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ORIGINAL RESEARCH

Perceived characteristics of the neighborhood and depressive symptoms in community-dwelling older adults: a cross-section study

Características percebidas do ambiente de moradia e sintomas depressivos em idosos comunitários: um estudo transversal

Características percibidas del entorno de vivienda y síntomas depresivos en ancianos residentes en comunidad: un estudio transversal

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ABSTRACT | The high prevalence of depressive symptoms in older adults highlights the importance of investigating risk factors that may contribute to this condition, especially those that are subject to effective interventions, such as the neighborhood environment. However, the association between perceived characteristics of the environment and presence of depressive symptoms in Brazilian older adults, as well as in those who attend Primary Health Care (PHC) units is not yet fully established. This study aimed to verify the association between the perception of the neighborhood and presence of depressive symptoms in community-dwelling older adults. This is a cross-sectional, household-based study with a probabilistic sample. A total of 293 community-dwelling older adults (57.3% women; 54.7% aged 60–69 years) and registered in the municipal Primary Health Care System of Balneário Arroio do Silva/SC were included. Depressive symptoms were assessed using the Geriatric Depression Scale (GDS) and the perception of the environment was obtained using the adapted instrument Neighborhood Environment Walkability Scale (NEWS). Associations were tested by multivariate logistic regression. Significant negative associations were observed between the presence of food establishments (OR: 0.52; 95%CI: 0.28–0.98), health clinics and community centers (OR: 0.52; 95%CI: 0.28–0.96), outdoor gyms (OR: 0.38; 95%CI: 0.20–0.72), fitness centers and/or clubs (OR: 0.42; 95%CI: 0.19–0.89), well-maintained sidewalks (OR: 0.37; 95%CI: 0.19–0.71), pedestrian signals (OR: 0.39; 95%CI: 0.18–0.84), and neighborhood safety for walking during the day (OR: 0.35; 95%CI: 0.16–0.76) and night (OR: 0.40; 95%CI: 0.19–0.83) and the presence of depressive symptoms. It was concluded that there is inverse associations between better perceived characteristics of the environment and the presence of depressive symptoms in community-dwelling older adults, demonstrating the importance of promoting strategies to improve the neighborhood infrastructure and prevent depressive symptoms in this population.

Keywords | Built Environment; Neighborhood Characteristics; Depression; Aged.

RESUMO | A elevada prevalência de sintomas depressivos em idosos denota a importância de se investigar os

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fatores de risco que podem contribuir para esse agravo e, principalmente, que são passíveis de intervenções eficazes, como o ambiente de moradia. No entanto, ainda não está totalmente estabelecida a associação entre as características dos ambientes de moradia e a presença de sintomas depressivos em idosos brasileiros, em especial naqueles que frequentam unidades de Atenção Primária à Saúde (APS). Este estudo teve como objetivo verificar a associação entre a percepção do ambiente de moradia e a presença de sintomas depressivos em idosos comunitários. Tratou-se de um estudo transversal, de base domiciliar e amostra probabilística. Foram incluídos 293 idosos (57,3% mulheres; 54,7% com idades entre 60 e 69 anos) com idade ≥60 anos, comunitários e cadastrados na Atenção Básica municipal de Balneário Arroio do Silva (SC). Os sintomas depressivos foram avaliados por meio da escala de depressão geriátrica e a percepção do ambiente foi obtida por meio do instrumento adaptado *neighborhood environment walkability scale*. As associações foram testadas pela regressão logística multivariada. Observaram-se associações negativas significativas entre a presença de sintomas depressivos e a presença de estabelecimentos alimentícios (OR: 0,52; IC95%: 0,28-0,98), postos de saúde e centros comunitários (OR: 0,52; IC95%: 0,28-0,96), academias ao ar livre (OR: 0,38; IC95%: 0,20-0,72), academias de ginástica e/ou clubes (OR: 0,42; IC95%: 0,19-0,89), melhor qualidade das calçadas (OR: 0,37; IC95%: 0,19-0,71), presença de sinalização para pedestres (OR: 0,39; IC95%: 0,18-0,84) e segurança para caminhada durante o dia (OR: 0,35; IC95%: 0,16-0,76) e à noite (OR: 0,40; IC95%: 0,19-0,83). Concluiu-se que houve associações inversas entre melhores características percebidas do ambiente e a presença de sintomas depressivos em idosos que residem na comunidade, demonstrando a importância de promover estratégias para melhorar a infraestrutura do bairro e a presença de sintomas depressivos nessa população.

Descritores | Ambiente Construído; Características da Vizinhança; Depressão; Idoso.

RESUMEN | La alta prevalencia de síntomas depresivos en los ancianos apunta la necesidad de investigar los factores de riesgo que pueden contribuir a esta condición y, sobre todo, que son objeto de intervenciones eficaces, como el entorno de vivienda. Sin embargo, todavía no está completamente establecida la asociación entre las características de los entornos de vivienda y la presencia de síntomas depresivos en ancianos brasileños, especialmente en aquellos que frecuentan unidades de Atención Primaria de Salud (APS). Este estudio tuvo como objetivo verificar la asociación entre la percepción del entorno de vivienda y la presencia de síntomas depresivos en ancianos residentes en la comunidad. Este es un estudio transversal, de carácter domiciliar y muestra probabilística. Se incluyeron a 293 ancianos (57,3% mujeres; 54,7% de edades entre 60 y 69 años) de edad ≥60 años, de la comunidad y registrados en la Atención Primaria municipal de Balneário Arroio do Silva (en Santa Catarina, Brasil). Los síntomas depresivos se evaluaron mediante la escala de depresión geriátrica, y la percepción del entorno se obtuvo mediante el instrumento adaptado *neighborhood environment walkability scale*. Para probar las asociaciones se utilizó la regresión logística multivariada. Se observaron asociaciones negativas significativas entre la presencia de síntomas depresivos y la presencia de establecimientos de comida (OR: 0,52; IC95%: 0,28-0,98), centros de salud y centros comunitarios (OR: 0,52; IC95%: 0,28-0,96), gimnasios al aire libre (OR: 0,38; IC95%: 0,20-0,72), gimnasios y/o clubes (OR: 0,42; IC95%: 0,19-0,89), mejor calidad de aceras (OR: 0,37; IC95%: 0,19-0,71), presencia de señalización peatonal (OR: 0,39; IC95%: 0,18-0,84) y caminar seguro de día (OR: 0,35; IC 95%: 0,16-0,76) y de noche (OR: 0,40; IC95%: 0,19-0,83). Se concluyó que hubo asociaciones inversas entre mejor percepción de las características del entorno y la presencia de síntomas depresivos en ancianos residentes en la comunidad, lo que muestra la importancia de promover estrategias para mejorar la infraestructura del barrio y la presencia de síntomas depresivos en esta población.

Palabras clave | Entorno Construido; Características del Vecindario; Depresión; Anciano.

INTRODUCTION

Depression is a common chronic condition among older adults[1] and, according to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), it is characterized by a very severe or persistent degree of sadness that leads to decreased interest or pleasure of the person in performing their daily activities[2,3]. DSM-5 stipulates nine criteria for depression, in which three items must last for at least two weeks, and one of them must be depressed mood or loss of interest or pleasure[2]. It is estimated that the prevalence of depression in the older adults on a global scale is 28.4%[4] and, in Brazil, it is estimated that it is 40.3% in the older adults aged 60 to 64 years and 67.0% in those aged 75 years or older who reside in the Southern Brazil[5]. Among the main factors associated with depression

the literature highlight: cognitive decline, functional disability, impaired quality of life, worse socioeconomic conditions[1,6] and, mainly, inadequate neighborhood environment characteristics[6-12].

In a systematic review conducted with 73 articles, it was observed that a good socioeconomic status, collective efficacy, and safety regarding criminal activities in the neighborhood were negatively associated with depressive symptoms in older adults, whereas physical attributes of the environment showed few associations[7]. The neighborhood environment influences biopsychosocial well-being[8], and can be observed as a barrier or facilitator to health[13]. It is assumed that the neighborhood environment plays an important role in encouraging the older adults to engage in positive health behaviors[9], such as the practice of physical activity[10,14], encouraging them to be more active[14,15]. Furthermore, the environment with better infrastructure allows for greater social cohesion among individuals, which reduces the chances of isolation and damage to mental health[11,16,17]. This association is even more important in the older population, since they tend to spend more time of the daily routine in the neighborhood and to be more exposed to the neighborhood influence, possibly due to retirement and greater time available for community activities[12].

In recent years, interest in studies that address the association between neighborhood environment conditions and depressive symptoms in community-dwelling older adults has been growing[7], most have been conducted in high-income countries, with particular physical and sociocultural characteristics that differ, for example, from Brazilian regions and, especially, from small municipalities. In addition, the high prevalence of depressive symptoms in older adults in the South region demonstrates the importance of investigating risk factors that may contribute to this condition, especially those that can be effectively intervened upon. Moreover, since depression is a chronic condition that generates a high burden of care for affected individuals, in addition to a large expense public funds, it represents a great challenge for public administrators in the sector[18].

Thus, this study aimed to verify the association between the perceived neighborhood environment characteristics and the presence of depressive symptoms in the older adults living in a small municipality in the Southern Brazil.

METHODOLOGY

Design and study location

This is a cross-sectional study, conducted with the older population of the municipality of Balneário Arroio do Silva (SC), from September 2018 to September 2019. The older adults registered in the health information system of the local Primary Health Care System—Strategic Health Management System (SIGES) were evaluated. All participants provided written informed consent and the study is in accordance with the ethical principles contained in the Declaration of Helsinki.

Population and sampling

The sample size calculation considered the total number of older adults registered in the municipality Basic Health Units (BHUs) (n=2,833), according to the following parameters: 50% unknown prevalence of outcomes, 95% confidence level, 6% sampling error, and 20% expected losses, totaling 540 eligible older adults. Older adults selection was performed by a random draw, considering the representative proportion of older adults registered in each BHU. The inclusion criteria were men and women aged ≥60 years, who resided in the municipality of Balneário Arroio do Silva—randomly selected—, agreed to participate in the study, and were able to promptly answer the questions. The bedridden, hospitalized, and institutionalized older adults or those who had changed their home address were excluded.

Exposure variable

The perceived characteristics of the neighborhood environment were exposure variables; these characteristic were evaluated by the adapted international Neighborhood Environment Walkability Scale (NEWS)[19], translated[20] into and validated for Brazilian Portuguese[21]. This instrument assesses the individuals' perception regarding different environment characteristics near their home (considering the walked distance from their residence in up to 15 minutes): (1) infrastructure; (2) streets and sidewalks; (3) road traffic safety; and (4) general safety in the neighborhood. Each variable investigated was evaluated in a dichotomized way: presence or absence in the neighborhood.

Outcome variable

The presence of depressive symptoms was the outcome variable. For evaluation, the Geriatric Depression Scale (GDS) was used. The GDS is considered one of the most popular instruments for detecting and screening depression in older adults, and offers valid and reliable measures[22]. The GDS is composed of 15 questions with yes or no answers. The cumulative scores of 0–5 points indicate the absence of depressive symptoms, whereas 6–15 points indicate the presence of depressive symptoms[23].

Adjustment variables

The following control variables were considered: gender (woman; man)[24]; age range (60–69 years; 70–79 years; ≥80 years)[25]; marital status (married/living with partner; divorced/single; widowhood)[26]; skin-color (White; Mixed-race; other); education level (0–4 years; 5–8 years; ≥9 years)[26,27]; monthly income in minimum wages (0<1.5; ≥1.5)[27], considering the value for the year in which data collection was conducted (R$954.00); years living in in the neighborhood (0–4 years; 5–9 years; ≥10 years)[28]; self-perceived health (very good/good; fair; poor/very poor)[29]; and presence of multimorbidity, characterized by the coexistence of two or more chronic diseases (spinal disease, arthritis/rheumatism, diabetes, hypertension, and osteoporosis)[28].

Statistical analysis

The analyses were performed using the STATA statistical program, version 14.0 (Stata Corp, College Station, Texas, USA). Descriptive analyses were performed and the proportion values (%) and respective 95% confidence intervals (95%CI) were presented. To test the associations between the perceived variables of the neighborhood environment and the presence of depressive symptoms, multivariate logistic regression analyses were performed, estimating the crude and adjusted odds ratio (OR), with their respective confidence intervals (95%CI).

RESULTS

Among the 540 older adults eligible for the sample, 293 individuals were analyzed, and the others were excluded due to: 24 deaths, 68 losses—considering the eligibility criteria—, 16 bedridden or dependent older adults, 29 refusals, 95 unlocated in their homes due to incomplete registrations or address changes, and 15 who did not answer the GDS questions—because they did not know or did not want to inform—(Figure 1).

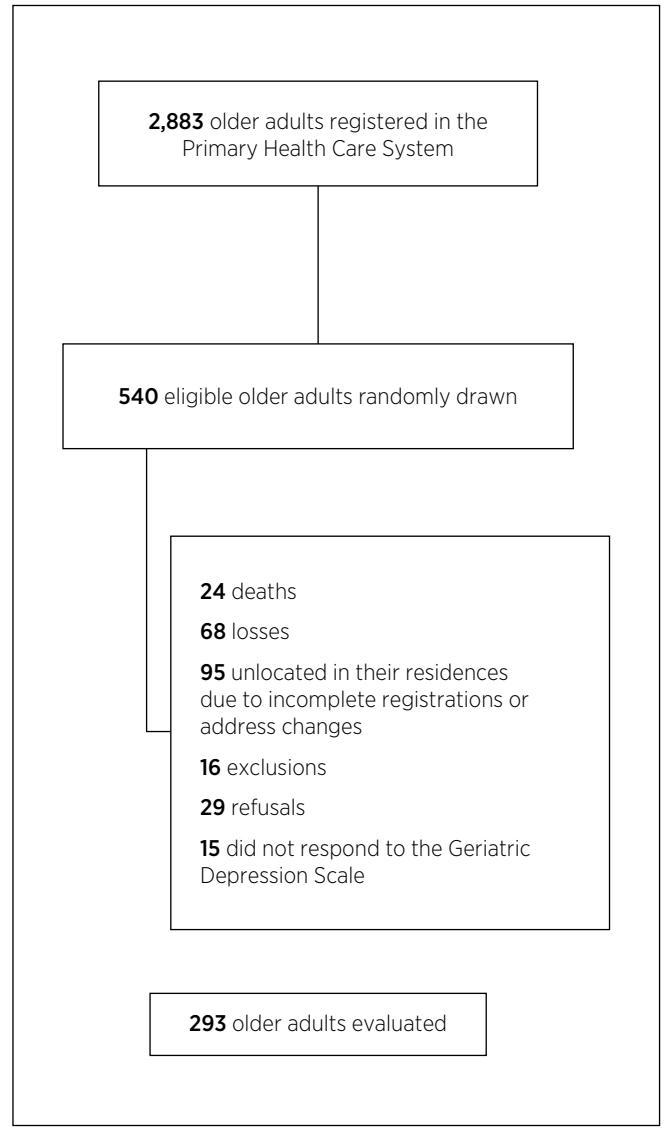

Figure 1. Study flowchart

The sample was composed mostly of women (57.3%), aged from 60 to 69 years (54.7%), married, and/or living with a partner (59.3%), who self-declared themselves as White (71.9%), with low education level (48.4%), and who received less than 1.5 minimum wages per month (57.2%). In addition, most perceived their health as fair (45.4%), had multimorbidity (61.4%), and lived in the same neighborhood for more than 10 years (59.2%). Table 1 presents further details of the sample.

Table 1. Description of the prevalence of depressive symptoms, according to sociodemographic and health characteristics, in community-dwelling older adults living in Balneário Arroio do Silva, Santa Catarina, Brazil, 2018-2019

Characteristic	N	% (95%CI)	Depressive symptoms % (95%CI)
Gender [n=293]			
Women	168	57.3 (52.5–62.9)	34.5 (27.6–42.0)
Men	125	42.6 (37.0–48.4)	24.0 (17.2–32.3)
Age group (years) [n=292]			
60–69	160	54.7 (49.0–60.4)	31.8 (25.0–39.5)
70–79	104	35.6 (30.3–41.3)	27.8 (20.0–37.4)
≥80	28	9.5 (6.6–13.5)	28.5 (14.3–48.9)
Marital status [n=293]			
Married/living with partner	174	59.3 (53.6–64.8)	26.4 (20.3–33.5)
Divorced/single	52	17.7 (13.7–22.5)	30.7 (19.4–44.9)
Widow/widower	67	22.8 (18.3–28.0)	38.8 (27.6–51.2)
Skin color [n=292]			
White	210	71.9 (66.4–76.8)	27.6 (21.9–34.0)
Mixed-race	63	21.5 (17.2–26.6)	38.1 (26.7–50.9)
Others	19	6.5 (4.1–9.9)	31.5 (13.7–57.2)
Education level (years) [n=293]			
0–4	142	48.4 (42.7–54.2)	30.2 (23.2–38.4)
5–9	101	34.4 (29.2–40.1)	27.7 (19.7–37.4)
≥10	50	17.0 (13.1–21.8)	34.0 (21.9–48.5)
Monthly income (minimum wage) [n=290]			
0<1.5	166	57.2 (51.4–62.8)	34.3 (27.4–41.9)
≥1.5	124	42.7 (37.1–48.5)	25.0 (18.0–33.4)
Years living in the neighborhood [n=292]			
0–4	58	19.8 (15.6–24.8)	41.3 (29.1–54.7)
5–9	61	20.8 (16.5–25.9)	29.5 (19.2–42.4)
≥10	173	59.2 (53.4–64.7)	26.0 (19.9–33.1)
Self-perceived health [n=286]			
Very good/good	110	38.4 (32.9–44.2)	11.8 (6.9–19.4)
Fair	130	45.4 (39.7–51.2)	33.0 (25.4–41.7)
Poor/very poor	46	16.0 (12.2–20.8)	65.2 (49.9–77.8)
Multimorbidity [n=293]			
No	113	38.5 (33.1–44.3)	19.4 (13.0–27.9)
Yes	180	61.4 (55.6–66.8)	36.6 (29.8–44.0)
Total N			**293**

95%CI: 95% confidence interval; N: sample number.

The prevalence of depressive symptoms was 30.0% (95%CI: 25.0–35.5), being higher among women [34.5% (95%CI: 27.6–42.0)] and in the group aged 60 to 69 years [31.8% (95%CI: 25.0–39.5)]. The older adults who resided near food establishments; health clinics and community centers; outdoor gyms, fitness centers and/or clubs had reduced odds of presenting depressive symptoms by, respectively, 48.0% (OR: 0.52; 95%CI: 0.28–0.98), 48.0% (OR: 0.52; 95%CI: 0.28–0.96), 62.0% (OR: 0.38; 95%CI: 0.20–0.72), and 58.0% (OR: 0.42; 95%CI: 0.19–0.89), compared to those who did not live near these establishments (Table 2).

Regarding the streets and sidewalks conditions in the neighborhood, the older adults who reported living in places with well-maintained sidewalks were less likely [63.0% (OR: 0.37; 95%CI: 0.19–0.71)] to present depressive symptoms compared to those who reported poor sidewalks quality. Similarly, those who reported living in places with crosswalks, pedestrian sigs, or walkways had reductions by 61.0% (OR: 0.39; 95%CI: 0.18–0.84) for the probability of presenting depressive symptoms compared to those who did not reside in neighborhood with such characteristics. In addition, the older adults who felt

safe to walk during the day and at night in places close to their residence were less likely [65.0% (OR: 0.35; 95%CI: 0.16–0.76) and 60.0% (OR: 0.40; 95%CI: 0.19–0.83)] to present depressive symptoms compared to older adults who did not feel safe in their place of residence (Table 2).

Table 2. Multivariate logistic regression analysis between perception of the neighborhood and prevalence of depressive symptoms in community-dwelling older adults from Balneário Arroio do Silva, Santa Catarina, Brazil, 2018-2019

Characteristic	Depressive symptoms	
	Crude OR (95%CI)	Adjusted[a] OR (95%CI)
Infrastructure		
Supermarket, convenience store/grocery store/warehouse, street market (versus no)	0.80 (0.41–1.55)	1.37 (0.62–3.00)
Commercial establishments (versus no)	**0.43 (0.25–0.73)**	0.54 (0.29–1.00)
Food establishments (versus no)	**0.51 (0.30–0.87)**	**0.52 (0.28–0.98)**
Health clinics and community centers (versus no)	**0.45 (0.27–0.75)**	**0.52 (0.28–0.96)**
Bus stops (versus no)	0.68 (0.34–1.34)	0.82 (0.36–1.86)
Parks, squares, walking paths, bike lanes, and/or sports courts (versus no)	**0.54 (0.31–0.94)**	0.65 (0.35–1.20)
Outdoor gyms (older adult fitness center) (versus no)	**0.35 (0.20–0.63)**	**0.38 (0.20–0.72)**
Use of the outdoor gym (versus no)	0.48 (0.10–2.27)	0.30 (0.03–2.67)
Fitness centers and/or clubs (versus no)	**0.38 (0.19–0.74)**	**0.42 (0.19–0.89)**
Streets and sidewalks		
Sidewalks on most streets (versus no)	**0.54 (0.32–0.90)**	0.60 (0.33–1.09)
Well-maintained sidewalks (versus no)	**0.47 (0.27–0.82)**	**0.37 (0.19–0.71)**
Green area (versus no)	0.64 (0.38–1.07)	0.62 (0.34–1.13)
Level streets (versus no)	0.97 (0.49–1.89)	1.16 (0.51–2.59)
Garbage accumulation and/or places with open sewage (versus no)	1.14 (0.63–2.05)	1.14 (0.58–2.25)
Traffic		
Traffic as a barrier to walking or cycling (versus no)	1.24 (0.64–2.42)	1.79 (0.82–3.92)
Pedestrian crosswalks. signals. or walkways (versus no)	**0.40 (0.21–0.79)**	**0.39 (0.18–0.84)**
Drivers respect pedestrians (versus no)	2.04 (0.57–7.25)	2.10 (0.32–13.61)
Safety		
Street lighting (versus no)	0.93 (0.46–1.90)	0.68 (0.30–1.54)
Daytime safety for walking (versus no)	**0.30 (0.15–0.58)**	**0.35 (0.16–0.76)**
Nighttime safety for walking (versus no)	**0.43 (0.23–0.79)**	**0.40 (0.19–0.83)**
High level of criminality (versus no)	1.46 (0.88–2.43)	1.42 (0.79–2.56)

OR: odds ratio; 95%CI: 95% confidence interval; [a]adjusted for sex, age group, marital status, skin color, education level, monthly income, years living in the neighborhood, self-perceived health, and multimorbidity. Bold: statically significant association.

DISCUSSION

This study showed that the absence of food establishments, health clinics, community centers, outdoor gyms, fitness centers and/or clubs, well-maintained sidewalks, pedestrian signals, and neighborhood safety was associated with the presence of depressive symptoms.

Regarding the associations observed, the literature has highlighted that the neighborhood environment can attenuate the presence of depressive symptoms or even protect older adults from this outcome[30], mainly due to its positive aspects[31], such as the promotion of social interaction and engagement in physical activity practice[32]. Easy access to the variety of daily destinations, such as food establishments, public services, parks/open spaces/recreational facilities, has been increasingly recognized as a determinant for positive health outcomes, and the absence of these places is associated with the presence of depressive symptoms[31,33-36]. In a cohort study conducted in Canada with 7,114 adults and older adults, it was observed that the presence of any service in the neighborhood—food store, cafeteria, health care service, and parks—was significantly associated with a lower probability of depressive episodes[35]. In addition, the greater destination possibilities for daily activities that are close to the residence of older adults has also been associated with better levels of physical activity[14] and lower probabilities of developing a physical limitation[37,38] and having a cognitive decline[33,39]. It is believed that the neighborhood environment can influence mental health via multiple mechanisms[34], and the general and diversified access to destinations and services favors the increase in the number of daily trips, stimulates locomotion around the neighborhood, and, consequently, increases the frequency of social and physical activities[34,36].

In the USA, a study conducted with older adults found that those who reported living in neighborhoods with garbage and dirty and/or deserted sidewalks had higher rates of depressive symptoms[40]. Other studies have also shown associations between sidewalk characteristics and other important mental health outcomes such as the level of physical activity. In another longitudinal study[41], it was observed that individuals who lived near improved sidewalks were 1.6 times more likely to spend more time walking and practicing physical activity during the week than those who did not live near quality sidewalks[41]. In addition, according to a systematic review[42], the presence and aesthetics of sidewalks are determinant for the practice of physical activity[42]. It is known that staying physically active triggers biological and psychological benefits capable of decreasing the risk of various mental disorders, including cognitive decline, dementia, and depression[43-45].

The main physiological changes related to physical activity that reduce symptoms of depression are: the increase in angiogenesis and cerebral blood flow, which provide an increase in neuroplasticity—such as the brain-derived neurotrophic factor—the reduction of inflammatory markers—such as interleukins 6 and 18, C-reactive protein, leptin, fibrinogen, and angiotensin II—and oxidative stress, through the production of antioxidant enzymes, and the regulation of the hypothalamic-pituitary-adrenal axis[43]. Among the psychological changes, it also leads to an improvement in self-esteem and a sense of self-efficacy, which are triggered by the release of chemicals in the body, such as endorphins[44]. In this sense, these findings are important, especially since they show that regular physical activity, as well as social participation in the neighborhood environment, are among the recommendations of the World Health Organization (WHO) listed in the action plan for the promotion of mental health[45].

The presence of crosswalks and traffic signals were associated with lower odds of depressive symptoms. On the other hand, a cohort study[46] observed that the presence of pedestrian infrastructure was a risk factor for the development of depressive symptoms (OR=1.02; p=0.008). According to the authors, this association can be justified by the fact that pedestrian crosswalks and walkways are commonly found in urban centers with many buildings, high traffic volume, and lack of facilities and public services for social gatherings[46]. Notably, these comparisons should be cautiously interpreted, since the population and the environment characteristics of the two studies are different. The older adults evaluated in this study lived in a municipality with limited urban structures, where most of the streets and/or avenues do not have crosswalks, possibly due to a lack of paving and/or difficult access for residents, which negatively affects safe locomotion.

The feeling of insecurity in the neighborhood was another important factor that can contribute to the presence of depressive symptoms in older adults. Corroborating our findings regarding neighborhood safety and depressive symptoms, a study by Wilson-Genderson and Pruchnob[47] suggested that those who perceived their neighborhoods as unsafe had higher levels of depressive symptoms. The authors suggest that the perception of lack of safety is an indicator of chronic environmental stressors that can lead to social isolation and decreased mobility and quality of life, thus increasing the likelihood of depressive symptoms. Thus, neighborhoods that stimulate feelings of security and trust can improve social integration and offer more opportunities for positive and supportive social relations in the neighborhood[47].

Notably, this results are very significant, since they show the contribution of factors that are totally modifiable and capable of assisting in the control or prevention of one of the most prevalent chronic conditions among the older population. Some aspects of the neighborhood are understood as depression inducers, whereas others, as protectors[28], as stressed by the International Classification of Functioning, Disability, and Health (ICF), prepared by WHO, in which the neighborhood environment is an important aspect to be considered in the multidimensional assessment of older people health[48,49]. Thus, new environmental intervention strategies can prevent depressive symptoms in older adults, such as the presence of food establishments, health clinics and community centers, outdoor gyms, fitness centers and/or clubs, well-maintained sidewalks, crosswalks, pedestrian signals and walkways, and neighborhood safety.

Among the limitations observed in this study, we can mention: the subjectivity of the evaluated measures, which tend to be influenced by the interviewee's mood and disposition; the cross-sectional design due to possible reverse causality bias; and the results that cannot be generalized to all older adults—although the representative calculation of the older adults with access to the Primary Health Care System service was conducted, they do not represent the total older adults population of the municipality.

Depressive symptoms are a public health problem in Brazil and the older adults affected by depression need to be better supported, especially in neighborhood environments that can be easily modified. Therefore, the results of this study are considered to be helpful in identifying the local needs of the studied population regarding the neighborhood environment, which can contribute to the promotion of mental health.

CONCLUSION

We concluded that neighborhood environments perceived as better, that is, with the presence of food establishments, health clinics and community centers, outdoor gyms, fitness centers and/or clubs, well-maintained sidewalks, pedestrian signals, and neighborhood safety, were associated with lower odds of community-dwelling older adults presenting depressive symptoms. Therefore, it is relevant to identify such characteristics of the neighborhood environment and intervene by public policies and innovative planning to promote better mental health in this population.

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