilitate sitting and standing up (Regnier, 2018) (Figure 6).



Figure 6 – The ambience of dining spaces should be given attention, as the attempt of enrichment can be overwhelming to residents (ERPI Quinta das Flores).

Source: First author (2020).

As for subjective comfort, there were reports of moments of pleasure when enjoying the transparency of the windows, since there is a strong feeling of home when seeing the world through them in a controlled and safe way (Pallasmaa, 2017). As for leaving the facility, many are afraid of feeling helpless, although some maintain routines of interacting with the neighborhood to preserve their autonomy. Comfort is not only physical, but also involves social, psychological, and sentimental issues built in relationships (Braga; Bestetti; Franco, 2016).

Finally, “Belonging” was also a frequently mentioned “Advantage”. It means the feeling of being connected to the physical environment and social relationships, reflects positive situations of connections (Nascimento, 2023; Wahl; Iwarsson; Oswald, 2012). Cultural identity defines the feeling of “having roots”, an exchange between the individual and the place to which he/she belongs (Pallasmaa, 2017). The need to belong becomes stronger as people grow older. This might explain why older individuals seek relationships and surroundings that provide them with a sense of safety and purpose. They tend to prefer environments that promote their well-being and positive emotions (Charles; Carstensen, 2010; Nascimento, 2019). Belonging incorporates cognitive, emotional, behavioral, and physical aspects, and familiarity is developed over time (Oswald *et al.*, 2024; Wahl; Iwarsson; Oswald, 2012). Those who live in a collective home environment must recognize themselves in that space to inhabit it, constructing new ties to people and places to truly make it their home (Pedroso, 2018).

The attitude of employees is a fundamental issue for the sense of belonging and well-being, as well as the social interactions with other residents, given that the institutional facility may not

seem like a home environment (Regnier, 2018). As they strive to show joy and affection, they may annoy residents with noisy, effusive, or impertinent actions. Cultural differences emerged strongly in some interviews, as many employees in the institutions come from former Portuguese colonies in Africa and have different behaviors from continental Portuguese. In this case, the inability to relate with other individuals can lead to apathy and negative responses from both sides, impacting well-being and sense of belonging to the group, and hindering active participation (Bonicenha, 2019).

Engaging in activities such as bird feeding, gardening, and watering plants can also provide a higher sense of purpose (Regnier, 2018). Some of the places visited even keep small pets, demonstrating that having contact with nature and animals may reduce stress and decrease loneliness, including the opportunity to establish affectionate relationships. Gardens are important for relaxation and leisure when integrated with seating areas, and garden views can be taken advantage of through large windows and low windowsill heights, optimizing viewing for a seated person or someone lying down, ensuring equal opportunities for all residents despite their capacity or level of dependency (Regnier, 2018).

Although not less important, other subcategories had less significant frequencies both in “Advantages” and “Barriers” such as “Privacy”, “Resilience”, “Territory”, and “Safety”.

Final Considerations

Based on the aspects indicated by data collected in care facilities in the Lisbon region, it is possible to list some suggestions for architectural parameters for designing long-term care facilities for older adults, the purpose of this study.

Starting with the bedroom, where many residents spend long hours, there is a need to create more privacy in shared apartments, by using remote-controlled curtain systems for example, as well as to facilitate the accommodation of furniture and personal objects, offering options compatible with the room size. Regarding communication and space use, it should be considered an easy way to identify doors, using symbols, colors, pictures, or other elements that are easily understood by all residents. Animating hallways and indoor areas with visual elements, like a special mural, paintings, plants, or art, may encourage mobility within the facility, especially for residents who feel unsafe or compelled to stay in the bedroom. Defining smaller living environments with diverse sensory elements is also encouraged, both indoors and outdoors (Figure 7).

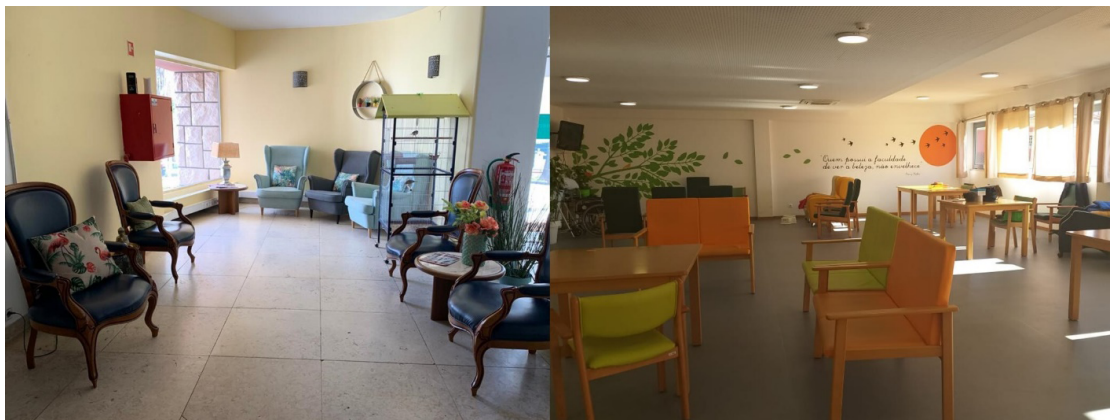


Figure 7 – The possibility of setting up smaller areas (ERPI Momentus Sênior São Miguel on the left), even in large rooms, (ERPI Santa Joana Princesa on the right) is encouraged to promote encounters among residents.

Source: First author (2020).

Organizing the cafeterias to make coexistence possible by reducing the noise caused by the handling of utensils, guiding employees to reduce interference, and stimulating conversations among those who live together. Providing coatings that enhance acoustics on the table and choosing furniture with adequate proportions for residents with compromised posture, including elevating seats and footrests, contributes to a more resolute ambiance. Enhancing the living environments with layouts that allow the formation of groups, composing them with sofas and armchairs in appropriate proportions, and enabling the use of outdoor spaces with non-slip coatings, low-slope ramps, and resting spaces, are conditions that encourage the interaction of the residents.

It is recommended to use windows that allow superior ventilation or complete opening, bringing natural light and ventilation, mainly to the bedrooms. Lighting should be compatible with use, providing different options to be used throughout the day according to the activity being carried out (Figure 8). As for complementary environments, creating therapeutic rooms for recreational activities and keeping equipment in ample, cozy, and inviting spaces should also be considered. If possible, incorporate a room for sensory therapy with thermal and acoustic isolation, reserved for treatments that require concentration and tranquility. Finally, it is essential to provide the use of assistive devices to reduce the burden on caregivers and staff and improve the care conditions for dependent individuals.



Figure 8 – Openings in the façade with different sizes and heights (*Residência Bairro Padre Cruz* on the left), terraces and gardens (*ERPI Quinta das Flores* on the right) are recommended to provide natural light, ventilation and a connection between residents and the community outside the facility.

Source: First author (2020).

Additionally, encouraging intergenerational relations in the combination of child day care and senior housing can benefit both groups, especially when facilities are close in proximity and interactions are planned (Arentshorst; Kloet; Peine, 2019), as found in two of the seven institutions (Figure 9). Intergenerational experiences and the promotion of diverse activities require solutions tailored to different needs and desires.

Long-term care facilities or institutional housing for older people carefully planned and designed not only support agency-related processes and autonomy in later life but can also foster

a sense of belonging by creating new relationships and friendships among people from different generations, backgrounds, genders, races, and cultures. Positive social relationships contribute to well-being, reduce stress levels, and may improve cognitive ability, leading to increased life satisfaction and happiness, impacting the overall quality of life in later life (Charles; Carstensen, 2010).



Figure 9 – The combination of a kindergarten and residence for older adults in the same building (AFID Gerações) encourage intergenerational relations through joint activities and shared spaces.

Source: First author (2020).

Furthermore, it is suggested for future studies to research cases in other countries and regions, considering that there are cultural differences. Evaluating a larger number of facilities and inquiring employees and other older residents, including people living with dementia or who cannot leave their beds, would also be interesting to deepen the understanding of the ambiance in institutional housing. Finally, if significant changes are made to an institutional housing facility, it is important to follow the process and conduct a post-occupancy evaluation. This evaluation can assess how the changes are perceived by residents and staff and could be useful in proposing new guidelines and policies.

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