

STUDY SC100: ASSOCIATION OF LEISURE EXPERIENCES WITH THE FUNCTIONAL CAPACITY OF ELDERLY CENTENNIALS**Received on:** June 01, 2024**Passed on:** December 09, 2024License: *Priscila Rodrigues Gil¹*

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ABSTRACT: The objective of this work was to associate leisure experiences with the functional capacity of elderly centenarians. Methodology: 34 centenarians living in the State of Santa Catarina, Brazil, were evaluated. The centenarians were interviewed in their homes using the Multidimensional Assessment Protocol for the Elderly

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Centenarian (PAMIC). Based on functional capacity data, the elderly were classified as functionally independent and functionally dependent. To define the categories of leisure experiences, thematic content analysis was used and then an association was made with the functional capacity of centenarians using the Chi-square test. Centenarians' leisure experiences are predominantly carried out at home, particularly watching TV (43.5% for independents and 56.5% dependents) and receiving visitors (37.5% for independents and 62.5% dependents). There was an association between the experience of leisure - manual work and functional capacity ($p= 0.005$) and there is a tendency for 77.3% of dependent centenarians not to perform manual work and for 75% of independent ones to experience it. Leisure experiences must be expanded and provided for both dependent and functionally independent centenarians, whether in the home environment or outside of it.

KEYWORDS: Centenary. Leisure. Functional capacity.

ESTUDO SC100: ASSOCIAÇÃO DE VIVÊNCIAS NO LAZER COM A CAPACIDADE FUNCIONAL DE IDOSOS CENTENÁRIOS

RESUMO: O objetivo desse trabalho foi associar as vivências no lazer com a capacidade funcional de idosos centenários. Foram avaliados 34 centenários, residentes no Estado de Santa Catarina, Brasil. Os centenários foram entrevistados em suas residências por meio do Protocolo de Avaliação Multidimensional do Idoso Centenário (PAMIC). Com base nos dados da capacidade funcional, os idosos foram classificados em independentes e dependentes funcionalmente. Para definir as categorias das vivências no lazer foi utilizada a análise de conteúdo temática e após foi realizada associação com a capacidade funcional dos centenários por meio do teste de Qui-quadrado. As vivências no lazer dos centenários são realizadas predominantemente no ambiente domiciliar, em destaque para assistir TV (43,5% para os independentes e 56,5% dependentes) e receber visitas (37,5% para os independentes e 62,5% dependentes). Houve associação entre a vivência de lazer - trabalhos manuais com a capacidade funcional ($p= 0,005$) e há uma tendência de 77,3% dos centenários dependentes não realizarem trabalhos manuais e de 75% dos independentes vivenciarem. Deve-se ampliar e oportunizar vivências de lazer tanto para os centenários dependentes como independentes funcionalmente, seja no ambiente domiciliar ou fora deste.

PALAVRAS-CHAVE: Centenário. Lazer. Capacidade funcional.

Introduction

In Brazil, approximately 1.7% of the population consists of long-lived elderly, meaning individuals aged over 80 years, and this population is estimated to increase by 1.3% by 2030 (IBGE, 2010). Globally, the population of older adults aged 80 and over is projected to triple between 2020 and 2050 (United Nations, 2019). This scenario

results from advancements in healthcare, technology, pharmacological medicines, and non-pharmacological treatments, which increase the survival of this population (OMS, 2020). This expressive growth in the long-lived elderly population, however, will demand changes and adjustments in all sectors, especially healthcare, linked to the hospital sector and to public, collective, and preventive care (Arai *et al.*, 2007).

In this regard, it is fundamental to investigate the aspects adjacent to the aging process. Examples include neuromuscular, metabolic, physiological, cognitive, and behavioral declines (Coelho-Ravagnani *et al.*, 2021), especially when referring to the long-lived elderly, including centenarians (Herr, *et al.*, 2018; Ribeiro *et al.*, 2018).

Among the aspects to be considered, it is verified that functional capacity is related to advanced age, social relationships, educational level, salary income, comorbidities, cognition, and leisure activities (Sant'Helena; Silva; Gonçalves, 2020). Furthermore, autonomy in their daily routine (Nogueira *et al.*, 2010) enables self-care, adapting to everyday problems despite their limitations, whether physical, mental, or social (Lourenço *et al.*, 2012).

Thus, authors have identified that independent and autonomous older adults perform basic activities of daily living (ADL) without assistance, presenting preserved physical and cognitive fitness (Cardoso *et al.* 2019; Capanema *et al.*, 2022). Moreover, studies have verified that psychosocial factors, such as depression and social isolation, can contribute to the loss of autonomy and independence in the long-lived elderly (Manso *et al.*, 2019; Vieira *et al.*, 2021). Furthermore, Bôas *et al.* (2020) verified dependence in ADL among the long-lived elderly, which is associated with functional decline, family support, and affectivity.

Regarding centenarians, studies identify that this population is considered heterogeneous (Mazo *et al.*, 2019; Jost *et al.*, 2022), with low functional capacity (Capanema *et al.*, 2022; Jost *et al.*, 2022), related to sedentary behavior (Jost *et al.*, 2022). Additionally, Nogueira *et al.* (2010) also associated the functional capacity of the long-lived with sedentary behavior, a lack of physical activity (PA), and a decrease in daily activities, as did the daily-centered leisure experiences of centenarians in studies by Streit *et al.* (2015) and Naman *et al.* (2017).

Another essential aspect in people's lives is leisure, which can include the experience of countless cultural manifestations, such as sport, games, festivals, outings, travel, and artistic expressions like sculpture, painting, literature, dance, theater, music, and other possibilities. It can also include idleness, which is inserted within cultural manifestations, the social environment, and leisure experiences (Gomes, 2014). Machado (2020) reinforces this idea by stating that leisure is a time of idleness, of development, a time for the growth of reflection, and the author defends it as a social right.

The benefits of leisure for the elderly are identified in some studies (Nakamura; Hildebrand; 2020; Gil *et al.*, 2015), including among the long-lived and centenarians, whose daily routine is often restricted to the domestic sphere (Mazo *et al.*, 2019; Naman *et al.*, 2017; Streit *et al.*, 2015). A study by Naman *et al.* (2017) observed modifications in leisure experiences over the lifespan: they decreased over the years, though social activities remained for a good part of the lives of the investigated older adults.

Due to centenarians' routines being more restricted to the home environment, the practice of PA in leisure tends to be low. According to research by Streit *et al.* (2015), centenarians who engaged in leisure activities outside the home, such as "visiting

relatives or friends" and "shopping", showed a higher level of physical activity than the average of 640 steps/day. In turn, the study by Mazo *et al.* (2019) verified that when centenarians practiced PA, it was walking, which was generally restricted to the domestic environment; and, in terms of steps/day, most were considered physically inactive (<1,000 steps/day, via pedometer).

Thus, highlighting the increase in longevity and the scarcity of research that specifically associates the different leisure experiences with the functional capacity of centenarians, it becomes important to investigate this topic for possible public health interventions. In this regard, other studies are relevant to support intervention strategies aimed at minimizing the functional declines arising from aging (Valenzuela *et al.*, 2019) and to identify the leisure experiences that motivate the elderly to live and provide them with pleasure. The research may assist the various professionals who work with this population in formulating proposals for leisure experiences and physical activities for the long-lived, encouraging leisure as a behavior incorporated into the older adult's life. Therefore, the purpose of this study is to associate leisure experiences with the functional capacity of centenarians.

Method

This study is characterized as cross-sectional, descriptive, and qualitative-quantitative (Gil, 2010; Thomas; Nelson; Silverman, 2012). It is part of the "Project SC100: Multidimensional Study of Centenarians in Santa Catarina", which was approved by the Ethics Committee on Research Involving Human Subjects (CEPSH) of UDESC (Opinion No. 5.247.779/2022, Certificate of Ethical Waiver 21417713.9.0000.0118), and was carried out in accordance with Resolution 466/2012 of

the National Health Council. For participation in the research, the centenarians or their primary caregivers signed the Informed Consent Form.

Population and Sample

A total of 124 centenarians residing in the state of Santa Catarina/Brazil were located in the mesoregions of Greater Florianópolis, microregion of Joinville, mesoregion of Vale do Itajaí, and mesoregion of Southern Santa Catarina, based on IBGE 2010 data, in partnership with the State Health Department of Santa Catarina, Municipal Health Departments, and Primary Health Care Units. Data collection was carried out from March 2015 to January 2020. Due to the pandemic caused by the SARS-COV-2 virus, assessments were suspended in 2020. Thus, the database of Project SC100 was used. For this research, 34 centenarians were included, who met the inclusion criteria according to the Project SC100 database, which required being 100 years old or older in the year of data collection and having age verified through a personal identification document. Furthermore, they had to answer the questions related to leisure activities at present, undergo functional capacity assessment, and answer questions regarding PA. A total of 69 centenarians were excluded for not reaching the cutoff point of the Mini-Mental State Examination (MMSE) (Folstein; Folstein; McHugh, 1975) and being classified with cognitive impairment according to Brucki *et al.* (2003), as well as 21 older adults who did not answer all the PAMIC blocks related to the study.

Instruments

The data collection instrument used was PAMIC (MAZO, 2017), which was developed for the Project SC100 of the Gerontology Laboratory (LAGER), Center for Health and Sports Sciences (CEFID), at Universidade do Estado de Santa Catarina [State University of Santa Catarina] (UDESC). PAMIC consists of different instruments translated, modified, and validated for Brazil, distributed into 16 blocks comprising 220 questions.

In this research, some blocks and questions from PAMIC were used. To characterize the sample, questions from Block 1 (identification of the elderly); Block 3 (mental health of the elderly); Block 4 (sociodemographic information of the elderly); Block 7 (health conditions of the elderly); and Block 9 (physical activity/exercise of the elderly) were used. Additionally, Block 5 (past and present leisure activities) was included to identify leisure experiences.

To assess the functional capacity of centenarians in performing activities of daily living (ADLs), Block 8 (Assessment of Functional Capacity of the Elderly) was applied, referring to the Katz Index cross-culturally adapted for Brazil (Lino *et al.*, 2008). In this study, the elderly were classified as independent or dependent for performing six functions (bathing, dressing, using the toilet, transferring, continence, and feeding). For data analysis, the centenarians were divided into two groups: “independents”, in which individuals were independent in all functions; and “dependents”, in which they were dependent in one or more functions (Table 1).

Table 1: Classification of Functions of the Katz Scale.

| FUNCTION | (INDEPENDENT OR DEPENDENT) CLASSIFICATION OF RESPONSES | |
|---------------------|----------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Bathing | Independent | Dependent |
| | No supervision | Needs help with bathing |
| | Independent | Dependent |
| Dressing | Gets clothes and get dressed completely, without help | Needs help with dressing self or needs to be completely dressed |
| | Independent | Dependent |
| Toileting | Goes to toilet or equivalent place, cleans genital area without help | Needs help transferring to the toilet, cleaning self or uses bedpan or commode |
| | Independent | Dependent |
| | Moves in and out of bed or chair unassisted | Needs help in moving from bed to chair or requires a complete transfer |
| Transferring | Independent | Dependent |
| | Exercises complete self-control over urination and defecation | Is partially or totally incontinent of bowel or bladder |
| Continence | Independent | Dependent |
| | Gets food from plate into mouth without help | Needs partial or total help with feeding or requires parenteral feeding |
| Feeding | | |

Source: Prepared by the main author.

Data Analysis

The data were analyzed using descriptive statistics (mean, standard deviation, simple frequency and percentage), organized in program Excel®. In the questions related to leisure and daily routines, thematic content analysis was applied, as proposed by Minayo (2010), based on the transcriptions and grammatical corrections carefully performed so as not to alter the essence of the responses and to allow better comprehension of the statements.

The normality of the data was assessed using the Shapiro–Wilk test. To compare age with functional capacity, the t-test was employed. Associations between functional capacity and categorical sociodemographic characteristics, as well as between functional capacity and leisure experience categories, were analyzed using the Chi-square (χ^2) test or Fisher's Exact test, when necessary. In addition, standardized

adjusted residuals were applied to indicate the direction of associations. Values above 2.00 indicate a tendency. A significance level of 5% was adopted. All analyses were performed using the IBM SPSS Statistics software, version 19.4.

Results and Discussions

A total of 34 centenarians participated, with a mean age of 101.64 years (SD = 2.12). Table 1 presents the sociodemographic characteristics of centenarians who were functionally dependent and independent. Among the independent centenarians, 50% were women and 50% were men; most were widowed (78.6%), had a caregiver (71.4%), were illiterate (64.3%), and lived with family members (71.5%). Half of them (50%) were Catholic and reported a family income of two to three minimum wages. Regarding health conditions, most independent centenarians presented multimorbidity (78.6%), did not engage in physical activity (57.1%), and reported a positive perception of their health (71.4%).

In the group of functionally dependent centenarians, most were women (60%), widowed (75%), Catholic (75%), had a caregiver (70%), reported a family income from 2 to 3 minimum wages (45%), were illiterate (65%), and lived with family members (80%). Regarding health conditions, most dependent centenarians did not engage in physical activity (55%), had a negative health perception (60%), and all presented multimorbidity.

Table 1: Characteristics of functionally dependent and independent centenarians.
(n=34)

| Variables | Independents (n=14) | Dependents (n=20) | p |
|-----------------------------------------|---------------------|-------------------|-------|
| Sociodemographic Characteristics | | | |
| Mean age (dp) | 101.14 (1.29) | 102 (2.57) | 0.261 |
| Gender n (%) | | | |
| Male | 7 (50%) | 8 (40%) | 0.563 |
| Female | 7 (50%) | 12 (60%) | |

| Marital Status^{n (%)} | | | | |
|------------------------------------------------------|------------|-----------|-------|--|
| Single | 1 (7.1%) | 0 (0%) | 0.386 | |
| Married | 2 (14.3%) | 5 (25%) | | |
| Widower | 11 (78.6%) | 15 (75%) | | |
| Religion^(%) | | | | |
| Atheist | 2 (14.3%) | 2 (10%) | 0.234 | |
| Catholic | 7 (50%) | 15 (75%) | | |
| Spiritism | 0 (0%) | 1 (5%) | | |
| Evangelical | 5 (35.7%) | 2 (10%) | | |
| Hires a caregiver^{n (%)} | | | | |
| Yes | 10 (71.4%) | 14 (70%) | 0.618 | |
| No | 4 (28.6%) | 6 (30%) | | |
| Income | | | | |
| Up to 1 minimum wage (MW) | 3 (21.4%) | 2 (10%) | 0.532 | |
| 1 MW to 2MW | 3 (21.4%) | 3 (15%) | | |
| 2.1 to 3MW | 7 (50%) | 9 (45%) | | |
| 3.1 to 4MW | 1 (7.1%) | 5 (25%) | | |
| Above 4MW | 0 (0%) | 1 (5%) | | |
| Can read and write | | | | |
| Yes | 5 (35.7%) | 7 (35%) | 0.623 | |
| No | 9 (64.3%) | 13 (65%) | | |
| Resides^{n (%)} | | | | |
| Family | 10 (71.5%) | 16 (80%) | 0.845 | |
| ILPI | 1 (7.1%) | 1 (5%) | | |
| Alone | 3 (21.4%) | 3 (15%) | | |
| Physical Activity (PA) | | | | |
| Practices PA^{n (%)} | | | | |
| Yes | 6 (42.9%) | 9 (45%) | 0.901 | |
| No | 8 (57.1%) | 11 (55%) | | |
| Practices PA with supervision^{n (%)} | | | | |
| Does not practice | 8 (57.1%) | 11 (55%) | 0.697 | |
| No supervision | 4 (28.6%) | 4 (20%) | | |
| With supervision | 2 (14.3%) | 5 (25%) | | |
| Health Condition | | | | |
| Multimorbidities^{n (%)} | | | | |
| Yes | 11 (78.6%) | 20 (100%) | 0.095 | |
| No | 3 (21.4%) | 0 (0%) | | |
| Self-perception of health^{n (%)} | | | | |
| Positive | 10 (71.4%) | 8 (40%) | 0.071 | |
| Negative | 4 (28.6%) | 12 (60%) | | |

Legend: n: simple frequency; %: percentage; PA: physical activity; SD: standard deviation; MW: minimum wage.

Source: Prepared by the main author.

Functionally dependent and independent centenarians are homogeneous ($p > 0.005$) in relation to their sociodemographic characteristics, PA and health conditions, corroborating the review by Sant'Helena, Silva and Gonçalves (2020) which related leisure activities, level of education, cognition, salary income and comorbidities with ADL. The study indicates that for healthy aging—with autonomy, independence, and

quality of life—physical activity should be incorporated into the daily lives of older adults.

Our findings are consistent with the study by *Streit et al.* (2015), which compared physical activity levels with the functional capacity of centenarians in the city of Florianópolis (SC), showing that those who were independent for most activities of daily living (ADL) also presented more than 1,000 steps per day. In other regions of Brazil, studies with long-lived older adults report sociodemographic data similar to those of our study, such as the investigation by *Kupske et al.* (2021) with nonagenarians and centenarians in the city of Santa Rosa (RS). That research highlighted widowed women, living with family members, and functionally dependent. The study by Oliveira and Porto (2021), in turn, with long-lived older adults in a municipality in the interior of Bahia found predominance of women, widowed, Catholic, with no formal education, low income, and living with relatives. In Portugal, a study conducted with centenarians from Porto showed results indicating total or partial functional dependence in most of these individuals (Araújo, Ribeiro, & Paul, 2016).

Functional capacity is related to the ADL of centenarians (Nogueira *et al.*, 2010). *Bortoluzzi et al.* (2017) identified the prevalence of functional dependence in long-lived older adults, associated with negative self-perception of health, lack of physical activity, and the presence of three or more chronic conditions. A research conducted by *Herr et al.* (2016), with French older adults aged 70 and 90, found that the older participants were more likely to present functional limitations, particularly in ‘bathing’ and ‘dressing’.

In this study, among the functionally dependent elderly individuals (n=20), the majority had 1 to 2 domains of dependence (65%). Regarding the domains, 80% present

dependence in the domain of 'dressing'; 45% in 'transferring'; 40% in 'bathing'; 40% in 'continence'; 30% in "going to the bathroom" and none in the domain of 'feeding'. This domain relates the physical abilities of flexibility and strength, which, in most cases, are in decline in octogenarians, influencing ADL, frailty and PA (O'neill; Forman, 2020).

In this study, most centenarians did not engage in physical activity (57.1% of independent and 55% of dependent participants). With aging, declines in strength and physical activity occur among centenarians due to frailty and disease (Herr *et al.*, 2018). The practice of physical activity should be encouraged in long-lived older adults to promote health benefits and prevent falls (Mazo *et al.*, 2022). In this study, of the 15 centenarians who practiced physical activity, seven were supervised by a physical education professional or physiotherapist, and eight were not supervised. These health professionals, in exercising their responsibilities involving exercise prescription, contribute to improvements in balance, strength, and coordination in older adults (Arruda *et al.*, 2019; Capanema & Mazo, 2022).

When analyzing functional capacity and leisure activities, the present study demonstrated an association between functional capacity and manual leisure activities ($p = 0.005$). Independent centenarians (64.3%) showed a greater tendency toward practicing manual leisure activities compared to dependent ones (Table 2).

Table 2: Association between functional capacity and leisure activities (n = 34).

| Leisure Experiences | Independents n (%) | Dependents n (%) | p (χ^2) |
|--------------------------------|-----------------------|---------------------|-------------------|
| Watch TV | | | 1.000 |
| Experience | 10 (43.5%) | 13 (56.5%) | |
| Does not experience | 4 (36.4%) | 7 (63.6%) | |
| Household Activities | | | 0.435 |
| Experience | 5 (55.6%) | 4 (44.4%) | |
| Does not experience | 9 (36.0%) | 16 (64.0%) | |
| Intellectual Activities | | | 1.000 |
| Experience | 6 (42.9%) | 8 (57.1%) | |
| | 8 (40.0%) | 12 (60.0%) | |

| | | | | |
|--------------------------------|---------------------|--------------|------------|--------|
| Manual Activities | Does not experience | | | |
| | Experience | 9 (75.0%) ** | 3 (25.0%) | 0.005* |
| | Does not experience | 5 (22.7%) | 17 (77.3%) | |
| Self-care | | | | 0.422 |
| | Experience | 2 (25.0%) | 6 (75.0%) | |
| | Does not experience | 12 (46.2%) | 14 (53.8%) | |
| Going out / Shopping | | | | 0.092 |
| | Experience | 9 (56.2%) | 7 (43.8%) | |
| | Does not experience | 5 (27.8%) | 13 (72.2%) | |
| Practices PA | | | | 0.252 |
| | Experience | 6 (60.0%) | 4 (40.0%) | |
| | Does not experience | 8 (33.3%) | 16 (66.7%) | |
| Receive visits or visit | | | | 0.704 |
| | Experience | 9 (37.5%) | 15 (62.5%) | |
| | Does not experience | 5 (50.0%) | 5 (50.0%) | |
| Relax / leisure | | | | 1.00 0 |
| | Experience | 4 (40.0%) | 6 (60.0%) | |
| | Does not experience | 10 (41.7%) | 14 (58.3%) | |
| Praying | | | | 0.324 |
| | Experience | 8 (50.0%) | 8 (50.0%) | |
| | Does not experience | 6 (33.3%) | 12 (66.7%) | |

Legend: n: simple frequency, %: percentage, PA: physical activity, χ^2 : Chi-square test, ** residual adjustment = 3.00

Source: Prepared by the main author.

It is also observed that the manual activities cited by the centenarians are: crocheting, knitting, lacemaking, drawing, writing, and sculpting. In the study by Chaves *et al.* (2017) found that older people have greater difficulty performing daily tasks and aging contributes to the decline of sensory and motor functions. Age-related declines in the very elderly affect parameters of the peripheral nervous system, thereby impairing the motor units of the hands (Carmeli; Patish; Coleman, 2003), in addition to the reduction of skeletal muscle mass due to disuse atrophy (Howard *et al.*, 2020). Furthermore, reduced visual acuity can hinder fine precision movements (Carmeli; Patish; Coleman, 2003).

Harb *et al.* (2017) examined two groups of older adults, one aged 60 to 70 and another over 70, and found that the older age group exhibited a reduction in fine motor performance, especially among sedentary individuals. This study supports our findings,

where 77.3% of dependent centenarians do not engage in manual activities and 66.7% of dependent centenarians do not practice PA.

Mazo and colleagues (2021a) found that Physical Activity (PA) in centenarians is closely related to handgrip strength, which may suggest that active centenarians possess better strength to perform manual activities, consequently allowing them to engage in these activities more frequently during leisure time.

The leisure experiences in this research are predominantly home-based. Some mentioned include: watching TV, receiving visitors, domestic activities, manual activities, intellectual activities, or simply self-care and relaxation. Home-based leisure in centenarians was also found in other studies of the Project SC100 (Mazo *et al.*, 2019; Naman *et al.*, 2017; Streit *et al.*, 2015). For these older adults, leisure experiences at home provide physical, mental, and social well-being, give meaning to their daily occupations, and enable the realization of positive satisfying experiences (Nakamura; Hildebrand, 2020).

The home-based leisure experiences integrated into the routine of the older adults in the present study are mainly watching TV (43.5% in independent older adults and 56.5% in dependent older adults) and receiving visitors (37.5% in independent older adults and 62.5% in dependent older adults). Östlund (2010) suggests that watching TV is an active occupation, both mentally and emotionally, and stimulates communication between the older adult and family or caregivers. Socialization, family relationships, and sharing interests with friends are linked to a good quality of life for older adults (Oliveira *et al.*, 2017).

The daily life of the centenarian depends on their family or caregiver, as well as the planning, organization, and care provided; thus offering the older adult leisure time

based on the centenarian's will and interest (Brasil, 2003). The elderly caregiver can be a facilitator/stimulator of leisure experiences, as demonstrated in the study by Moreira and Caldas (2007). The authors discuss the value of the caregiver in the older adult's life, noting that the service provided involves actions for health promotion, disease prevention and treatment, and rehabilitation. However, many caregivers experience overload, reporting restrictions in leisure, personal relationships, and self-care, thus affecting the quality of life of both the caregiver and the older adult (Monteiro, 2021); in addition to a lack of support from health professionals and family members for care, poor infrastructure and financial resources, and lack of time to engage in PA (Mazo *et al.*, 2021b).

In this paper, some centenarians practice PA during their leisure time (60% in independent older adults and 40% in dependent older adults). Leisure PA provides diverse physical, mental, and social benefits to older adults, inspiring joy and satisfaction in a healthy way (Mazo; Lopes; Benedetti, 2009; Coelho-Ravagnani *et al.*, 2021).

As a PA practice, walking was the most mentioned by the centenarians in this study. Both dependent and independent older adults reported pleasure in walking in the yard, with family members and friends, with light walking being highlighted. Ribeiro *et al.* (2015) also identified walking, but included stretching as the main physical activity practiced by the very elderly; despite its lower intensity, its regularity showed a significant association with functional independence.

Furthermore, Biehl-Printes and collaborators (2016) point to walking as the main PA performed among young and long-lived elderly people, among different modalities.

Walking directly impacts cardiorespiratory function, strength, endurance, mobility, flexibility, and balance, which interfere with Activities of Daily Living (ADL).

Besides walking, other activities were mentioned in the present study, such as gymnastics and dance in social groups. Gil *et al.* (2015) found that dance for the elderly, performed in social groups, facilitated improvements in interpersonal relationships. Furthermore, it enhanced feelings of joy and brought positive health benefits, such as improved motor, joint, muscular, and cardiorespiratory capacity, as well as easier cognitive performance, memorization, and concentration.

It was observed in the present study that some centenarians carry out their experiences outside the home, such as taking trips and shopping (56.2% independent and 43.8% dependent). Tourism is part of the life of older adults (Mazo; Lopes; Benedetti, 2009), with these authors citing the benefits of tourism for the elderly: maintaining physical and mental health, inspiring joy, acquiring new friendships, and fostering new learning and experiences.

Of the 16 centenarians who have experiences outside the home, 62.5% practice PA. Leaving the home and engaging in social leisure activities has been associated with improved physical functioning and social networks, which are not only protective sources for health but also enhance well-being, providing autonomy and freedom to perform daily activities (Streit *et al.*, 2015). Older adults with societal participation are capable of performing efficient physical, mental, and social activities, and they retain their cognitive functions and functional independence for longer (Sant'Helena; Silva; Gonçalves, 2020; Kupske *et al.*, 2021). However, studies indicate that the very elderly leave home less often than the young-old (Navarro *et al.*, 2015) and their participation

in social groups is lower (Leite *et al.*, 2012). Factors highlighted include insecurity in public environments (Navarro *et al.*, 2015) and fear of falls (Lenardt *et al.*, 2019).

It is noted in the present study that older adults with more dependent domains (4 to 5 domains) have more sedentary leisure experiences, not practicing PA, manual activities, or domestic activities. Functional capacity influences physical, social, cultural, physiological, leisure, and cognitive factors, which characterize the older adult's lifestyle (Sant'Helena; Silva; Gonçalves, 2020; Kupske *et al.*, 2021).

Another aspect is religiosity, which was highlighted in the groups' experiences (57.1% in independent elderly people and 40% in dependent elderly people). Spirituality is an important resilience strategy for the elderly, who face illnesses, loneliness, and loss throughout their lives. With spirituality, the individual can increase hope and reduce anxiety, in addition to opening the doors to the meaning of existence (Reis; Menezes, 2017).

The study stands out for being part of the Project SC100, with elderly centenarians living in different municipalities and regions of Santa Catarina, a population so long-lived and with preserved cognition and memory, shows the importance of the data obtained. Among some limitations presented herein is the reduced sample size, which was influenced by the applicability of the exclusion criteria. In the Mini-Mental State Examination (MMSE), the most widely used cognitive screening instrument in the world, particularly with older adults, the cutoff point is designed for the young-old, suggesting the creation of differentiated cutoff points for the very elderly. The suspension of evaluations due to the pandemic caused by the SARS-CoV-2 virus (COVID-19), preventing the continuity of data collection, can also be understood as a limitation.

Conclusion

It was observed that many leisure experiences occur in the home environment for both functionally independent and dependent centenarians. Functional capacity is not related to different leisure experiences among the elderly, except concerning manual activities, which are more frequently practiced by the independent group.

Given the above, the importance of investigating the determinants of functional capacity and leisure in the very elderly population is evident, considering the possibility of intervention and prevention measures for both health professionals and caregivers of these older adults.

The study results propose encouragement for the increase of independence in ADL among centenarians, combined with the practice of PA during leisure time. This incentive is proposed because manual activities were more frequent among those classified as independent. In addition to this encouragement for increased ADL independence—which certainly also relates to health and autonomy—the results suggest a reflection on the need to provide knowledge, access, and specific investigation into the interest, or lack thereof, in engaging in other leisure activities, both inside and outside the home environment. This is considering that both functionally dependent and independent centenarians have similar and limited leisure experiences, restricted to the domestic setting.

In this context, we believe there is a need for further reflection and dialogue with the elderly and public policies, providing physical education professionals and other health professionals in public settings who are qualified and motivated to also work in the homes of centenarians, with care and dedication to the health of elderly person.

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