Race, gender, monthly per capita household income, and neighbourhood perception of older Brazilian adults:
a matrix of critical processes

Pablo Cardozo Roccon[1]
Amanda Cristina de Souza Andrade[2]
Mariana Rosa Soares[3]
Maelison Silva Neves[4]
Universidade Federal de Mato Grosso

Waleska Teixeira Caiaffa[5]
Universidade Federal de Minas Gerais

Abstract: We explored differences in gender, ethnicity/skin color, and monthly per capita household income in the neighborhood perception by older Brazilians living in urban areas, analyzing data from 7,357 ELSI-Brazil participants. We performed a gender- and age-adjusted prevalence estimate of neighborhood perception. Based on the literature and the results, we constructed a matrix of critical processes that relates the poor perception of neighborhood quality among Black and brown people, those with lower monthly per capita household income, and women with structural inequities that challenge healthy aging in Brazil.

Keywords: critical epidemiology; neighborhood perception; aging; urban health; collective health.

[1] Social Worker. Ph.D. student in Public Health at the School of Medicine of the Federal University of Minas Gerais (UFMG). Ph.D. in Education and Master in Collective Health from the Federal University of Espírito Santo. Professor at the Institute of Collective Health (ISC) and the Postgraduate Program in Collective Health at the Federal University of Mato Grosso (UFMT). Researcher at the UFMG Belo Horizonte Urban Health Observatory (OSUBH) and the UFMT Center for Environmental Studies and Occupational Health (NEAST).
[2] Statistician. Master's in Epidemiology from the René Rachou Research Center of the Oswaldo Cruz Foundation (IRR/Fiocruz), Ph.D. in Public Health, with post-doctorate from the Federal University of Minas Gerais (UFMG). Professor at the Institute of Collective Health and the Postgraduate Program in Collective Health at the Federal University of Mato Grosso (UFMT). Researcher at the UFMG Belo Horizonte Urban Health Observatory (OSUBH).
[3] Nurse. Master's and Ph.D. student in Collective Health from the Postgraduate Program in Public Health at the Federal University of Mato Grosso (UFMT). Researcher at the UFMT Center for Environmental Studies and Occupational Health (NEAST).
[4] Psychologist. Master's in Education from the State University of Mato Grosso (UNEMAT) and Ph.D. in Collective Health from UFMT. Professor at the Institute of Collective Health (ISC) and the Postgraduate Program in Collective Health at the Federal University of Mato Grosso (UFMT). Researcher at the UFMT Center for Environmental Studies and Occupational Health (NEAST).
[5] Physician, Master's in Public Health from the Bloomberg School of Public Health at Johns Hopkins University, Ph.D. in Parasitology from UFMG, with post-doctorate from Johns Hopkins University. Full epidemiology and public health professor at the UFMG School of Medicine and the Postgraduate Program in Public Health. Coordinator of the UFMG Belo Horizonte Urban Health Observatory (OSUBH).

Raça, gênero, renda e percepção da vizinhança de adultos mais velhos brasileiros:
uma matriz de processos críticos

Resumo: Exploramos as diferenças de gênero, raça/cor e renda domiciliar per capita na percepção da vizinhança entre brasileiros adultos mais velhos residentes de áreas urbanas a partir dos dados de 7.357 participantes do ELSI-Brasil. Estimou-se as prevalências ajustadas por sexo e idade da percepção da vizinhança. Com base na literatura e nos resultados, foi construída uma matriz de processos críticos, que relaciona as percepções ruins da vizinhança entre pessoas pretas e pardas, com menor renda e mulheres com iniquidades estruturais que desafiam o envelhecimento saudável no Brasil.

Palavras-chaves: epidemiologia crítica; percepção da vizinhança; envelhecimento; saúde urbana; saúde coletiva.

Raza, género, ingreso familiar per cápita y percepción del vecindario de los adultos mayores brasileños:
una matriz de procesos críticos

Resumen: Exploramos las diferencias de género, raza/color e ingreso familiar per cápita en la percepción del vecindario entre los adultos mayores brasileños que viven en áreas urbanas, analizando datos de 7.357 participantes del ELSI-Brasil. Se estimaron prevalencias ajustadas por sexo y/o edad de percepción del barrio. A partir de la literatura y los resultados, se construyó una matriz de procesos críticos, que relaciona percepciones de barrio pobre entre personas negras y pardas, con menores ingresos y mujeres con inequidades estructurales que desafían el envejecimiento saludable en Brasil.

Palabras clave: epidemiología crítica; percepción del vecindario; envejecimiento; salud urbana; salud colectiva.

In recent decades, cities have faced the simultaneous transformation of population profiles and urban population growth. On the one hand, we observed a demographic expansion in urban spaces, with estimates indicating that around 68% of the world's population will reside in urban areas by 2050, especially in Latin America and Brazil (UNITED NATIONS, 2019, 2020). On the other hand, there is a global process of population aging, with projections of an increase from 9.3% in 2020 to approximately 16% in 2050 (UNITED NATIONS, 2020). In this context, two important fields of knowledge production converge: urban health and aging studies. These areas join to provide subsidies for formulating public policies and guidance for managers and promoting healthy aging.

The United Nations has been working to gather governments, private sector members, international organizations, universities, and civil society to promote improved living conditions for older adults and communities (PAHO, 2020). As part of these actions, the plan "The United Nations Decade of Healthy Aging 2021-2030" was launched, which involves four action areas:

> change the way we think, feel, and act toward age and aging; *ensure that communities promote the skills of older adults*; deliver person-centered and age-appropriate integrated care and primary health care services for older adults; and provide access to long-term care for older adults who need it. (PAHO, 2020: 4, emphasis added)

Ensuring that communities promote the skills of older adults is a healthy aging concept guideline whose goal is to maintain and strengthen the functional abilities of older adults (PAHO, 2020). Functional abilities are related to autonomy in performing daily tasks, personal development, self-care, relationships with others, and societal intervention. They are divided into two dimensions.

The first is intrinsic capacity, which addresses individual physical and mental capacities involving locomotion, visual and auditory sensitivity, vitality, cognition, and mental health. The second is environments, which may be barriers or facilitators of intrinsic capacities, including home, community, and society (PAHO, 2020). In this sense, the WHO recognizes the place where older adults live and build their sociability as a component of a set of conditions that can limit or favor healthy aging.

Districts[6] are privileged places for the development of social reproduction of different fractions of the social class with their set of characteristics and economic, racial, and gender power relations. In this set of relations, the social determinations of the conditions and possibilities for satisfying the needs of existence emerge, creating collective ways of life and individual lifestyles (BREILH, 2006). Breilh (2006, 2013) states that social determination of the conditions of

---

[6] In this text, district, and neighborhood are not treated as synonyms. Based on the literature, Célio *et al.* (2014) analyze that the neighborhood can be defined based on administrative and geographic units or by the residents' perception of the territorial extension. Imbronito (2017) makes it possible to understand the district as a set of physical and social attributes that give it vitality and the neighborhood as a set of social relations within the former, constituting an important heritage of the district. Thus, the district is shaped by the appropriations of space in constituting neighborhoods that give subjective existence to the former (IMBRONITO, 2017).

existence is engendered in the analysis of the dialectical relations[7] between social, natural, and biological aspects based on the dimensions of reality. The author proposes a matrix of critical processes to understand and intervene in such processes, through which the destructive processes[8] (vulnerabilizing, unhealthy, dangerous, and deteriorating health) and their antithesis, the protective ones[9] (healthy, improving, and promoting health) are analyzed (BREILH, 2006, 2013).

In this sense, considering the constitution of districts and neighborhoods under a matrix of critical processes can expand the capacities for analysis and interventions on disadvantages that may emerge from such formations. Weden *et al.* (2008) analyze that neighborhoods can be constituted by attraction and expulsion mechanisms. The first corresponds to mechanisms by which people with similar origins through social networks occupy the same neighborhood. The second results from policies that exclude people from some districts, preventing them from living in specific places due to real estate policies that produce a selection of residents into and out of neighborhoods based on characteristics such as ethnicity and class. Such mechanisms point to the existence of groups of individuals who experience more significant disadvantages due to systemic and structural barriers, so that place of residence is determined by the residents' social position and ethnicity (DIEZ and MAIR, 2010; STOKES, 2019).

Due to functional limitations involving economic, emotional, or even physical aspects, older adults generally experience the proximity of their homes more intensely, thus spending more time in the neighborhood (SANTOS *et al.*, 2022; STOKES, 2019). Furthermore, older adults are more exposed to the likelihood of illness from neighborhood characteristics compared to younger adults (JULIEN *et al.*, 2012). For this reason, research on how urban neighborhoods affect the health of older adults has been set as one of the UN's goals for producing evidence to inform government officials (UNITED NATIONS, 2016).

One strategy to investigate how urban areas, districts, and neighborhood characteristics affect residents' health has been assessing neighborhood perception (WEDEN *et al.*, 2008; CAIAFFA *et al.*, 2008). Imbronito (2017) argues that the perception of district space depends on the relationships established with people and the place itself. According to Weden et al. (2008), assessments of neighborhood perception may more closely reflect individual assessments of living conditions and dimensions not recordable by objective district assessments.

Understanding older adults' perception of their neighborhood has been one of the goals of aging studies, as most older adults live in community environments, and successful aging depends on the quality and structure of their dwelling place (STOKES, 2019). Neighborhood perception is intrinsically linked to the life trajectory of older adults (STOKES, 2019). Furthermore, it can reflect different individual and collective experiences that, in turn, are engendered by inequalities accumulated in this trajectory (MICHEL and SADANA, 2017; ELLIOT, 2000). These inequities must be analyzed as a product of the determinations of the conditions of becoming ill or living in health, crossed by gender, ethnicity, race/color, and social class markers, as proposed by Breilh (2006, 2010, 2024).

Thus, this article aims to (1) explore the differences in ethnicity/skin color, monthly per capita household income, and gender in the Brazilian older adults'

---

[7] The dialectical rationale understands thought as a way of appropriating (abstracting) the dimensions (singular, particular, and universal) that structure social reality in a dialectical relationship of multiple determination and historicized within the capitalist mode of production (MARX, 2011). In Breilh (2006), the universal dimension is presented as general, and in Breilh (2024), singular as individual.

[8] As products of labor and nature exploitation under capitalism (BREILH, 2006, 2013).

[9] Arising from the subjects' relative autonomy (BREILH, 2006, 2013).

perception of neighborhood and (2) build a Critical Process Matrix relating protective and destructive processes to the perception of neighborhood, based on the results of objective 1 and the literature, revealing the socio-structural challenges in promoting healthy aging in Brazil.

Methodological process

A descriptive prevalence study was conducted to achieve the proposed objectives, which allows for documenting the frequencies of some disease cases, risk, or protective factors, describing them per the individuals' characteristics (MERCHÁN-HAMANN and TAUIL 2021). Descriptive epidemiology allows for the formulation of hypotheses for future analytical and inferential studies and is also a vital source of information for public health (FOX *et al.*, 2022; MERCHÁN-HAMANN and TAUIL, 2021). It allows contextualizing the results in historical and sociological settings, "allowing a deeper understanding of how these contexts influence disease and mortality patterns" (FOX *et al.*, 2022: 1175). Fox *et al.* (2022) highlight the importance of grounding discussions on theories that explain the health-disease process. Our study aimed to base discussions on the dialectical logic proposed by Breilh (2006), who proposes that Epidemiology combine mathematical logic ("formal descriptive function: nominal, ordinal and quotient scales, ratios, and absolutes") and attributive logic ("concepts, judgment, and reasoning") to identify the interrelations between empirical and generative planes, constituents of social reality:

> Reality and its processes have an empirical plan, which appears most directly to our perception. However, they also have a generative plan in which the genesis and reproduction of the processes occur. This plane is more than the purely causal links that the events display and includes all of their 'determination': the typical way events occur, which tend to be regular or stable as long as the same historical condition (general and way of life) persists; techniques, on the other hand, work with events on the empirical plane. The method must account for the generative and empirical planes and the relationship between the two, reflecting the theoretical conception we have of these two planes and this relationship. [...] there is not just one type of process on the generative plane, but rather several, which correspond to different movement forms, maintaining connections or relations and exhibiting a hierarchy between them. [...] we need a theory that interprets it and helps us understand the diversities, links, and relations. (BREILH, 2006: 150-1)

The author states the need for diverse techniques, which he classifies as intensive (qualitative) and extensive (quantitative). The former helps to deepen the complexity of the singular dimension, and the latter helps to understand the complexity and regularity of aggregated events. Furthermore, the author points out the importance of triangulating the different techniques per their explanatory power and the problem analyzed. He also points out that we need a theory to understand the links and relationships between the generative and the empirical plan (BREILH, 2006). In this article, the critical processes matrix will be the methodological strategy for establishing such relationships.

The generative plane relates the empirical plane to the structure that historically determines how societies are organized to meet needs, whether physiological (e.g., food, clothing, housing, sports, and leisure) or consciousness, linked to the psyche, such as learning, social and emotional support, freedom of thought and criticism, social participation, and development of physical and intellectual capacities (BREILH, 2006). Whatever the need, when generated by a social context marked by commodification, the conditions of satisfaction will be unequally

distributed and transformed into consumption – the primacy of exchange value over use value (BREILH, 2006).

The empirical plane was accessed through a descriptive study using data from 7,357 older adults living in urban areas who participated in the baseline (2015-2016) of the Brazilian Longitudinal Study of Aging (ELSI-Brazil). The inclusion criteria were living in an urban area and answering the questionnaire on neighborhood perception without the help of a proxy respondent. Thus, 1,477 were excluded because they lived in rural areas, and 578 were for whom the participant did not answer the questionnaire on neighborhood perception.

According to Fox *et al.* (2022), the analysis variables must be critically chosen based on the theory and the object's context to avoid strengthening narratives and power structures that support inequalities. The sociodemographic variables ethnicity/skin color, monthly per capita household income, and gender were chosen as a way of approaching the notion of social class and gender constituted from self-reported information about gender (male and female)[10].

The ethnicity variable was measured based on self-reported ethnicity/skin color information as white, brown, or Black (individuals who declared themselves Indigenous or yellow were excluded from the analysis due to low frequency), monthly per capita household income divided into tertiles and classified as (low [less than or equal to BRL 620.00], medium [greater than BRL 620.00 and less than or equal to BRL 1,150.00] and high [greater than BRL 1,150.00).

The perception of the neighborhood was analyzed based on the answers given to 14 (fourteen) questions[11] grouped into 7 (seven) indicators: physical disorder, noise pollution, social cohesion, feelings of insecurity, violence, mobility problems, and pleasantness with "yes" or "no" answers. The indicators of physical disorder and mobility problems had three questions each and four lack of pleasantness. Physical disorder, mobility problems, and lack of pleasantness were defined by a positive response to one of the questions of the respective indicators. The other indicators had only one question. Cronbach's alpha coefficients were calculated to assess the internal consistency of the indicators of physical disorder, mobility problems, and pleasantness of the district, with respective results of 0.42, 0.70, and 0.63.

The results presented include the gender- or age-adjusted prevalence of neighborhood perception[12], ethnicity/skin color, monthly per capita household income, and gender. The Wald test assessed differences, considering a 5% significance level. The analyses were performed with STATA software (Stata Corporation, College Station, Texas), version 16.1, using the survey (*svy*) command for the weight of individuals and the complexity of the research sample's design.

---

[10] We want to point out that the authors do not understand the possibilities of living in genders restricted to biological sex. Feminist debates produce theoretical diversity (CONNELL and PEARSE, 2015). However, despite this caveat, we should consider that in Western capitalist cultures, sex, and gender are found in a procedural unity that carries with it men's and women's hierarchization policies based on biological gender-centered discourses as a device for producing inequalities. (CONNELL and PEARSE, 2015; FOUCAULT, 2013).

[11] The questions are available on the project website < https://elsi.cpqrr.fiocruz.br/questionario/ >, individual questionnaire, block F: Neighborhood. The codes of the questions that make up each indicator are presented: Physical Disorder (f2, f3, f6), Noise pollution (Noise) (f4), Social cohesion (f12), Insecurity (f5), Violence (f10), Mobility problems (f7, f8, f9), Pleasantness (f11 f13 f14 f15).

[12] Adjusting for age and gender allows for describing neighborhood perceptions based on ethnicity/skin color and income differences, regardless of generational and gender differences.

Results and discussion

A total of 7,357 participants were included in this study, where 56.9% were women and 43.1% were men. Regarding the age group, 44% were aged 50-59, 31.2% 60-69, 18.1% were 70-79, and 6.7% were 80 or older. In self-identification by ethnicity/skin color, 40.1% declared themselves as white, 44.1% as brown, 9.4% as Black, and 6.4% did not know or did not respond. Regarding monthly per capita household income, 34.9% had low income, 34% had medium income, and 31.1% had high income. Regarding the gender- and age-adjusted prevalence of perception of neighborhood characteristics, 70.9% reported perceiving physical disorder, 64.4% mobility problems, 45.1% a lack of social cohesion, 29.9% noise, 38.1% insecurity, 7.1% violence, and 7.2% a lack of pleasantness.

The perception of neighborhood by Brazilian older adults by ethnicity/skin color, monthly per capita household income, and gender
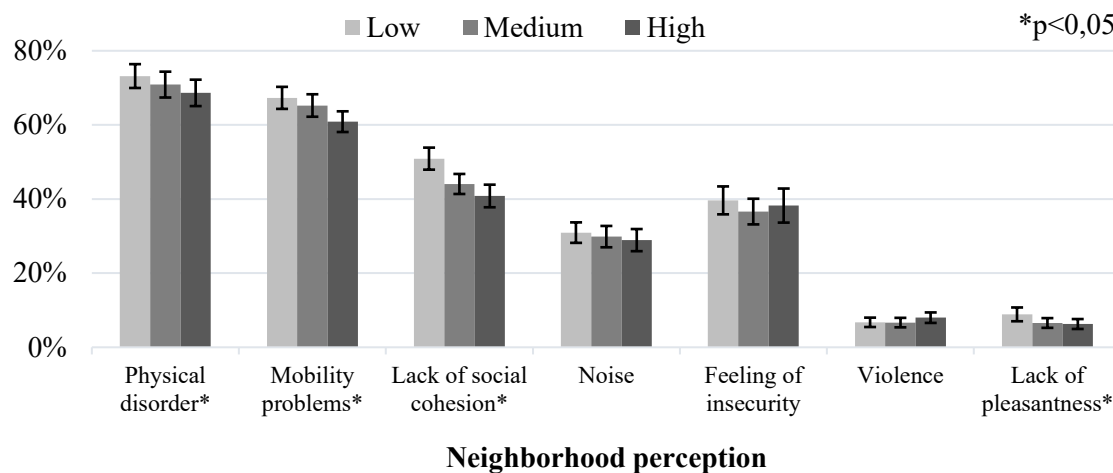
The perception of physical disorder, insecurity, and the lack of pleasantness were more frequent among brown people, and a lack of social cohesion among Black people, compared to white people. The perception of mobility problems, noise, and violence did not differ by ethnicity/skin color (Figure 1).

Figure 1 – Age- and gender-adjusted prevalence of neighborhood perception by ethnicity/skin color. ELSI-Brazil (2015-2016)
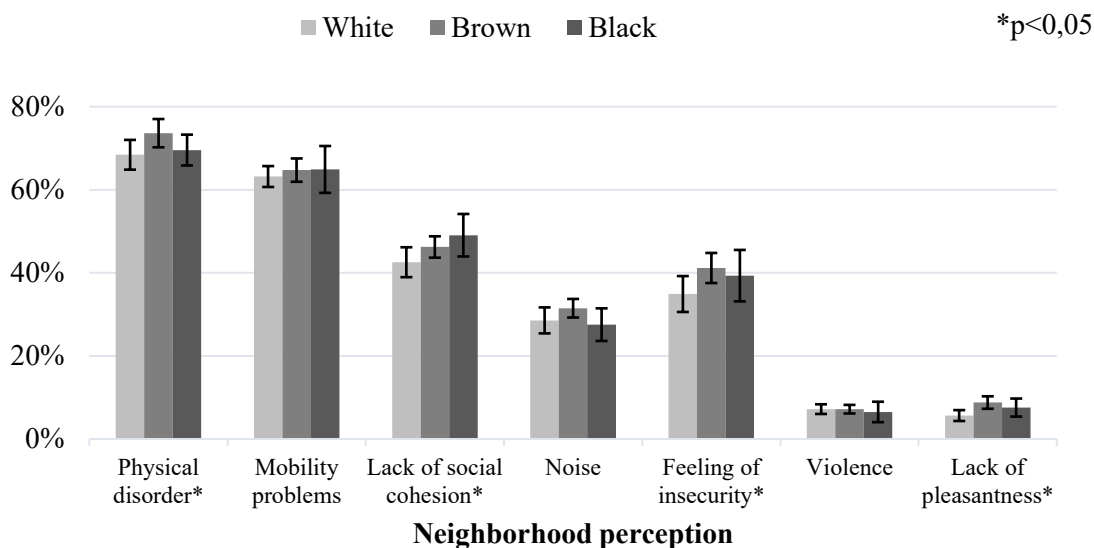
Regarding monthly per capita household income, the perception of physical disorder and lack of pleasantness were more significant among participants with lower incomes than those with higher incomes. The perception of mobility problems and lack of social cohesion were more significant among participants with lower and medium incomes than those with higher incomes. The perception of noise, feelings of insecurity, and violence was similar between income groups (Figure 2).

Figure 2 – Age- and gender-adjusted prevalence of neighborhood perception by monthly per capita household income. ELSI-Brazil (2015-2016)

Between genders, women reported a more significant perception of mobility problems and lack of social cohesion compared to men. The perception of physical disorder, noise, insecurity, violence, and lack of pleasantness are similar between genders (Figure 3).

Figure 3 – Age-adjusted prevalence of neighborhood perception by gender. ELSI-Brazil (2015-2016).
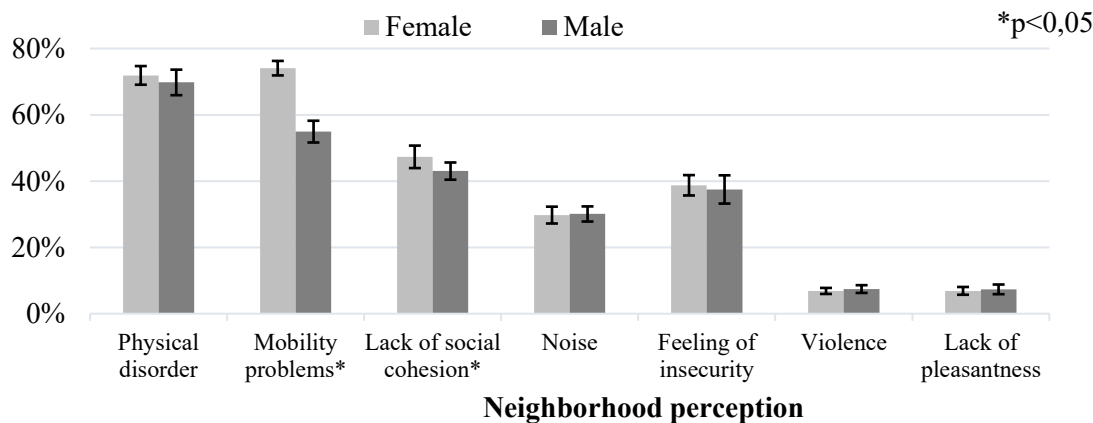
Table 1 presents a matrix of critical processes based on previous results and literature. We identify the protective and destructive processes that may be involved in the older adults' perception of the neighborhood. Breilh (2024) states that the social determination of health-disease processes occurs through dialectical conditioning and concatenated development in the multiple dimensions of social reality:

> general (G), which corresponds to the logic of accumulation, hegemonic politics, and culture that establish it; particular (P) of the reproduction of social classes, crossed by gender and ethical-cultural power relations, whose relations can be of cooperation or exploitation and domination; individual (I) to which the individuals and families of these social classes belong, with personal lifestyles and daily lives. These people exist with their bodies and organisms, phenotypes and genotypes, psyches, and forms of spirituality. Society-nature metabolism relations are produced in these dimensions. (BREILH, 2024: 32)

414

In this direction, Table 1 shows the results presented in the singular (individual) dimension and relations with sociopolitical, economic, and historical events in particular and universal dimensions of social reality.

Table 1 – Matrix of critical processes related to the perception of the neighborhood by older Brazilian adults. ELSI-Brazil.

Processes/ Dimensions	Destructive	Protective
General (structural) (Production System) (State Policies) (Human-Nature Relationship) (Power Relations)	Private accumulation of the conditions for satisfying the needs of existence by exploiting labor and nature. Neoliberalism, individualism, and the neoliberal city. Defunding social policies on housing and income and mitigation of gender, racial, and income inequalities. Brazilian pension reform. **Source:** Breilh (2006; 2010; 2024); Dardot e Laval (2016); Andrade et al (2018); Lourenço et al (2017).	Social function of property in the 1998 Brazilian Federal Constitution. Cities' Statute. Global Strategy and Action Plan on Ageing and Health 2016–2020 and the WHO Decade of Healthy Ageing 2020–2030. Global network for the promotion of age-friendly cities and communities. **Source:** WHO (2016), OPAS (2020), Michel e Sadana (2017), Rudnicka et al (2020), Lopes et al (2021), Brasil (1988, 2001), Monteiro (2023).
Particular (collective) (Work) (Physical and Social Environment) (Lifestyles)	Unemployment or underemployment, unequal gender, ethnicity, and income relations, high housing prices and real estate speculation, urban physical and social handicaps, racism, and racial violence. Ageism. Socio-spatial segregation, residential and racial economic segregation, and gentrification. **Source:** WHO (2016), Guimarães (2016), Breilh (2006; 2010; 2024), Stokes (2019), Lopes et al. (2021), Vasconcelos (2022), Serpa (2022), Caiaffa et al. (2021); Santos et al. (2022), Fontoura et al. (2015).	Retirement or employment, participation in public policy councils, participatory urban planning. Age-friendly cities and communities. Collective sociocultural and generational identity with a high percentage of older adult residents in the neighborhood. **Source:** Guimarães (2016), Stokes (2019) Stokes e Moorman (2016), Rudnicka et al. (2020), Lopes et al. (2021), PAHO (2020).
Singular (individual) (Lifestyle) (Self-Perception) (Health-Disease)	**Perception** of physical disorder, feeling of insecurity, lack of pleasantness among **brown people[1]:** **Perception** of the lack of social cohesion among **Black people[1].** **Perception** of physical disorder, mobility problems, lack of social cohesion, and lack of pleasantness among **low monthly per capita household income[2].** **Perception** of mobility problems and lack of social cohesion among **medium monthly per capita household income[2].** **Perception** of mobility problems and lack of social cohesion among **women[3].**	**Perception** of green and leisure areas, urban gardens, community kitchens, and outdoor gyms. **Perception** of social capital (social cohesion, social participation, social support, and sense of collectivity and mutual solidarity). **Perception of accessibility** to services (health, markets, and availability of nutritious and low-calorie foods). **Sense of** security and acceptance in the community. **Source:** Elliot, 2000; Custrona et al., 2006; Diez and Mair, (2010); Helbich et al. (2019); Stokes (2019); Qin et al. (2023).

Source: Prepared by the authors. Adapted from Breilh (2006). References ([1]Ethnicity/Skin color: White, [2]Class: High, [3]Gender: Men.)

Our findings for social cohesion and insecurity converge with some evidence from Stokes (2019) in a longitudinal study with North Americans aged 20-74 on insecurity and social capital. This author assessed only the social environment through the questions "I feel safe going out alone in my neighborhood during the day", "I feel safe going out alone in my neighborhood at night", "I can ask neighbors for help if I need it" and "People in my neighborhood trust each other", with responses "not at all" or "very much". Stokes (2019) observed a worse perception of the neighborhood among women than men, Black and non-white people than white people, and those who rent a house than those owning a house.

In this study, the worst perceptions of social cohesion (a component of social capital) and insecurity occurred among Blacks and browns compared to whites, women compared to men, and those with medium or low per capita income compared to those with high income. We also assessed perceptions of physical environmental characteristics (physical disorder, lack of pleasantness, noise pollution, and mobility problems). The results show a worse perception of physical disorder and pleasantness among brown people compared to white people and those with low household incomes compared to those with high household incomes. Mobility problems were perceived by women compared to men, and by participants with low or medium income compared to those with high income.

We argued, as highlighted in the critical processes' matrix (Table 1) that studies that show green areas, urban gardens, leisure facilities, and community kitchens lead to a better perception of the neighborhood related to pleasantness. Moreover, these structures contribute to increased interaction between neighborhood residents through physical exercise, encouragement of social support, and participation and social gatherings, providing elements for increasing social capital. (ELLIOT, 2000; CUSTRONA *et al.*, 2006; DIEZ and MAIR, 2010; HELBICH *et al.*, 2019; STOKES, 2019; QIN *et al.*, 2023).

Stokes (2019) argues that access to a high-quality neighborhood in adulthood and old age is not a matter of chance but is determined by events and opportunities throughout life, mediated by power relations of ethnicity, income, and gender. These differences in opportunities can be analyzed as effects of the appropriation and concentration of power (which can be economic by a dominant class, gender via patriarchy, or racial via structural racism) (BREILH, 2006). This same author affirms that the appropriation of power converted human diversity (biological, social, economic, cultural, and power differences) into a device of exploitation and subordination.

When addressing inequalities in Brazilian social reality, Guimarães (2016) shows examples of how the concentration of power produces different conditions of urban space occupation, displaying examples of how the general and particular dimensions determine experiences in the singular. He analyzes the homogenized district populations, influenced by factors such as class, ethnicity, skin color, and gender. This process stems from historical transformations that shaped urban spatial and social organization, reflecting dynamics of segregation and inequality over time, marked by the withdrawal of public services (daycare centers, health care, and schools) that would serve workers and not residents in high-income districts – segregation caused by public policies and actions in the real estate market that devalue entire areas due to the presence of marginalized populations, dis-

placing and overvaluing others, leading to the collapse of old commercial estab-lishments and their replacement by new ones[13] – segregation caused by the real estate market.

Guimarães (2016) also discusses segregation resulting from urban mobility, deriving from the limited and complete lack of public mobility in specific condo-minium districts intended only for workers who travel to them. He attributes this to policies restricting access to specific neighborhoods for residents who cannot finance their urban mobility, especially in contexts with insufficient or unavaila-ble public transportation. He also discusses segregation resulting from urban mo-bility, highlighting how the lack of or limited public transportation in some terri-tories acts as a segregating policy, restricting access and contributing to spatial exclusion since the lack of services forces residents to depend on their means or private means to move around the city.

Vasconcelos (2022) and Serpa (2022) debate how the availability or lack of public policies can affect segregation. Prioritizing the implementation of leisure facilities such as public parks in regions with real estate appreciation can cause the replacement of the original local population, changing the social profile of re-qualified districts (SERPA, 2022). Poor populations tend to be left unattended by the public housing policy and unable to participate in the real estate market due to low and irregular incomes (VASCONCELOS, 2022). Urban segregation reflects unequal opportunities in access to goods, resources, and services, acting as an important cause of illness, inequities, and inequalities, affecting, in particular, the most vulnerable groups such as older adults (CAIAFFA, 2021; DIEZ ROUX and MAIR, 2010; SANTOS *et al.*, 2022).

Older adults living in more segregated urban environments or poor urbani-zation conditions have worse health conditions than those dwelling in environ-ments with better conditions for living in the city (SANTOS *et al.*, 2022). From the segregation processes, Guimarães (2016) also discusses the emergence of a social formation with spatial logic, which can establish protective processes, as discussed by Breilh (2010). Guimarães (2016: 175, our emphasis) affirms:

> In districts and blocks with a socially homogeneous constitution, ethnicity, or culture of origin *can strengthen the sense of community, counteracting the ever-present fac-tors of social differentiation*. Bars, leisure spaces, unions, churches, and clubs that gather immigrant, racialized, or ethnicized groups, such as Blacks, Bahia-born people, and people from the Northeast, *can more easily serve as vehicles for the cultural and symbolic production of collective representation that is an alternative to that of the surrounding society*.

Destructive and protective processes are co-emergent, maintaining a dialec-tical and inseparable relationship. Based on Guimarães (2016), we can see how destructive processes (segregation and gentrification resulting from the real es-tate market and public policies) co-emerge with protective processes (strength-ening of a sense of community and neighborhood, cultural and symbolic produc-tion of alternative collective representation). Social capital (social cohesion, social participation, and social support) tends to affect the health of residents in a neigh-borhood positively. It can even act as a protector in distress and illness, cushion-ing neighborhood stress (FERNÁNDEZ-NIÑO, 2019). Other studies indicate such co-emergence. Elliot (2000), for example, argues that residents of the same neighborhood may experience a high incidence of crime as a strong source of

stress associated with mental illness and community services, such as health clinics or soup kitchens, which can increase social support for coping. Also, Diez and Mair (2010) argue that the same neighborhood may have characteristics that induce stress (lack of leisure spaces) or alleviate it (parks and green areas).

Furthermore, the decade of healthy aging reinforces the importance of older adults' social participation in policy formulation and decision-making in all sectors (PAHO, 2020). In this sense, the increased presence of older adults in municipal public policy councils can bring about changes from the singular to the universal dimension. The intervention of this portion of the population in decisions about the organization and requalification of urban spaces can establish protective processes by increasing social participation and strengthening cities and communities committed to ensuring healthy aging.

In the general dimension is the structure with the most significant determining force over collective ways and lifestyles (Table 1). In this dimension, the tendencies of social reproduction in the singular emerge (destructive generative processes), and through it, changes can occur from disruptive processes in the singular (protective generative processes) through the agency[14] of collective social struggles. The plan for the decade of healthy aging and the plans for building aging-friendly cities and communities can be thought of as the result of collective arrangements that induced changes in the general dimension capable of including healthy aging as an agenda in the global debate (RUDNICKA *et al.*, 2020; MICHEL and SADANA, 2017).

In this sense, these plans can become important devices for inducing productive processes in cities and communities, stimulating multisectoral actions in producing urban environments favorable to preserving and developing functional skills in aging (WHO, 2016). Another important result of agency[15] configured in specific protective processes in the Brazilian setting is the defense of the social function of property according to Article 5, item XXIII of the 1988 Federal Constitution (BRASIL, 1988).

According to Monteiro (2023), the 1988 Federal Constitution desacralizes the absolute property right, relativizing this right in light of the need to fulfill the social function of use under collective interests. Thus, requalification policies can convert abandoned properties into housing or equipment for collective and social interests, especially to care for the most social-spatial and economically disadvantaged populations, such as older adults and people with reduced mobility (MONTEIRO, 2023). Therefore, it is an important device for confronting the destructive processes of segregation and gentrification of urban spaces.

Segregation and gentrification as destructive processes are grounded on the general production mode sphere that envisages the accumulation of wealth in a private manner to the extent that it produces the accumulation of socially shared poverty through the same process[16]. Such processes are organized around the production of a neoliberal city project for the world based on the "wholesale privatization of services, the construction of a real estate bubble for profit extraction, the uncontrolled absorption of the poor expelled from the rural region, the growth

---

[14] Krieger (2011) uses the concept of agency to analyze how individuals and institutions can act, from the micro to the macro level, based on a collective organization to change contexts even in the face of adversity.

[15] The 1988 Federal Constitution results from arrangements reverberating from the democratic reopening, social struggles to end the dictatorship, and advocacy for implementing social welfare policies in Brazil.

[16] Analyzing capitalism, Marx identified trends that he named as laws: 1. General law of capitalist accumulation, according to which the more significant the social wealth produced by labor and accumulated by capital, "the greater will be official pauperism. This is the general law" (MARX, 2017a: 719). 2. Law of the tendency of the rate of profit to fall (MARX, 2017b), which addresses the nonexistence of capitalism without crises.

of marginal districts and the expansion of dangerous neighborhoods" (BREILH, 2024: 97).

We should highlight that neoliberal projects have been gaining strength since the rise of neoliberalism in the 1970s (DARDOT and LAVAL, 2016). Neoliberal policies strengthen the discourse of handing over the management of resources to the market to satisfy human needs and, in this process, the weakening of urban policies through privatization, denationalization, and defunding of social welfare policies. The logic of universal law is converted into consumption, the citizen into a consumer, the worker into an entrepreneur of himself in a terrain of deregulated labor laws and social security, with the strengthening of individualistic values destructive to relations of mutual solidarity, cooperation, support, and social cohesion (DARDOT and LAVAL, 2016).

In this setting, the substandard living conditions of older adults in urban areas are deteriorating. Successive pension reforms deepen urban inequities, especially among those whose aging is caused by more than one chronic disease accompanied by an income decline due to a history of informal work or by lower wages and loss of benefits due to the implementation of retirement ceilings and incentives for private pensions (ANDRADE *et al.*, 2018; LOURENÇO *et al.*, 2017), thus contributing to older adults' impoverishment cycle.

What is the relationship between pension reform and neighborhood perception? The conditions of access to pensions (formal employment, informal employment, underemployment, unemployment, time, and value of contributions) and retirement (full, partial, continuous benefit provision) will determine housing conditions in districts with more or less physical and social disadvantages. Furthermore, the conditions of access to social security, which in turn determine the conditions of retirement, are mediated by power relations of race/ethnicity and gender. Fontoura *et al.* (2015) reveal that women of economically active age (16-59 years) faced more significant hardships in accessing and remaining in the job market over two decades (1995-2015). The authors showed that in 2015, the unemployment rate among white women was 11.6% compared to 7.8% for men. In the case of Black women, this rate increased to 13.3% compared to 8.5% for Black men (FONTOURA *et al.*, 2015).

Fontoura *et al.* (2015) show that a salary hierarchy was maintained by ethnicity and gender throughout the historical series, with white men and women followed by Black men and women, with no significant changes in the distances between the four groups in the two decades (FONTOURA *et al.*, 2015). There is no way to separate occupational and social security conditions from older adults' perception of the neighborhood, as they are interrelated in the three dimensions exposed in the critical processes' matrix. Thus, the perception of the neighborhood is a result of its conditions, which in turn are determined by the salary, ethnic/racial, and gender position in economic and power relations (Table 1).

Final considerations

Based on the neighborhood perception of the participants in this research and the elaboration of a matrix of critical processes with the help of literature, we highlighted several challenges for promoting healthy aging and understanding the perception of older adults about their neighborhood. The exploitation of labor and nature, associated with the harmful neoliberal policies that transform cities and public and social policies into commodities, are expressed in physical and social disadvantages in the neighborhoods. Identifying structural challenges for

the decade of healthy aging to become effective in countries like Brazil reveals that, without changes in economic and city management policies, such a plan will face difficulties since, as the literature shows, it is incompatible with the neoliberal proposals in force in the world today.

Our results showed worse perceptions of attributes of the physical and social environment among women, brown and Black people, and those with lower monthly per capita household income in a sample of older Brazilian adults. However, these results should not be seen in isolation since ethnicity, class, and gender intersect, aggravating social disadvantages (COLLINS and BILGE, 2021). A Black and lower-class woman is likelier to live in disadvantaged neighborhoods (STOKES, 2019) because of power relations involving ethnicity, class, and gender.

Throughout the text, we discussed, from a dialectical perspective, that protective and destructive processes co-emerge in social reality (BREILH, 2006; 2024) and that highlighting them is a necessary task to outline prevention and healthy aging promotion actions. Our results converged with the longitudinal findings of Stokes (2019) regarding insecurity and aspects of social capital, pointing to disadvantages among socially excluded groups: women, Black/brown people, and people experiencing poverty (BREILH, 2006; 2024; COLLINS and BILGE, 2021).

Furthermore, Guimarães (2016) discusses how segregation processes can generate homogenized neighborhoods that can favor the flourishing of community feeling due to cultural and origin issues, as in the case of the northeasterners discussed by the author. In this sense, investigating self-organization and socialization among residents of segregated neighborhoods can provide evidence to strengthen strategies to confront segregation by improving cohesion, support, and social participation in the neighborhood.

It is crucial to reinforce the importance of new studies on aging in Brazil, considering theoretical models that articulate the socio-structural dimensions of the processes that determine neighborhood conditions and, therefore, the health and illness conditions of its older residents.

Acknowledgments

References

ANDRADE, E. I. G. *et al.* Fatores associados ao recebimento de aposentadorias entre adultos mais velhos: ELSI-Brasil. *Revista de Saúde Pública*, 52(2):15, 2019.

BRASIL. *Constituição da República Federativa do Brasil de 1988*. Brasília: Presidencia da República, 2025.

BRASIL. *Estatuto da Cidade.* Lei 10.257, de 10 de julho de 2001. Regulamenta os arts. 182 e 183 da Constituição Federal, estabelece diretrizes gerais da política urbana e dá outras providências.

BREILH, J. La determinación social de la salud como herramienta de transformación hacia una nueva salud pública (salud colectiva). *Revista Facultad Nacional de Salud Pública,* 31 (1): S13-S27, 2013.

BREILH, J. La epidemiología crítica: una nueva forma de mirar la salud en el espacio urbano. *Salud Colectiva*, 6 (1): 83-101, 2010.

BREILH, J. *Epidemiologia crítica e a saúde dos povos*: ciência ética e corajosa em uma civilização doentia. São Paulo: HUCITEC, 2024.

BREILH, J. *Epidemiologia crítica*: ciência emancipadora e interculturalidade. Rio de Janeiro: Fiocruz, 2006.

CAIAFFA, W. T. *et al.* Saúde urbana: "a cidade é uma estranha senhora, que hoje sorri e amanhã te devora". *Ciência & Saúde Coletiva*, 13 (6): 1785-96, 2008.

CAIAFFA, W. T. *et al. Saúde Urbana, cidades e intersecção de sistemas*: *panorama, agendas, gaps e oportunidades rumo a equidade, sustentabilidade, resiliência e promoção em saúde*. Rio de Janeiro: Fundação Oswaldo Cruz, 2021.

CÉLIO, F. A., et al.. Características individuais associadas à autopercepção da extensão territorial da vizinhança. *Cadernos de Saúde Pública*, 30 (9): 1935–46, 2014.

COLLINS, P. H.; B., S. *Interseccionalidade*. São Paulo: Boitempo, 2021.

CONNELL, R; PEARSE, R. *Gênero: uma perspectiva global*. São Paulo: Nversos, 2015.

CUTRONA, C.E.; WALLACE, G.; WESNER, K. A. Neighborhood characteristics and depression: an examination of stress processes. *Current Directions in Psychological Science,* 15 (4): 188–192, 2006.

DARDOT, P.; LAVAL, C. *A nova razão do mundo: ensaio sobre a sociedade neoliberal*. São Paulo: Boitempo, 2016.

DIEZ ROUX, A. V.; MAIR, C. Neighborhoods and health. *Annals of The New York Academy of Sciences*, 1186 (2010): 125-145, 2010.

ELLIOTT, M. The stress process in neighborhood context. *Health Place*, 6 (4): 287-99, 2000.

FERNÁNDEZ-NIÑO J. A. *et al*. Neighborhood features and depression in Mexican older adults: A longitudinal analysis based on the study on global ageing and adult health (SAGE), waves 1 and 2 (2009-2014). *PLoS One*, 14 (7): e0219540, 2019.

FONTOURA, N. *et al*. *Retrato das Desigualdades de Gênero e Raça – 1995 a 2015*. Brasília: Instituto de Pesquisa Econômica Aplicada, 2015.

FOUCAULT, M. *História da sexualidade I: a vontade de saber*. São Paulo: Graal, 2013.

FOX, M. P. *et al*. On the need to revitalize descriptive epidemiology. *American Journal of Epidemiology*, 191 (7): 1174-79, 2022.

GUIMARÃES, A. S. A. Formações nacionais de classe e raça. *Tempo Social,* 28 (2): 161-82, 2016.

HELBICH, M. *et al*. Relative importance of perceived physical and social neighborhood characteristics for depression: a machine learning approach. *Social Psychiatry and Psychiatric Epidemiology*, 55 (5): 599-610, 2020.

IMBRONITO, M.I. Considerações sobre o bairro e a vizinhança a partir do filme *Smoke. urbe. Revista Brasileira de Gestão Urbana*, 9 (1): 35–51, 2017.

JULIEN, D. *et al*. Neighborhood characteristics and depressive mood among older adults: an integrative review. *International Psychogeriatric*, 24 (8): 1207–25, 2012.

KAWACHI, I.; BERKMAN, L. Social capital, social cohesion, and health. In: BERKMAN, L. F.; KAWACHI, I; GLYMOUR, M. (orgs.). *Social epidemiology*. 2ª ed. New York: Oxford University Press, 2014.

KRIEGER, N. *Epidemiology and the peoples's health*. Nova Iorque: Oxford University Press, 2011.

LEE, Sung-Ha. *et al*. Association of group-level segregation with cardiovascular health older adults: na analysis of data from the Korean Social Life, Health and Aging Project. *Epidemiology and Health,* 45: e2023041, 2023.

LIMA-COSTA, M. F. *et al*. Cohort Profile: The Brazilian Longitudinal Study of Ageing (ELSI-Brazil*). International Journal of Epidemiology*, 52(1): e57-e65, 2023.

LOPES, P. O. *et al*. Age-friendly city: future perspectives for the Brazilian cities. *Dementia & Neuropsychologia*, 15 (3): 295-98, 2021.

LOURENÇO, E. A. S. et al. Crise do capital e o desmonte da Previdência Social no Brasil. *Serviço Social & Sociedade,* 130: 467-86, 2017.

MARX, K. *Grundrisse*. São Paulo: Boitempo; Rio de Janeiro: Ed. UFRJ, 2011.

MARX, K. *O Capital: Crítica da Economia Política. Livro I: O processo de produção do capital*. 2. ed. São Paulo: Boitempo, 2017a.

MARX, K. *O Capital: Crítica da Economia Política. Livro III: O processo global da produção capitalista*. 1. ed. São Paulo: Boitempo, 2017b.

MERCHÁN-HAMANN, E.; TAUIL, P. L. Proposta de classificação dos diferentes tipos de estudos epidemiológicos descritivos. *Epidemiologia e Serviços de Saúde*, 30 (1): e2018126, 2021.

MICHEL, J. P.; SADANA, R. "Healthy Aging" concepts and measures. *JAMDA*, 18 (6): 460-4, 2017.

MONTEIRO, Luiza Cristina Antoniossi. Estratégias para políticas urbanas que favoreçam todas as (c)idades. In: IVO, Any Brito Leal; FARIAS, Patrícia Marins (orgs.). *Cidade para todas as idades*: pensar o urbano para o bom envelhecimento. Salvador: EDUFBA, 2023. pp. 209-25.

ORGANIZAÇÃO PAN-AMERICANA DA SAÚDE (OPAS). *Década do Envelhecimento Saudável*: Relatório de Linha de Base. Resumo. Washington: OPAS; 2022.

QIN, W. et al. Trajectories of depressive symptoms among older African Americans: the influence of neighborhood characteristics and gender. *Aging & Mental Health*, 27 (11): 2220-8, 2023.

RUDNICKA, E. *et al.* The World Health Organization (WHO) approach to healthy ageing. *Maturitas*, 139: 6-11, 2020.

SANTOS, C.; PACIÊNCIA, I.; RIBEIRO, A. I. Neighbourhood socioeconomic processes and dynamics and healthy ageing: a scoping review. *International Journal of Environmental Research and Public Health*, 19 (11): 6745, 2022.

SERPA, A. "Segregação, território e espaço público na cidade contemporânea". In: *A cidade contemporânea*: segregação espacial. VASCONCELOS, Pedro Almeida *et al.* (orgs.). São Paulo: Contexto, 2022. pp. 169-87.

STOKES, J. E. Trajectories of perceived neighborhood quality across the life course: Sociodemographic determinants and implications for wellbeing. *Social Science Research*, 79: 181–193, 2019.

STOKES, J. E.; MOORMAN, S. M. Who are the people in your neighborhood? Neighborhood age composition and age discrimination. *Social Psychology Quarterly*, 79 (1): 68-80, 2016.

UNITED NATIONS. Department of Economic and Social Affairs, Population Division (2020). *World Population Ageing 2020 Highlights*: Living arrangements of older persons (ST/ESA/SER.A/451), 2020.

UNITED NATIONS. Population Division of the Department of Economic and Social Affairs. *World urbanization prospects: the 2018 revision*. New York: UN; 2019.

VASCONCELOS, P. A. "Contribuição para o debate sobre processos e formas socioespaciais nas cidades". In: *A cidade contemporânea*: segregação espacial. VASCONCELOS, P. A. *et al.* (orgs.). São Paulo: Contexto, 2022. pp. 17-37

WANG, R. et al. The relationship between visual enclosure for neighbourhood street walkability and elders' mental health in China: using street view images. *J Transport Health*, 13: 90-102, 2019.

WANG, Y. *et al.* Neighborhood Environment and Depressive Symptoms Among Chinese Older Immigrants in the United States: The Mediation Effects of Coping Resources. *Gerontologist,* 62(9): 1278-88, 2022.

WEDEN, M. M. *et al*. Subjective and objective neighborhood characteristics and adult health. *Social Science & Medicine*, 66 (6): 1256-70, 2008.

WORLD HEALTH ORGANIZATION (WHO). Multisectoral action for a life course approach to healthy ageing: draft global strategy and plan of action on ageing and health. Report by the Secretariat. *Sixty-Ninth World Health Assembly*. A69/17. Provisional agenda item 13.4, 2016.