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Psychosocial aspects of participation in competitive sports among older athletes: A scoping review

Valentina Cannella, MS^{1*}, Feliciano Villar, PhD¹, Rodrigo Serrat, PhD¹ and Emmanuelle Tulle, PhD²

¹ Department of Cognition, Development, and Educational Psychology, University of Barcelona, Barcelona, Spain

² Department of Social Sciences, Glasgow Caledonian University, Glasgow, United Kingdom

* Address correspondence to: Valentina Cannella, Department of Cognition, Development, and Educational Psychology, University of Barcelona, Passeig de la Vall d'Hebrón 171, 08035 Barcelona, Spain; E-mail: cannellavalentina@ub.edu

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Conflict of interest

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Abstract

Background and Objectives: In the last decade, sport has been considered a tool in active aging to maintain physical fitness, improve mental wellbeing and form social relationships among older people. However, a thorough psychosocial understanding of the phenomenon of older athletes competing in sports events is lacking. Most research has focused on competitive sports participation in the young population. Among the few studies on athletes aged 50 years and older, no scoping study has attempted to analyze the general state of knowledge of competitive sports participation in later life from a psychosocial perspective. Consequently, we undertook a scoping review of the literature to analyze existing knowledge of this phenomenon and highlight gaps.

Research Design and Methods: We followed the five-step process outlined by Arksey and O'Malley (2005) and expanded by Levac and colleagues (2010). After the search in four electronic databases, a total of 69 peer-reviewed articles met the inclusion criteria.

Results: The findings indicate that psychosocial research into older people's participation in competitive sports has grown moderately in the last decade. While intrapersonal and interpersonal aspects have dominated the academic psychosocial discourse on older athletes' competitive sports participation, aspects related to the environment/community and policy have been largely overlooked.

Discussion and Implications: We identified several critical gaps in the literature, classified into conceptual, methodological, and diverse aspects. These gaps hint at opportunities that future research on older people's participation in competitive sports should address.

Keywords: socioecological model; active aging; competitive sport; Seniors games; Master athlete; sport participation.

Introduction

Sport is a social and cultural phenomenon that is important for human development. According to the Council of Europe's definition (1975), sports participation promotes the quality of life of those who practice it, and has a clear impact on physical, psychological and social dimensions. However, in the past, sports participation was targeted at a young population (Hobart, 1975), since it was assumed that intense physical effort could have detrimental effects on an aging body, unless it was therapeutic in nature. These traditional prejudices and stereotypes were based on a vision of aging associated with inevitable physical decline.

In the last three decades, negative perceptions of later life have changed fundamentally. This can be seen in concepts of successful (Baltes & Baltes, 1990; Rowe & Kahn, 1997), positive (Hill, 2011), active and healthy (World Health Organization, 2002, 2015) aging, that celebrate later life as a period of wellbeing, personal development and social engagement, rather than focusing on the ideas of disease, withdrawal and passivity. With the emergence of this new discourse, sports participation has begun to be recognized as a way to help older people maintain their health status and avoid diseases, in other words, to age actively (Dionigi & Gard, 2018). Concurrent with the emergence of this active aging paradigm, opportunities have increased for older people to participate in sports at recreational and highly competitive levels (Weir et al., 2010), but not at the same pace as for young people.

In fact, the dominant discourse about sport for older people has typically emphasized fun and friendship, or friendly competition, rather than serious competition, peak performance or winning. Consequently, sports participation among older people has been promoted more at recreational (e.g., Evans & Sleaf, 2015) than competitive level, in which it is a behavior based on comparisons in the presence of external evaluators. Hence, the

competitive sports achievements of older athletes have been documented to a lesser extent and only recently (Weir et al., 2010), with the spread of international competitive events across the world (i.e., the Senior/Masters Games). The study of competitive sports in later life, a period traditionally dominated by notions of frailty and decline, is particularly interesting, since it could indicate the potential and limits of active aging in extreme conditions. However, despite recent interest in competitive sports participation among older athletes, a thorough psychosocial understanding of the phenomenon is lacking.

The literature on older adults' competitive sports participation has focused predominantly on physiological aspects associated with sustained involvement in competitive sport activity, such as high levels of performance in terms of strength, endurance and flexibility (e.g., Wright & Perricelli, 2008). One of the limitations of this approach based on biological aspects of sport and aging is that it has been too steeped in the decline narrative of old age (Tulle & Phoenix, 2015) and has overlooked the fact that the implications of sport are far-reaching and go beyond physical effects. Whilst the physical health factors of sport should not be ignored, sport also has psychosocial dimensions that have been much less explored. Therefore, a multifaceted approach that moves beyond a focus only on individuals and their bodies' functioning is required to study the participation of older adults in competitive sports, since this activity has a psychological impact and takes place in the community. Although the term "psychosocial" has a broad meaning in social research, in our study we referred to it as "the intersection and interaction of social, cultural and environmental influences on the mind and behavior" (VandenBos, 2015, p. 862).

According to this definition, one framework that could be useful to understand the psychosocial implications of competitive sports in later life, in a multilayered and holistic way, is what is known as the socioecological model, which has been defined as "a general framework for understanding the nature of people's relation with their physical and

sociocultural surroundings” (Stokols, 1992, p.7). Using this model (McLeroy et al., 1988; Sallis et al., 2008), we can state that four main domains can influence sports participation in older competitors: intrapersonal, interpersonal, environmental/community-related and policy. The integrative perspective of the socioecological model foresees a complex interplay between levels, in which factors at one level may influence factors at another. However, for the sake of clarity and parsimony, we will reflect on the current state of knowledge in the literature separately for each aspect.

Research focused on the intrapersonal level explores psychological and sociodemographic variables that could influence participation in competitive sports among older people. Studies addressing these individually-based factors (e.g., Dionigi, 2006) tend to focus on individual motives that sustain older athletes’ commitment (e.g., Hodge et al., 2008; Kolt et al., 2004; Newton & Fry, 1998), which are often influenced by perceived benefits in the emotional state due to the enjoyment derived from sports participation (e.g., Andersen et al., 2018; Heo et al., 2012).

In the second domain of the socioecological model, research on interpersonal factors tends to investigate the presence of “significant others” (family, friends, teammates, coaches) as a relevant factor that could facilitate or constrain the maintenance of competitive sports practice among older people (e.g., Choi et al., 2018; Young & Medic, 2011). This domain also explores the social nature of participation in competitive sports, which, especially during events, promotes meaningful social interactions for older athletes within and outside the sports network (e.g., Dionigi et al., 2010; 2011).

The third domain of the socioecological model includes factors related to the community and the environment. Studies exploring these topics claim that, beyond socialization and friendship, participation in competitive sports can enhance a sense of belonging to a community among older athletes (e.g., Lyons & Dionigi, 2007; McMillan &

Chavis, 1986). In this area, research focuses on determining how the social environment where older people live (including the availability of facilities, access to them and costs associated with a specific sport discipline) could facilitate or hinder their participation in competitive sports (e.g., Eime et al., 2015; Jenkin et al., 2016).

Finally, the wider domain in the socioecological model includes research on how sports policy can shape older athletes' participation in competitive sports. The basic assumption is that a political change would contribute to long-term social changes that could significantly increase active participation in competitive sports for older people (Gard & Dionigi, 2016). Therefore, it can be considered whether current sports policies include older athletes in the competitive sport agenda or still prioritize younger age ranges (Jenkin et al., 2018).

The literature on psychosocial aspects of competitive sports in later life has not been fully systematized and no scoping studies have reviewed overall knowledge on this field. Therefore, the purpose of this article is to identify the current state of knowledge about psychosocial aspects of older people's participation in competitive sports, and to highlight gaps in the social sciences literature and propose new directions for research.

Methods

Guided by the five-step framework developed by Arksey and O'Malley (2005), and expanded by Levac and colleagues (2010), we conducted a scoping review on older people's competitive sports participation for summarizing the existing literature and uncovering gaps.

Step 1: Identify the research question(s)

We identified two research questions for the scoping review:

- (1) What is the current knowledge on psychosocial aspects of older people's participation in competitive sports?

- (2) What opportunities does this review give rise to for future research on older people's participation in competitive sports?

Step 2: Identify relevant studies

With the help of a professional librarian, we developed an iterative process of selecting databases and search terms. The search protocol was initiated in September 2020. Four electronic databases (Web of Science, Scopus, PsycINFO and Sociological Abstract) were searched. We used a combination of keywords related to the concept categories of competitive sports participation and older athletes: (Sport* OR Games) NEAR (Competiti* OR Participation OR Master* OR event OR Vigorous OR Organization OR Olympic OR 'Athletic participation') AND (Adult OR Athlete) NEAR (Older OR Master* OR Senior* OR Veteran) OR (Ag*ng OR elder*). The search terms were adjusted for each database to maximize comprehensiveness.

Step 3: Select studies

Studies were accepted if they were written in English, available electronically in full-text and peer-reviewed. Although we limited our searches to empirical, review or conceptual papers, we did not use any year of publication limit. We scanned titles and abstracts and applied specific inclusion criteria. The most broadly limiting criterion was to include only papers focused on a working definition of sports participation (Canadian Heritage, 2013): "An activity that involves persons engaged for the purpose of competition, which involves formal rules and procedures, requires tactics and strategies, specialized neuromuscular skills, and a high degree of difficulty and effort" (p. 13). Therefore, articles on general physical activity were excluded. Furthermore, we included studies on athletes. Papers that focused exclusively on other participants in sports, such as volunteers, coaches, healthcare professionals or spectators, were excluded.

Other criteria in addition to the above were followed for the scoping review. In the sporting context there is no universally accepted definition of "older adults". For example, in Masters' and Seniors' sport competitions, participants are usually defined as "Masters" from the age of 35 and "Seniors" from the age of 50 (Wright & Perricelli, 2008). Consequently, in line with previous studies (e.g., Heo & Lee, 2010), we limited the review to athletes aged 50 years and older. However, articles that included younger athletes (< 50 years) were included if the study focused on comparisons between older and younger age groups. In the case of conceptual and review studies, we operationalized the age variable when the title and/or abstract included words such as "aging" or "older".

Second, we included studies only if the paper's focus was on participation in competitive sports, including individual and team sports that require serious training and vigorous preparation to be played at regional, national and world events (Baker et al., 2010). If the competitiveness dimension was not explicitly expressed (i.e., the focus was recreational sport and/or leisure physical activities), papers were excluded.

Lastly, according to the socioecological model (Sallis et al., 2008), we only included papers that focused on psychosocial aspects. Therefore, studies focused exclusively on biomedical issues, including illness or disease, were excluded.

Decisions about excluding or including papers were based on a review of the title and abstract, followed by a full-text review when the abstracts did not provide enough information to make a decision. Screening of the four databases was performed in two phases. First, one reviewer (CV) searched each database to exclude out-of-scope articles using predefined eligibility criteria applied to the titles and abstracts of identified articles. Second, two reviewers (CV and SR) screened full texts of the potential studies to determine whether they were eligible for inclusion in the review. Disagreement between the two reviewers was resolved by iterative discussions among them and another reviewer (VF). All

relevant articles were then compiled into a database for article management and duplication removal.

Step 4: Chart the data

Data were extracted from all selected articles using a standard extraction template. The abstracted data for studies included authors and date, the main study purpose, research methodology, sample and type of sports participation characteristics. These data were presented in table format (see Table 1). We extracted key information from each paper that was included in the final sample, and we charted it using a data-charting form in Microsoft Excel.

Step 5: Collate, summarize, and report the results

The data collected from the studies were entered into a table, analyzed descriptively and reported as frequency counts. The findings were presented first by descriptive mapping and second by narrative mapping through a content analysis technique.

Results

The database search yielded an initial 509 records. After removing duplicates, 429 titles and abstracts were screened for eligibility and 136 potentially relevant citations were retrieved in full text. Following the full text review, 69 articles that met the criteria were included. A flow chart of the search is presented in Fig. 1.

[Figure 1 near here]

The results are presented in two sections below. First, we provide a descriptive summary of the methodological aspects of the reviewed papers, the sample characteristics and the type of sports participation. Second, according to socioecological model levels (Sallis et al., 2008), we synthesize the results of the narrative content analysis of the papers.

Descriptive mapping

Studies included in the scoping review were published between 1994 and 2020 with a relevant increase in the number of publications from 2012 onwards. This is related to the fact that in many studies, samples were collected during sporting events for older athletes such as the Masters/ Senior Games, which have seen an exponential rise in participants aged over 50 years, compared to the initial editions. This may have influenced the increased interest in the recent phenomenon of older athletes (see Fig. 2).

[Figure 2 near here]

Most papers included in the review were empirical (59), with a smaller proportion of review (6) and conceptual papers (4). Among the latter, most review papers focused on psychosocial outcomes of participation in competitive sports in later life (e.g., Gayman et al., 2017). Conceptual papers mainly addressed gender and age issues in the context of competitive sports (e.g., Pfister, 2012), and the implications of the promotion of sport to older people (e.g., Geard et al., 2016). Over half of the empirical papers adopted a qualitative approach (37), while a lower proportion adopted quantitative approach (19) and only three papers a mixed method. As for the design of the fifty-nine empirical papers, we found just one longitudinal study (that is, collecting data at several points in time using the same sample), while the remaining fifty-eight studies were cross-sectional (that is, data were collected at a single time point). Only four of the sixty-two empirical papers used secondary data, mainly from archived data on sporting websites.

The analysis of empirical papers included in the review showed a strong presence of studies using samples from more than one country (16), due to the international character of the sporting events on which many studies are based. The most reported countries were the USA (26) and Australia (15) where most of the Seniors and Masters Games took place. Other regions and countries of the world were underrepresented or absent. Moreover, samples of

studies included in this scoping review tended to include both male and female participants (46 papers). Only eight empirical studies were focused exclusively on women, whereas another five studies were exclusively on men. Although one of the inclusion criteria stated that the athletes were older than 50 years, four comparative studies included younger athletes (<50 years). According to other inclusion criteria, forty-nine of the fifty-nine empirical studies were on competitive athletes only. A smaller number of papers (10) also included “non-competitive” athletes who do sports at recreational level as a comparison group. None of the empirical studies mentioned the presence of professional athletes, namely, those who make a living from financial remuneration for their participation (Stebbins, 1992).

In over three-quarters of the empirical studies included in this scoping review, the type of sport practiced by the sample was specified explicitly. Furthermore, over half of the revised papers (36) reported having collected data at sporting events. The nature of these competitive events was predominantly national (27 papers) with fewer international competitions reported (9 papers). As a result, studies were related to a wide variety of sports disciplines. When sports were grouped by typology, the most frequent individual sports were athletics (track and field), swimming, cycling and triathlon. Among team sports, racquet games were predominantly present in the studies (in particular, tennis and badminton). Likewise, bat and ball games (e.g., softball and basketball) were frequent, with a lower percentage of stick games (e.g., hockey). The difference between the type of sport practiced was only analyzed in two articles (Helsen et al., 2020; Medic et al., 2009). In the remaining studies, the type of sport practiced was not considered a differential variable. Additionally, almost half of the empirical articles included in this scoping review analyzed characteristics of the participants' sports involvement. Specifically, they examined the duration (in training hours), frequency and intensity of sports participation. They also addressed data related to participation in competitive events, focusing on the years that the athletes had been

participating in Sports Games, the number of events they had attended and the type of events.

Table 1 presents all the characteristics of the papers, including methodology, sample and type of sport participation.

[Table 1 near here]

Narrative mapping according to the socioecological model

Although the results of the selected studies are presented separately for each socioecological model domain and according to the complex interplay between these levels, we stress that twenty-nine of the fifty-nine empirical articles examined psychosocial factors at more than one socioecological level.

Among the empirical studies reviewed, those that adopted a qualitative approach (37) considered the multilevel factors related to sports participation among older athletes in a more exploratory way. In contrast, the quantitative studies (19) tended to be focused on the intrapersonal and interpersonal factors of participation, investigating motivational aspects, and personality characteristics, as well as participants' social circumstances.

Intrapersonal level

Drawing upon the socioecological model, in the first domain we included forty-nine papers on intrapersonal aspects of competitive sports participation in later life. Most of the selected studies focused on individual motivational factors determining older athletes' participation in competitive sports (e.g., Newton & Fry, 1998). Among them, a large number adopted a quantitative approach, using questionnaires and surveys (i.e., Sport Motivation Scale; Pelletier et al., 1995) as data collection instruments. Another four quantitative papers explored what the authors called "the five constituent year effect" (Helsen et al., 2020; Medic et al., 2009, 2018), in reference to the increase in older athletes' motivation to participate in competitive events if they are in the first or second year of any 5-year age category and the decrease when they are in the fourth or fifth year. Only three of the reviewed papers (e.g.,

Hirvensalo et al., 2000) analyzed the continuity of competitive sports participation over the lifespan and focused on understanding possible patterns and factors that promote or discourage lifelong involvement in competitive sports. Competitiveness was stressed as a significant factor for older athletes' participation in competitive events, which challenges the common notion that sport in later life is merely about fun and recreational involvement (e.g., Buzzelli & Draper, 2020). In fact, competitiveness seemed to encourage athletes to train to achieve a "personal best" while they compared themselves with others of their own age cohort (e.g., Dionigi et al., 2010, 2011). Personality and emotional factors were addressed in only six of the forty-nine articles. These papers focused on personality traits (Smith & Storandt, 1997), anxiety and depression (e.g., Bardhoshi et al., 2016), happiness (e.g., Ito & Hikoji, 2019) and precompetitive stress (Hoar et al., 2012).

In many of the remaining studies, the reasons for participating in competitive sports coincided with the benefits reported by older athletes (e.g., Heo et al., 2012). Namely, nine studies focused on how competitive sports participation enhanced the overall well-being of older participants (e.g., Chan & Lee, 2020), contributing to their life satisfaction (e.g., Heo & Lee, 2010). Other studies focused on the sense of personal empowerment (e.g., Dionigi, 2002b), fun and enjoyment (e.g., Cardenas et al., 2009a).

In some qualitative studies, participation in competitive sports was described as an opportunity for older athletes to expand their athletic identity (e.g., Dionigi, 2002a, 2006). This entailed redefining and normalizing what it means to be a competitive older athlete (e.g., Dionigi & O'Flynn, 2007), resisting traditional negative stereotypes through the acceptance of the aging process (e.g., Dionigi et al., 2013b; Pike, 2012) as well as resisting gender "norms" (e.g., Eman, 2011; Liechty et al., 2017).

There are widespread societal fears about loss of abilities in this period of life. However, only one qualitative study addressed the cognitive functioning changes related to

participation in competitive sports in later life (Geard et al., 2020). The fear of pain, falls and injuries, internalized as a result of society's view of aging as increasing fragility, was noted in some qualitative studies as a constraint on participation in competitive sports (e.g., Kirby & Kluge, 2013). One study reported that older athletes' participation in competitive sports helped them gain endurance with regard to pain (Heo et al., 2013), another that it helped them to accept the risk of falls (Brennan et al., 2018). Finally, three qualitative papers addressed the adaptation strategies for performance maintenance in competitions (Dionigi et al., 2013a), such as reducing participation intensity in low-ranked activities before major competitions (Rathwell & Young, 2015).

Interpersonal level

Approximately half of the empirical articles included in this scoping review (26 out of 59) addressed the interpersonal level of the socioecological model.

In most of these studies (some of them quantitative), participation in competitive sports during later life was considered an opportunity for older athletes to expand social networks (e.g., Casper & Jeon, 2018), to strengthen social ties with other athletes (e.g., Kim et al., 2020), not only during the competitive event but also during the preparation for it (Cardenas et al., 2009b, 2009a). The other qualitative studies revealed how the kind of friendship established through competitive involvement and based on a common interest in sport could be an incentive for older athletes to continue participating in competitive sports (e.g., Lyons & Dionigi, 2007). Some papers (e.g., Liechty et al., 2017) also mentioned pride in social status and the recognition that older athletes usually gain in competitive sports participation. In terms of positive interpersonal benefits of sports participation, five qualitative articles addressed the opportunity to be role models for peers (e.g., other older women; Horton et al., 2018) and younger players (e.g., children and grandchildren; Naar et

al., 2017). In these studies, older athletes also mentioned the intergenerational opportunities to play sport with other members/generations of their family (Jenkin et al., 2016, 2018).

Some qualitative papers (e.g., Wong et al., 2018) addressed the social support provided by significant others (family, friends, coaches, teammates, competitors and supporters) who encourage involvement in competitive sports. However, six of the twenty-six papers included in this socioecological domain focused on the disapproval that older athletes perceived from significant others, mainly from a few friends and family, due to concerns about possible injuries (e.g., Young & Medic, 2011). Other papers revealed the difficulties of balancing family, friends and sport, mentioning family members' willingness to negotiate factors such as training time and competition participation (Ito & Hikoji, 2018). Furthermore, most participants in these studies indicated some level of dissatisfaction with their social life outside their sports discipline, reporting difficulties in engaging in meaningful activities beyond competition priorities (Appleby & Dieffenbach, 2016).

Environmental/community related level

The third level of the socioecological model was addressed in fewer than a quarter of empirical studies of this scoping review. The thirteen papers (mostly qualitative) included in this section explored sociocultural and organizational characteristics as well as community-related aspects in which competitive sports were experienced during later life. These characteristics could facilitate or jeopardize the competitive sporting lifestyle.

The influence of cultural elements on sports participation was addressed by Chan et al. (2020), who defined badminton as a cultural symbol that determines and strengthens the participation of older British and Hong Kong players.

Another seven articles highlighted organizational barriers related to participation opportunities, in terms of practicing sports and competing in specific events. In the first case (e.g., Cardenas et al., 2009b), the constraints and the lack of appropriate opportunities to train

was linked to a lack of access to equipment and playing facilities. In the second case, two articles (Hall & Ferreira, 2012; Ito & Hikoji, 2018) analyzed specific aspects related to sporting events in which older competitors participate, such as the costs involved, the quality of facilities, the travelling distance and time of year when the event takes place, and its history/tradition.

A further six studies illustrated the support that older athletes received from their sporting community to maintain participation in competitive disciplines (e.g., Roper et al., 2003). Specifically, three of them (e.g., Lyons & Dionigi, 2007) referred to McMillan and Chavis' sense of community construct (1986) defined as "a feeling that members have of belonging, and a shared faith that members' needs will be met through their commitment to be together" (p.9). According to this definition, the main constituents of community (membership, influence, fulfilment of needs and a shared emotional connection) were experienced by older adults who participated in competitive sports.

Policy level

Among the fifty-nine empirical article in this scoping review, just eight (all of them qualitative) analyzed variables related to policy level. Issues related to public policies on aging and sport were considered predictive factors (barriers on many occasions) of participation in competitive sports among older people. In three studies (e.g., Gard et al., 2017) the authors addressed the influence of the public policy discourses around older adults' sports participation within a neoliberal framework. The moral viewpoints embedded in these policy discourses, for example, that there is a good/bad or right/wrong way to age or that how we age is a personal choice, are reproduced by older athletes when they talk about their sports participation and the lack of participation by others.

Other three studies (e.g., West et al., 2019) reiterated that any sport policy focusing on older adults could significantly increase active participation in this age group. However, these

studies mentioned the tendency of some sports policies to prioritize the participation of younger age groups. They stated that older adults are not a main priority group in the sport policy agenda.

Despite a variety of national policy initiatives to promote competitive sports in late adulthood across gender, another two studies addressed the limited policies for female athletes. Specifically, Wong et al. (2018) critically stated that older women's competitive sports participation is not being supported at the local level by an effective public sport policy. Similarly, Naar et al. (2017) pointed to the lack of policies for the recruitment and retention of older women in team sports.

Discussion

This scoping review sought to analyze research on competitive sports participation in later life from a psychosocial perspective, and to identify knowledge gaps and propose new directions for research. A first conclusion arising from this scoping review is that research into older people's participation in competitive sports has grown moderately during the last two decades, which reflect that research on this topic is still in its infancy. Deeper attention to this practically overlooked phenomenon would not only benefit the approaches to positive, successful, active aging (Hill, 2011; Rowe & Kahn, 1997; WHO, 2012, 2015) but might also be professionally fruitful, favoring interventions at the community level aimed at promoting active forms of aging through sports. To address these opportunities, our results suggest several critical gaps that should be prioritized in future research. These gaps can be classified as conceptual, methodological and related to diversity in research on psychosocial aspects of older people's participation in competitive sports.

Conceptual gaps

Drawing upon the socioecological framework (McLeroy et al., 1988; Sallis et al., 2008; Stokols, 1992), our findings were interpreted through the lens of the interrelated

domains of this model (intrapersonal, interpersonal, environmental and policy). The results reveal that not all domains of the socioecological model have received the same attention in research. Intrapersonal and interpersonal aspects have dominated the academic psychosocial discourse on older athletes' competitive sports participation. The other two domains of the socioecological model (environmental/community and policy) have been largely overlooked. Therefore, our scoping review demonstrates that intrapersonal aspects have been studied more than other factors in the psychosocial understanding of older athletes' participation in competitive sports. The body of evidence supports the broader focus of the reviewed studies on motivational factors and the benefits derived from participation in competitive sports in later life (e.g., Dionigi et al., 2011; Gill et al., 1996).

Among studies of participation in competitive sports in later life, personality and emotional factors have received the least attention. In fact, in our review, we found only three studies on this area (e.g., Smith & Storandt, 1997). Since athletes' personality can act as a protective determinant for involvement in competitive sports, appropriate coping strategies and developing resilience can help older athletes to deal with stressors that participation could entail at this stage of the life course. Hence, further research needs to be conducted on how personality influences athletes' decisions to start, rekindle and/or continue the practice of competitive sports in later life (Dionigi, 2015). McAdams' multilayer framework (1995), which proposes three domains of personality (dispositional traits, characteristic adaptations, and narrative identity), could be useful to develop a psychological profile of athletes. As recently demonstrated by Coulter et al. (2017), a holistic approach to personality analysis can lead to a more complete psychological representation of competitors in sports, often identified as being particularly 'mentally tough'.

Among the reviewed studies only one focused on cognitive aspects (Geard et al., 2020). The positive impacts of sport on brain health over the lifespan are well-known in

terms of the creation of routines and stimulation of memory and executive and attentional functions (Williams et al., 2011). Since later life has been associated with a decrease in cognitive abilities, the scope of research on older athletes' participation could be expanded to include this less studied, intrapersonal dimension.

As older athletes' participation in competitive sports is surely shaped by the contexts, considering where participation takes place is essential to enhancing understanding of this phenomenon. Some of the studies included in our scoping review have stressed the importance of sports participation opportunities that a specific environmental context could provide for older people, in terms of access to sports facilities (e.g., West et al., 2019) and participation in competitions (e.g., Heo et al., 2013). Moreover, an emerging body of studies suggests that a sense of community plays an important role in the maintenance of their involvement (e.g., Lyons & Dionigi, 2007). However, as criticized in Jenkin's studies (2016, 2018), the influence of the environmental and community dimension on older athletes' competitive sports participation remains under-researched in the literature. Hence, greater focus should be placed on the environment in which the athlete develops.

Lastly, although governments in many nations have enacted sports participation policies (e.g., the Sport for all Charter; Council of Europe, 1992) and have promoted an active and healthy way of aging (World Health Organization, 2002, 2015), it has been highlighted that the impact of sport policy on the participation of young children and adolescents in competitive sports has been extensively explored (e.g., Eime et al., 2013). In the scoping review, we identified only eight of the fifty-nine empirical studies that addressed policy aspects of competitive sports participation in later life (e.g., Naar et al., 2017). Hence, a more consistent body of evidence is needed, which could be the basis for public policy decision-making about sports for the older population.

Methodological gaps

The evolution of competitive athletes' participation during their sports career, as well as critical professional transitions (Park et al., 2013), are topics largely unexplored in the literature. Although the acquisition of sporting habits in youth may be a factor that determines the participation of athletes in sport throughout their lives, there is no uniformity in competitive sports careers. As Dionigi et al. (2015) propose, we can distinguish three categories of athletes: those who continue practicing sport during their lives (continuers), those who, after a period of rest, restart sports participation (re-kindlers) and those who initiate the practice of competitive sports in adulthood, usually after retirement (late starters). A more systematic specification of the patterns of participation in competitive sports across athletes' lifespans could provide more complete information for understanding the phenomenon and could have practical implications, in terms of community interventions for those who are already active in sports, those who might be considering taking up sports for the first time, or those who might be encouraged to resume sports participation.

Hence, a change in methodological design would be useful in the general literature. In our scoping review, most empirical studies adopted a cross-sectional design. There was only one longitudinal research design study (Hirvensalo et al., 2000). To allow researchers to examine changes in athletes over time, future research should extend beyond the current predominant use of cross-section methods to a longitudinal design.

Diversity

If we approach the phenomenon of competitive participation in later life from the domains of the socioecological model, we find considerable diversity in the group of older athletes. Depending on personal characteristics as well as the socio-geographic context in which participants live, the form of participation of older athletes in competitive sports may vary.

Regarding personal characteristics, variables such as age, gender and type of sport may influence participation. It is well-known that age, that is, where a person is in his or her lifespan development, can make a difference in relation to the barriers and motivators that athletes face. In our scoping review, most studies focused on a wide, indiscriminate age range of athletes (that is, 50 to 101 years). We can assume that later life is not a uniform sum of years, so, as also suggested by Appleby and Dieffenbach (2016), future researchers should stratify age groups and investigate the unique influences on athletes during each age range over time. Secondly, few studies (e.g., Helsen et al., 2020) analyze the gender variable as a differential factor in the participation of athletes and compare, for example, male and female athletes in aspects that go beyond athletic performance, such as interpersonal factors and social expectations. Finally, very few articles (e.g., Medic et al., 2009) compare types of sports disciplines. In fact, most of the studies reviewed in this work were based on data collected from national and international events that cover many sports disciplines. In these studies, general involvement in the sporting event was assessed, without considering the type of sport (individual or team sports). For example, it has been widely noted (e.g., Kirby & Kludge, 2013; West et al., 2019; Wong et al., 2018) that the social nature of team sports fosters prosocial behavior and a sense of community among athletes, which in turn promotes their longer-term adherence to sports. Hence, a possible avenue for future research would be to try to measure the effect of these variables, which might be useful for the development of intervention programs tailored for older adults (Anders et al., 2018).

Regarding socio-geographic context, while most research reviewed in our study was conducted using US, Canadian and Australian samples, other nations and world regions were clearly underrepresented, if not absent. As highlighted by Park et al. (2013), the investigation of cultural, environmental and geographical diversity could help to test the generality and validity of existing knowledge and may have practical implications in public sports policies

on older athletes' participation in competitive sports. Thus, there is a need for more evidence drawn from other countries, and especially for further cross-national comparative studies to better understand similarities and differences in competitive sports participation across diverse geographic and social contexts.

Limitations and conclusions

Several limitations should be considered in the interpretation of this study's results. First, the review focuses on literature published in English and in peer-reviewed journals. This might have influenced the sample characteristics (e.g. the location of the study) and led to the omission of relevant literature published in other languages and/or formats that may be potentially significant (e.g., books and chapters). Secondly, while the search strategy was created thoughtfully in consultation with an expert research librarian, the chosen search string may have limited the findings that emerged through various search engines. Moreover, the lack of quality assessment of the studies may be perceived as a limitation of our scoping review frameworks. Since this scoping review was aimed at broad summaries of an area of research, space limitations have precluded a more detailed presentation of results from the narrative content analysis. Finally, although studies focused on volunteers (e.g., Lee & Kim, 2018), coaches (e.g., Ronkainen et al., 2019), or healthcare professionals (e.g., Schutzer & Graves, 2003) were excluded, we consider this emerging area worthy of further research. For example, some studies (e.g., Kirby & Kludge, 2013) have identified the role of the university (including students, faculty staff and volunteers) as a crucial resource for providing environmental and interpersonal support for community-dwelling older adults. Hence, a better understanding of this area could foster innovative approaches such as intergenerational opportunities with younger cohorts and partnering with organizations within the community (e.g., Dionigi & Lyons, 2010).

Notwithstanding these issues, this is, to the best of our knowledge, the first scoping review to address psychosocial aspects of Seniors athletes' competitive sports participation. The review confirms the key role of competitive sports participation as a way for older people to keep active and socially involved. By thematically synthesizing findings from selected studies, our scoping review provides original contributions on the body of research. Given the gaps identified in this work, there is a need for more research to advance conceptual and methodological understanding of the multidimensional nature of older people's participation in competitive sports. Our findings can provide guidance to both academic and policy fields on how to reinforce older adults' participation in competitive sports. Any practical implementations, related to specific programs tailored for older competitors, should consider the psychosocial determinants broadly and include all domains of the socioecological model, to ensure a holistic, multilayered approach to the phenomenon.

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Figure 1

Study selection flow diagram

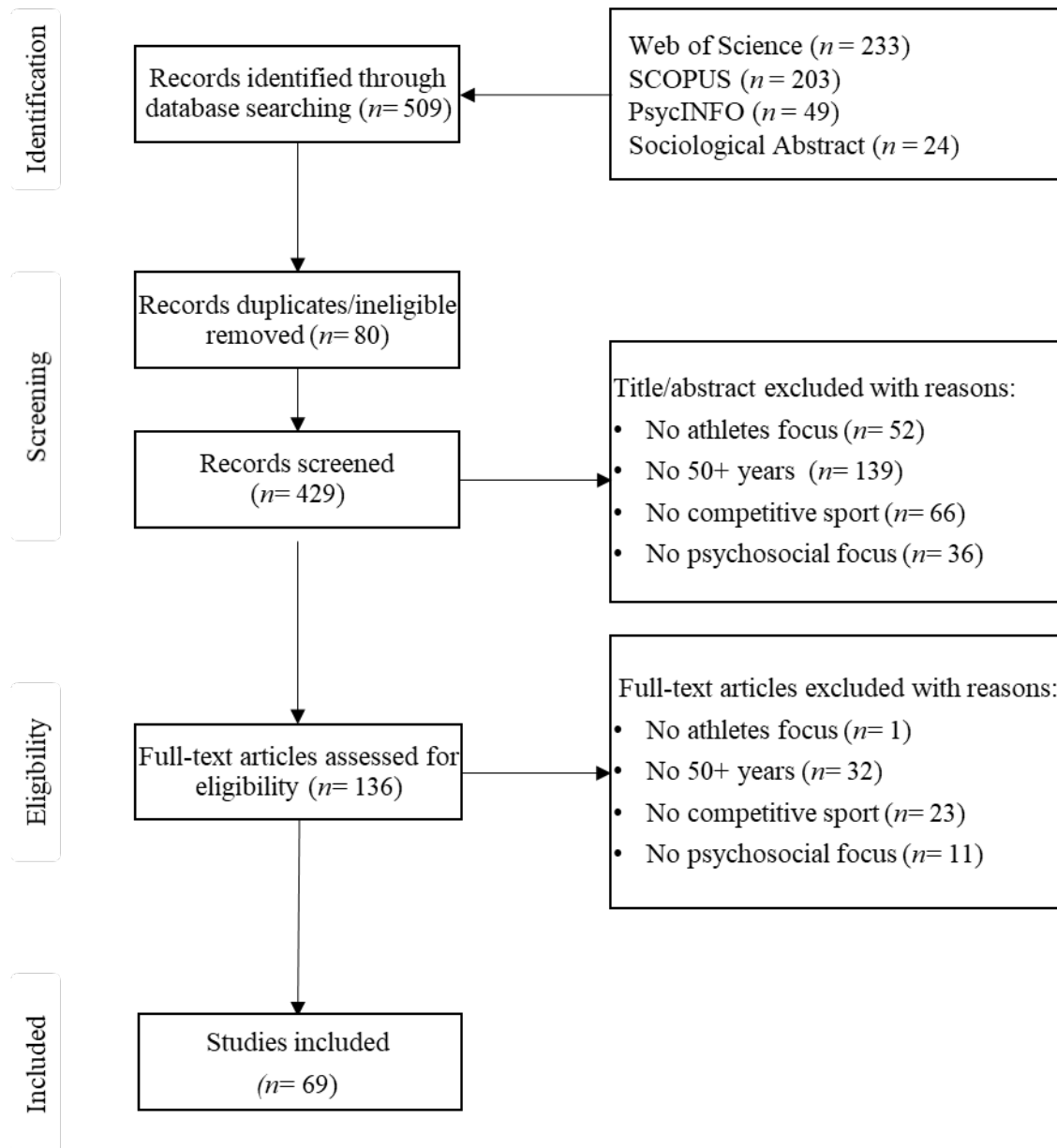


Figure 2

Number of publications on older people's participation in competitive sports. Period 1994–2020 (N = 69)

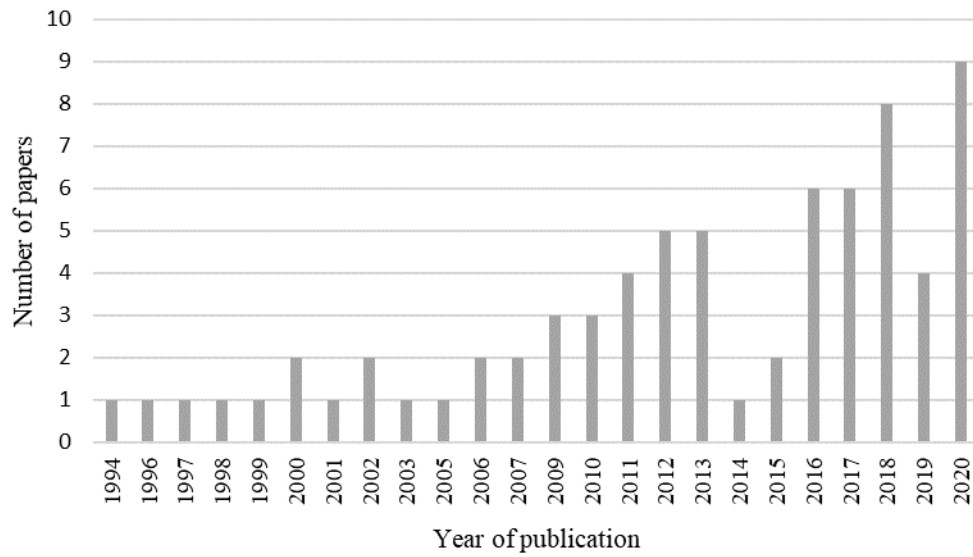


Table 1

Empirical papers' key methodological, sample and sports participation characteristics (in frequencies and percentages), (N= 59)

Characteristic	<i>n</i>	%
Approach		
Qualitative	37	62,7%
Quantitative	19	32,2%
Mixed	3	5,1%
Research design		
Cross-sectional	58	98,3%
Longitudinal	1	1,7%
Data collection		
Questionnaire	18	30,5%
Interviews and observations	25	42,4%
Archived records data	4	6,8%
Focus group	7	11,9%
Others	5	8,5%
Type of data		
Primary data	55	93,2%
Secondary data	4	6,8%
Sample country ^a		
North America	38	64,4%
Oceania	27	45,8%
Europe	11	18,6%
Asia	4	6,8%
Gender distribution of the sample		
Mixed	46	78,0%
Only women	8	13,6%
Only men	5	8,5%
Age distribution of the sample		
Only ≥ 50 years	55	93,2%
Including < 50 years	4	6,8%
Level of sports participation		
Just competitive	49	83,1%
Including recreational	10	16,9%
Data collected in sporting events		
Yes	36	61,0%
No	23	39,0%
Typology of sports ^a		
Athletics	30	50,8%
Racquet sports	27	45,8%
Water sports	24	40,7%
Cycling	21	35,6%
Bat and ball games	19	32,2%
Ball games	17	28,8%
Stick games	10	16,9%
Triathlon	5	8,5%

Note. ^aThe sum of categories' frequencies may exceed the total number of papers as a same paper could be classified in more than one category.

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	3
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	4,5,6,7
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	7,8
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	8,9
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	7,8
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	8
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	9
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	9,10
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	10
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	10

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	10,36
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	11-13,38
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	13-18
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	10-13
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	18,19
Limitations	20	Discuss the limitations of the scoping review process.	23
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	24
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	2

JB1 = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

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