Transl. exerc. biomed. 2025; 2(3): 178–187 DE GRUYTER

Original Research Article

Ishan Paranjape, Alyson Crozier, Michelle Guerin and Brad J. Stenner*

Walking sports and subjective wellbeing in older adults: a comparative study

https://doi.org/10.1515/teb-2025-0021
Received May 30, 2025; accepted August 26, 2025;
published online September 5, 2025

Abstract

Objectives: Walking sports, whereby traditional disciplines of sport modify gameplay by limiting physical activity to walking only, may offer benefits for physical activity engagement and subjective wellbeing outcomes in older adults. Questionnaires were used to collect physical activity and health related data from a cross section of older South Australian walking sports participants (n=56), which was compared to a population-based sample of their peers (n=1817) to explore these potential benefits.
Methods: Ordinal logistic regression and linear regression were used for between-group comparisons across three subgroups of participants, who reported engaging in: (1) walking sports, (2) traditional sports, and (3) no sport. All analyses were adjusted for age, marital status, education and employment status.
Results: Compared to walking sports participants, those who did not participate in sports were more than twice as likely to report poorer self-rated health. Walking sports and traditional sports participants reported meeting the minimum weekly physical activity requirements. No significant differences in subjective wellbeing were found between the three participant subgroups.
Conclusions: Older adults who participated in walking sports had significantly higher self-rated health and physical activity levels, than those not involved in sports. Therefore, sport organisations should consider offering walking sports programs to engage older adults who face barriers to engaging in traditional sports, supporting their continued involvement in physical activity.

Keywords: psychological benefits; exercise; older adults; adapted sport; wellbeing

***Corresponding author: Dr. Brad J. Stenner**, Alliance for Research in Exercise, Nutrition and Activity (ARENA), University of South Australia, GPO Box 2491, Adelaide, 5001, South Australia, Australia; and Allied Health and Human Performance, University of South Australia, GPO Box 2491, Adelaide, 5001, South Australia, Australia, E-mail: brad.stenner@unisa.edu.au. https://orcid.org/0000-0003-1996-1613
Ishan Paranjape and Michelle Guerin, Allied Health and Human Performance, University of South Australia, Adelaide, Australia. https://orcid.org/0000-0001-8695-4558 (M. Guerin)
Alyson Crozier, Allied Health and Human Performance, University of South Australia, Adelaide, Australia; and Alliance for Research in Exercise, Nutrition and Activity (ARENA), University of South Australia, Adelaide, Australia. https://orcid.org/0000-0002-9652-6757

Introduction

It is well known that insufficient physical activity and excess sedentary behaviour has a significant impact on health and wellbeing [1-3]. In Australia, 2.5 % of the total disease burden is a result of physical inactivity and in turn accounts for 10–20 % of the individual disease burden for diabetes, certain cancers, dementia, stroke, and coronary artery disease [4]. Through sufficient regular physical activity, people can delay or prevent the occurrence of disease, enhance their quality of life, promote healthy ageing, and delay cognitive decline [1, 5]. The health benefits of physical activity also play a vital role in preventing high healthcare costs associated with ageing, thereby reducing the economic burden on the nation's economy [6, 7].

The World Health Organization (WHO) [1] physical activity guidelines recommend that adults aged 55 years and above (herein called older adults) engage in at least 150–300 min of moderate-intensity or 75–150 min of vigorous-intensity physical activity per week. The rate of physical inactivity increases with age, with only 45 % of female and 43 % of male older adults meeting these guidelines in Australia [8]. These low rates are likely related to some of the barriers associated with physical activity as people age, such as physical limitations due to comorbidities, fear of falls, risk of injury, lack of guidance and support, as well as feelings of embarrassment and intimidation [9].

Sport-based interventions are a popular avenue to encourage older adults to meet physical activity guidelines [10–12]. Adults participating in sports are more likely to achieve the physical activity guidelines than those not involved in any sports [13–16]. In addition to improving physical health, taking part in sports also helps older adults to build social relationships, participate in sports they previously enjoyed playing and ignite the competitive spirit and love for the game [12, 17]. Unfortunately, sports participation rates within the adult population decrease with age. While over 50 % of Australian's aged 15–24 years old play sport at least once per week, less than 30 % of those aged 65+ years old participate regularly [18]. While the reasons for decline in participation is multifaceted, sporting organisations tend to target, promote, and prioritise sport programs for younger age groups, and age and physical limitations that may prevent or reduce ability to engage in sport make it more difficult for older adults to participate [19].

To encourage older adults to continue participating in sports and remain physically active, adapted sports programs have gained in popularity [20]. Adapted sports are essentially a variation of typical sports that makes them more suitable for older adults' participation by reducing physical or cognitive demands of the activity. A promising form of adapted sports is adapted walking team sports (herein called walking sports), where there are decreased physical demands as participants walk (instead of run) and a modification of rules entails minimal contact [17, 21]. In Australia, sporting codes have started providing walking sports programs in Australian Rules Football, netball, basketball, as well as other sports such as (field) hockey, soccer, and cricket through local sporting clubs.

From a physiological perspective, walking sports may be considered a moderate-to-vigorous physical activity among older adults [22], and those playing walking sports experience positive physiological health benefits [23]. The longitudinal impacts of walking sports participation include reduced body fat mass [24], greater bone mineral density [25] and increased cardiovascular fitness along with better glucose control [26].

Whilst there is evidence that walking sports can benefit older adults' physiological health, less research has explored the psychological and social benefits of walking sports on mental health. Participants of walking sports programs have identified that participation has played an important role in helping to improve their confidence and build social connections [27]. Further, Cholerton et al. [27] found that the key factors (motivators) influencing older adults to continue participating in walking sports were maintaining physical health, enjoyment of competition and the game itself, and the social connections established through participation, with more recent research suggesting fun and enjoyment continue to be the main drivers of walking sport participation [28].

Despite these initial studies exploring the subjective benefits of walking sports, the relationship between participation in walking sports and participant's subjective wellbeing and self-reported health using quantitative measures has not been examined. In addition, research to date has not compared the benefits of walking sports participation with non-participation among a general population of older adults. Therefore, the aim of this study was to compare the physical activity levels, subjective wellbeing, and self-rated health, of older adults that engage in walking sports compared to non-participants. The summary of this article is presented in Figure 1.

Materials and methods

Study design

This study was approved by the University of South Australia Human Research Ethics Committee (protocol number 204824) and Department of Health and Wellbeing Human Research Ethics (2020/HRE00418).

All eligible participants provided informed consent, and the survey was anonymous to allow for the confidentiality of responses from the participants. A quantitative, cross-sectional survey method was used in this study, which occurred across two stages (see Figure 2.

Stage 1: Data were obtained from walking sports participants in South Australia from October to December 2022. Convenience sampling was employed to recruit participants from different team-based walking sports programs across Adelaide, South Australia, including walking netball, walking football, walking soccer and walking (field) hockey. Inclusion criteria required participants to be aged 55 years and above and be participating in any team-based adapted walking sports for at least one month. Participants who were not able to independently complete an online survey, had not played walking sports for at least a month, and had an existing injury due to the walking sports were excluded from participating in the study.

To recruit participants, an email was sent to a list of sporting organisations where walking sports programs in South Australia were identified. A total of 10 sporting orgnisations/sporting bodies (including Walking Football, Netball, Basketball, Hockey and recreation centres who hosted sports competition, as well as a state government department) were contacted via email in the first instance. Four (4) of these organisations responded and site visits were made to programs that responded, where a general summary of the research study was provided to walking sport participants. Interested participants read a participant information sheet and provided informed consent. The survey was completed by participants using REDCap software [29] for the purposes of secure collection and storage of data, and it took approximately 10 min to complete.

Figure 1: Graphical representation of this study. Key points: (1) walking sport are variations of traditional sports to encourage participation. (2) Objectives of this study were to compare physical activity levels, subjective welling and self-rated health of older adults who participation in walking sports with non-participants. (3) walking sport participants were more physical active and had higher levels of self-rated health compared to non-sport participants, but no different from traditional sport participants. Figure created with BioRender.

Stage 2: The data collection process involved accessing a general population dataset. Participant data were obtained by accessing the Population Health Survey Module System (PHSMS; Active Lives Survey), which is an omni-bus type service managed by SA Health and supports the collection of population health data regarding the health and wellbeing of the South Australian community. Specifically, the Office of Recreation, Sport and Racing, a state-based government organisation that plays a vital role in the development of policy, programs and resources on sport and active recreation, commissioned the collection of health and wellbeing data in relation to recreational physical activity participation among a representative South Australian sample of 3,000 adults in 2019. Only participants aged 55 and above from the PHSMS; Active Lives Survey dataset were included in the current study.

Measures

Demographics: All participants provided their demographics including age, gender, marital status, education status,

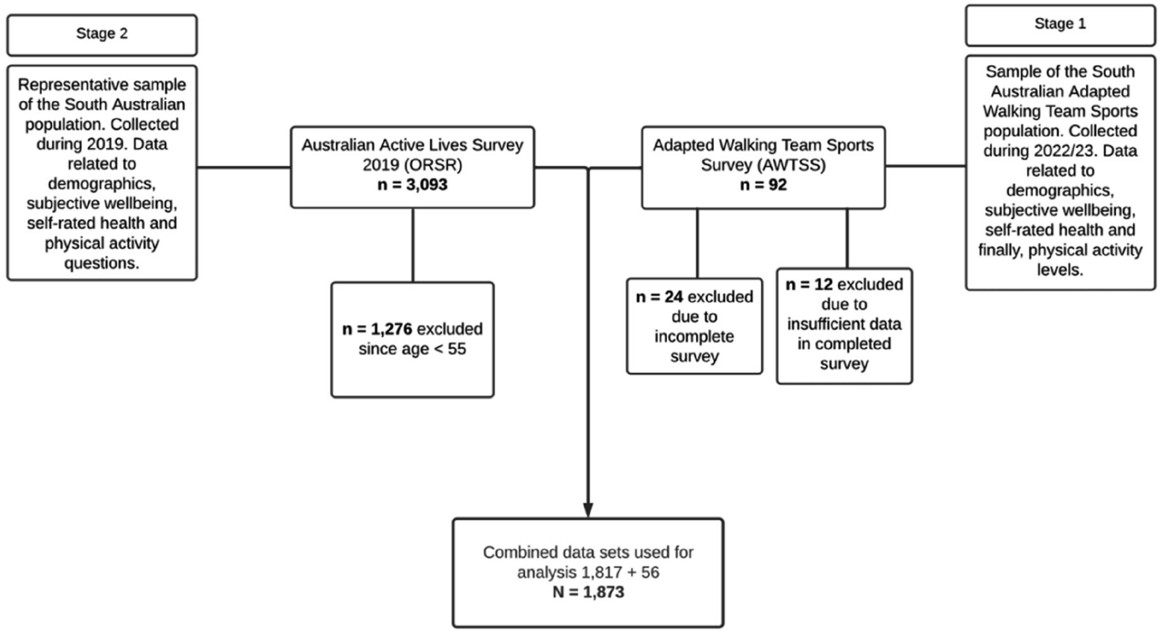

Figure 2: Summary of methods.

employment status and Indigenous status. Participants from Stage 1 also identified the type of adapted walking sports they participated in and the duration of participation.

Self-rated health: To assess participants' perception of their general health, self-reported health status was measured using a single question from the Short-Form 36 (SF36) questionnaire [30]. The question asked participants, "In general, would you say your health is…" and they were asked to choose one of "excellent", "good", "fair", or "poor"?". This measure has been shown to correlate with other health outcomes, including mortality and wellbeing [31].

Subjective wellbeing: Four questions were used to evaluate subjective wellbeing. To assess life satisfaction, participants were asked, "Overall, how satisfied are you with life nowadays?". Participants were also asked, "Overall, how happy did you feel yesterday?" and "Overall, how anxious did you feel yesterday?" to assess positive and negative affect, respectively. Finally, eudemonic wellbeing was assessed by asking participants, "Overall, to what extent do you feel the things you do in your life are worthwhile?". Responses were provided on an 11-point Likert scale, where 0 = "not at all" and 10 = "completely".

Physical activity: Using items originally developed by Sport England for their Active Lives UK survey, physical activity was measured by asking participants different questions relating to the type of physical activity they engage in, how many times they participate each week/month, as well as the length of participation. To identify the types of activities engaged in, participants were asked, "In the last 12 months have you done any of these activities?", with response options including walking, cycling, dancing, sports (individual and team) and other recreational fitness activities such as jogging, swimming, trail running, surfing, and adventure activities. For each activity engaged in, participants self-reported both the frequency and duration of the reported activity in hours and minutes, from which new variables of physical activity (mins) were created.

Data analysis

Based on participants responses to the physical activity 'type' questions, participants were categorised into one of the three 'sport' subgroups: (1) those recruited in Stage 1 were categorised into the 'walking sports' group, whereas those from Stage 2 were categorised into either, (2) the 'traditional sports' group if they reported participating in any traditional sport offering (e.g., football, basketball, soccer), or (3) 'no sports' group, if they did not report participating in any sports. These three groups were considered the independent variable (factor) during the analysis. Descriptive statistics were used to describe the overall sample and each of the three groups.

To identify any potential confounding variables, a correlation analysis was performed to identify any relationships between all variables. Generalised linear modelling was used to examine relationships between sports participation and self-rated health or subjective.

Wellbeing. For self-rated health (considered a categorical variable), ordinal logistic regression was used; whereas the subjective wellbeing and the physical activity variables (considered continuous variables) were analysed using linear regression. All analyses were adjusted for age, marital status, employment status and education status, with p<0.05. A one-way ANOVA was performed to investigate between-group differences amongst the independent variables in terms of the population demographics and measures, using post-hoc adjustments (Bonferroni) for multiple comparisons. All analyses were completed in IBM SPSS Statistics (Version 28) predictive analytics software.

Results

Participants

For Stage 1, a total of 92 participants accessed the survey platform. Thirty-six participants provided insufficient data for the analyses (e.g., completed data relevant for the independent or dependent variable, but not the other), leaving a total of 56 walking sport participants. In Stage 2, though 3,093 South Australian adults participated in the population-wide survey, after removing participants who were not 55 years of age or above, 1817 older adults were included in the final sample. Therefore, the final merged data set consisted of 1873 participants, with 56 participants engaged in walking sports, 101 engaged in traditional sports, and 1716 engaged in no sports.

Demographics. For walking sport participants, 50 % of participants engaged in walking netball (n=28), walking soccer (n=16), walking Australian Rules Football (n=11), and walking hockey (n=1) (Table 1). In regard to the merged sample, the mean age of all participants was 67.8 ± 8.4 years, with 57.6 % of the sample identifying as female (Table 2). In addition, 54.7 % of the total participants were married. Compared to other groups, individuals participating in walking sports had the highest percentage holding a tertiary degree (35.7 %). Concerning employment status, most participants in each group were retired, with a larger proportion (71.4 %) participating in walking sports being fully retired. Full-time employment was somewhat lower among participants in walking sports (12.5 %) compared to other groups.

Table 1: Demographic data of study population.

Variable	Total participants n=1873	Walking sports n=56	Traditional sports n=101	No sports n=1716
Age, mean)	67.8 ± 8.4	65.8 ± 6.2	69.1 ± 8.3	67.7 ± 8.4
Sex (% of population)				
Male	794 (42.4)	22 (39.3)	51 (50.5)	722 (42.1)
Female	1,078 (57.6)	34 (60.7)	50 (49.5)	994 (57.9)
Marital status (% of population)				
Married	54.7	57.1	66.3	54.0
Living with a partner	6.0	7.1	2.0	6.2
Separated	4.3	19.6	2.0	3.9
Divorced	14.3	3.6	9.9	14.9
Widowed	13.9	7.1	14.9	14.1
Never married	5.6	5.4	4.0	5.7
Prefer not to say	1.2	0.0	1.0	1.2
Education status (% of population)				
Primary school	2.4	0.0	0.9	2.6
High school	40.2	23.3	43.6	40.5
TAFE, trade or certificate	16.0	23.2	11.9	16.0
Diploma/ Advanced diploma	11.8	17.9	14.9	11.4
Tertiary degree	29.2	35.7	28.7	29.0
Prefer not to say	0.4	0.0	0.0	0.5
Employment status (% of population)				
Full-time employed	18.8	12.5	18.8	19.1
Part-time employed	10.4	8.9	9.9	10.4
Casual	4.4	0.0	4.0	4.5
Unemployed	3.2	1.8	1.0	3.4
Engaged in home duties	1.7	5.4	0.9	1.6
Student	0.2	0.0	0.0	0.2
Retired	54.4	71.4	56.4	53.7
Unable to work	3.5	0.0	3.0	3.7
Other (specify)	0.1	0.0	6.0	3.4
Indigenous status (% of population)				
No	98.3	98.2	100	98.2
Aboriginal/ Torres strait islander	1.1	1.8	0.0	1.2
Prefer not to say	0.6	0.0	0.0	0.6

Data represented as Mean (SD), or count (%) where indicated.

Main findings

Physical activity. Those who participated in walking sports (256.8 ± 245.4mins) and traditional sports (231.5 ± 365.5mins) were more likely to report meeting the minimum 150 min of moderate-intensity physical activity weekly compared to the no sports participants (106.1 ± 233mins). See Table 2.

Table 2: Results: self-rated health, subjective wellbeing, and physical activity.

Outcome measures	Walking sports n=56	Traditional sports n=101	No sport n=1716
Self-rated health (% of population)			
Excellent	16.1[a]	16.8[c]	11.1
Very good	41.1[a]	39.6[c]	29.0
Good	33.9[a]	27.7[c]	31.6
Fair	8.9	13.9[c]	19.5
Poor	0	2.0[c]	8.4
Don't know	0	0	0.3
Prefer not to say	0	0	0.1
Subjective wellbeing, mean)			
Life satisfaction	7.7 ± 1.6	8.2 ± 1.4	7.6 ± 1.9
Life worth	8.0 ± 1.5	8.6 ± 1.2	8.2 ± 1.8
Happiness	7.8 ± 2.2	8.2 ± 1.8	7.7 ± 2.1
Anxiety	2.7 ± 2.5	2.0 ± 2.8	2.4 ± 2.9
Physical activity, mins)	256.8 ± 245.4[b]	231.5 ± 365.5[b]	106.1 ± 233

Data represented as Mean (SD), or count (%) where indicated, obtained via One-way ANOVA. Physical Activity is reported as average minutes per week. [a]p<0.05, significant difference between walking sports and no sports. [b]p<0.05, significant difference between walking sports and no sports, and traditional sports and no sports, No difference between walking sports and traditional sports, [c]p<0.05, significant difference between traditional sports and no sports.

Self-rated health. Participants who played walking sports were more likely to rate their health as "good", "very good" or "excellent" compared to participants who played no sports (Table 2). When compared to walking sports participants, people who played no sports were 2.08 (95 % CI:1.31, 3.30; p=0.002) times more likely to report poorer self-rated health (Table 3).

Subjective wellbeing. There were no significant between-group mean differences for life satisfaction, life worth, happiness and anxiety (Table 4).

Discussion

Over the past few years, walking sports popularity among older adults has increased, capturing greater research attention on a global scale [20]. This current study aimed to compare the subjective wellbeing, self-rated health, and physical activity levels of walking sport participants compared to non-participants. As such, walking sports participants were specifically recruited to complete a short survey, and their responses were compared to a representative sample of South Australian older adults.

Participants who did not play sports were more than twice as likely to report poorer self-rated health compared to the walking sports group. This finding aligns with previous research demonstrating positive associations between physical activity [32–34] and sport [35] with self-rated health. Notably, there was no difference in self-rated health between those who played traditional sports and those who participated in walking sports. The results might suggest that walking sports may provide an effective, lower impact alternative for older adults seeking to enhance their perceived health while potentially reducing barriers such as injury risk or physical limitations associated with traditional

Table 3: Odds ratio of reporting poorer self-rated health.

Outcome measure	Unadjusted odds ratio	Adjusted odds ratio
Self-rated health		
Walking sports	Reference	Reference
Traditional sports	1.10 (0.62, 1.94)	1.20 (0.67, 2.18)
No sports	2.08 (1.31, 3.30)[a]	2.16 (1.34, 3.49)[a]

Data represented as OR (95 % CI), obtained through logistic regression. Adjusted odds ratio included covariates of age, marital status, employment status and education status. [a]p<0.05.

Table 4: Between group mean differences of subjective wellbeing and physical activity.

Outcome measure	Unadjusted mean difference	Adjusted mean difference
Life satisfaction		
Walking sports	Reference	Reference
Traditional sports	0.48 (−0.14, 1.09)	0.43 (−0.16, 1.02)
No sports	−0.19 (−0.69, 0.32)	−0.11 (−0.59, 0.38)
Life worth		
Walking sports	Reference	Reference
Traditional sports	0.47 (−0.11, 1.06)	0.37 (−0.21, 0.94)
No sports	0.04 (−0.44, 0.52)	0.04 (−0.43, 0.59)
Happiness		
Walking sports	Reference	Reference
Traditional sports	0.40 (−0.30, 1.10)	0.30 (0.35, −0.38)
No sports	−0.07 (−0.63, 0.51)	0.00 (−0.57, 0.56)
Anxiety		
Walking sports	Reference	Reference
Traditional sports	−0.72 (−1.65, 0.21)	−0.77 (−1.70, 0.17)
No sports	−0.31 (−1.08, 0.45)	−0.42 (−1.19, 0.34)
Physical activity		
Walking sports	Reference	Reference
Traditional sports	−44.44 (−113.66, 24.79)	−26.16 (−95.70, 43.49)
No sports	−158.57 (−214.99, −102.15)[a]	−147.14 (−203.97, −90.30)[a]

Data represented as mean differences with 95 % CI, obtained via One-way ANOVA., Adjusted models include the covariates of age, marital status, employment status and education status. [a]p<0.05.

sports. However, as the data used within this present study are cross sectional, any links between playing sports and wellbeing are limited to associations, with no causal relationship claimed. It is acknowledged that the relationship between improved health and wellbeing in those playing sports is more complex than that presented. It may be that participants in the two sports groups are happier and healthier and as a result participate in sports because they are able to, which in turn may improve their perception of health. Likewise, participants who are less healthy, due to a range of other personal and medical factors may not be able to participate in sports in any form, potentially explaining the results. To further understand this phenomena, longitudinal studies with sports used as the intervention are required.

Results suggested that, on average, the walking sports group and traditional sports group had significantly greater physical activity levels compared to those who did not participate in sports. Since walking is classified as a moderate-intensity physical activity [22, 36], these findings suggest that both the participants in walking sports and traditional sports successfully met the moderate-intensity physical activity guidelines. Walking sports may offer a more accessible and inclusive option for individuals who experience barriers to participating in traditional sports offerings. For older adults who are less likely to meet general physical activity levels and are at greater risk of physical ill health as a result, these are significant findings as participation in walking sports has also been associated with lower body fat mass and general physical health benefits [24].

Growing evidence demonstrates that participation in sports is associated with better subjective wellbeing. Gayman et al. [37] found that participation in sports later in life was related to better emotional and social outcomes, compared to those who did not participate in sports. Similarly, Blake et al. [35] found that participation in a modified Australian Rules Football program had a positive association with quality of life in middle aged men. Heo et al. [38, 39] also demonstrated a positive association between older adults' participation in sports and higher levels of life satisfaction. In contrast, this study found that whether or not older adults participated in walking sports did not appear to relate to how satisfied they felt with their lives, their sense of purpose, or how happy or anxious they felt. A possible explanation for the differing results could be the nature of the subjective wellbeing outcome measures, which consisted of single items and may have reduced the sensitivity and reliability of the measure. Further, the measures of subjective wellbeing might not fully capture the complexity of wellbeing, and other measures should be considered in the future to tease out the role of sport participation in subjective wellbeing. Additionally, differences in the target populations and sample characteristics, such as age ranges, health status, and gender, could also explain the discrepancy.

While not a main objective of this study, the data also provided some insight into the types of people that participated in walking sports within South Australia. Compared to traditional sports and non-sport participants, those who played walking sports were of similar age (65.8 ± 6.2 vs. 69.1 ± 8.3 vs. 67.7 ± 8.4years). Previous studies [12, 40] suggest that the participation in walking sports may be negatively influenced by age-related factors such as fear of ageing, risk of injury, social expectations, a lack of knowledge and opportunity. As a result, individuals may be less likely to participate in walking sports as they age, and experience functional decline. Further research is required to explore how to encourage people to continue playing as they age, as walking sports is lower-impact and potentially a more viable option to play than traditional sports as one ages. In regard to gender, a higher percentage of females participated in walking sports (60.7 %) compared to traditional sports (49.5 %) or no sports (57.9 %) groups. This goes against earlier researcher showing that women tend to favour non-sport related physical activity such as recreational walking or going to the gym [41]. Another study found mixed results, suggesting that females were more likely to start playing a sport later in life compared to males, though no clear reason provided [42]. In addition, participants of walking sports group had the highest percentage of individuals holding a tertiary degree, which aligns with research identifying sports participation later in life being positively related to an individual's level of education [43, 44]. However, the smaller sample size of walking sports participants in this study may account for these differing findings, as it may not fully represent the broader population of walking sports participants.

Strengths and limitations

This study contributes to the growing, but limited research on walking sports, being one of the first to explore subjective wellbeing and self-rated health among older adults who participate in walking sports participants, while also comparing them to a population-based sample of older adults. While the population wide survey included a representative sample of the South Australian population using rigorous sampling methods, participants for the walking sports group were recruited through convenience sampling from local walking sports programs across Adelaide. Additionally, as contact was made through walking sports groups and recruitment snowballed via this initial contact exact response rates are not available. This method may have introduced bias, affecting the generalisability of the findings to the broader Australian population. Additionally, while we aimed to recruit as many walking sports participants as possible, the sample size may still limit the representativeness of the group. Post hoc power calculations (using between group differences in life satisfaction: Table 2 M 8.2 ± 1.4 vs. M 7.7 (n=56), Alpha 0.05, 1-β=76.2 %) suggest this study may be underpowered to detect differences between groups; therefore, results should be interpreted with caution. Further studies with a larger sample size of walking sports participants should be conducted to confirm the findings of this study.

Walking sports is generally promoted as a sport for all; however, promotion of adapted walking sports programs is often aimed at older adults and people with disability. The walking sports data collected in this study did not provide evidence of a diverse population. The sample did not include participants with physical or cognitive limitations and was restricted to the Adelaide metropolitan area. Similarly, there were no data available on medical status of the participants. As such, we employed broad inclusion criteria, and no participants were excluded as a result of medical conditions. This is a limitation of the study, in that some participants may be living with medical conditions that prevent participation in any sport, walking or traditional and these conditions have a significant impact on health and wellbeing. Future studies should ensure that data regarding medical status and impact on participation is collected. In addition, there was no way to determine if participants within the PHSMS Active Lives dataset engaged in walking sports (only that they participated in either team or individual-level sport), as this level of detail was not available. It may be that some walking sports participants completed the Active Lives survey, and these data were included in the analysis phase. Given the random nature and size of the Active Lives survey, and relatively low participation rates in walking sports, the impact of such a small proportion of walking sports participants is negligible.

The cross-sectional design of this study meant that the data was collected at a single point in time and no cause-and-effect relationships can be inferred. The measures used in the survey were all self-report measures, due to which response bias could have been potentially present where participants reported inaccurate or false answers in the surveys completed [45]. However, to mitigate this potential limitation, participation was anonymous, and participants were asked to complete the survey independently, without help from external people.

Practical implications & future directions

The study provides preliminary evidence that participation in walking sports is associated with higher levels of self-rated health and greater physical activity levels in older adults compared to those not participating in any sport. These findings could help promote walking sports as an effective form of physical activity for older adults and guide sporting organisations, community centres, and fitness programs in designing and promoting adapted team sports that are more accessible to a wider range of people, while highlighting the additional benefits of participation. Walking team sports programs could also be integrated by policymakers in health promotional campaigns to promote public health and active lifestyles. Future research should include longitudinal studies to explore the psychosocial impacts of participating in walking sports among older adults. Undertaking randomized control trials could also further help establish a cause-and-effect relationship between playing walking sports and self-rated health and subjective wellbeing.

Conclusions

Overall, this study highlights the potential role walking sports can play in supporting active and healthy ageing. By identifying walking sports as an alternative to more traditional sports for achieving physical activity recommendations and positive perceived health, walking sports are a promising avenue to expand older adult sports participation. Having more sport organisations delivering walking sports programs will be a key avenue for researchers and policymakers to explore to maximize reach and impact. Future implementation should include longitudinal evaluation programs with non-active older adults as a control group and include larger numbers to allow for group and subgroup analysis.

Research ethics: This study was approved by the University of South Australia Human Ethics Research Committee (protocol number 204842) and Department of Health and Wellbeing Human Research Ethics (protocol number 2020/HRE00418).
Informed consent: Informed consent was obtained from all individuals included in this study, or their legal guardians or wards.
Author contributions: All authors have accepted responsibility for the entire content of this manuscript and approved its submission.

Use of Large Language Models, AI and Machine Learning Tools: None declared.

Conflict of interest: All other authors state no conflict of interest.

Research funding: None declared.

Data availability: Not applicable.

References

1. Bull FC, Al-Ansari SS, Biddle S, Borodulin K, Buman M, Cardon G, et al. World health organization 2020 guidelines on physical activity and sedentary behaviour. Br J Sports Med 2020;54:1451–62.
2. Kohl HW, Craig CL, Lambert EV, Inoue S, Alkandari JR, Leetongin G, et al. The pandemic of physical inactivity: global action for public health. Lancet 2012;380:294–305.
3. Thivel D, Tremblay A, Genin PM, Panahi S, Rivière D, Duclos M. Physical activity, inactivity, and sedentary behaviors: definitions and implications in occupational health. Front Public Health 2018;6:288.
4. Australian Institute for Health and Welfare. Australian burden of disease study 2015: interactive data on risk factor burden. Canberra Australia: Australian Government; 2020.
5. World Health Organization. Global recommendations on physical activity for health. Geneva Switzerland: World Health Organization; 2010.
6. Dallmeyer S, Wicker P, Breuer C. The relationship between physical activity and out-of-pocket health care costs of the elderly in Europe. Eur J Publ Health 2020;30:628–32.
7. Nguyen P, Ananthapavan J, Tan EJ, Crosland P, Bowe SJ, Gao L, et al. Modelling the potential health and economic benefits of reducing population sitting time in Australia. Int J Behav Nutr Phys Activ 2022;19: 1–12.
8. Australian Institute for Health and Welfare. Australia's health 2018. Canberra Australia: Australian Government; 2018.
9. Bethancourt HJ, Rosenberg DE, Beatty T, Arterburn DE. Barriers to and facilitators of physical activity program use among older adults. Clin Med Res 2014;12:10–20.
10. Langhammer B, Bergland A, Rydwik E. The importance of physical activity exercise among older people. BioMed Res Int;2018. Article ID 7856823 https://doi.org/10.1155/2018/7856823.
11. Baker J, Fraser-Thomas J, Dionigi RA, Horton S. Sport participation and positive development in older persons. Eur Rev Aging Phys Act 2010;7: 3–12.
12. Jenkin CR, Eime RM, Westerbeek H, van Uffelen JG. Sport for adults aged 50+ years: participation benefits and barriers. J Aging Phys Activ 2018;26:363–71.
13. Eime RM, Harvey JT, Brown WJ, Payne WR. Does sports club participation contribute to health-related quality of life. Med Sci Sports Exerc 2010;42:1022–8.
14. Stenner B, Mosewich AD, Buckley JD, Buckley ES. Associations between markers of health and playing golf in an Australian population. BMJ Open Sport Exerc Med 2019;5:e000517.
15. Malm C, Jakobsson J, Isaksson A. Physical activity and sports—real health benefits: a review with insight into the public health of Sweden. Sports 2019;7:127.
16. Watts P, Webb E, Netuveli G. The role of sports clubs in helping older people to stay active and prevent frailty: a longitudinal mediation analysis. Int J Behav Nutr Phys Activ 2017;14:1–9.
17. Cholerton R, Quirk H, Breckon J, Butt J. Experiences and strategies influencing older adults to continue playing walking football. J Aging Phys Activ 2021;29:573–85.
18. Australian Sports Commission. National sport and physical activity participation report. AusPlay. 2023. Canberra Australia: Australian Government.
19. Jenkin CR, Eime RM, Westerbeek H, O'Sullivan G, van Uffelen JGZ. Sport and ageing: a systematic review of the determinants and trends of participation in sport for older adults. BMC Public Health 2017;17: 976.
20. Liu T, Wassell N, Liu J, Zhang M. Mapping research trends of adapted sport from 2001 to 2020: a bibliometric analysis. Int J Environ Res Publ Health 2022;19:12644.
21. Aiello CR, Canalella A, Altieri D. Sport as a strategy for preventing physical inactivity: walking football. Euromediterr Biomed J 2016;11: 176–80.
22. Ainsworth BE, Haskell WL, Herrmann SD, Meckes N, Bassett DR, Tudo-Locke C, et al. 2011 Compendium of physical activities: a second update of codes and MET values. Med Sci Sports Exerc. 2011;43:1575-81.
23. Harper LD, Field A, Corr LD, Naughton RJ. The physiological, physical, and biomechanical demands of walking football: implications for exercise prescription and future research in older adults. J Aging Phys Activ 2019;28:478–88.
24. Arnold JT, Bruce-Low S, Sammut L. The impact of 12 weeks walking football on health and fitness in males over 50 years of age. BMJ Open Sport Exerc Med 2015;1. https://doi.org/10.1136/bmjsem-2015-000048. bmjsem-2015-000048.
25. Helge E, Andersen TR, Schmidt JF, Lorgensen NR, Hornstrup T, Krustrup P, et al. Recreational football improves bone mineral density and bone turnover marker profile in elderly men. Scand J Med Sci Sports 2014;24:98–104.
26. Pedersen MT, Vorup J, Bangsbo J. Effect of a 26-month floorball training on male elderly's cardiovascular fitness, glucose control, body composition, and functional capacity. J Sport Health Sci. 2018;7:149-58.
27. Reddy P, Dias I, Holland C, Campbell N, Nagar I, Connolly L, et al. Walking football as sustainable exercise for older adults–A pilot investigation. Eur J Sport Sci 2017;17:638–45.
28. Petersen JM, Connolly CJ, Lewis LK. Nation-wide cross-sectional study of participation and predictors of enjoyment among Australian adult walking sport participants. Eur J Sport Sci 2025;25: e12246.
29. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. J Biomed Inf 2009;42:377–81.
30. Ware JJE, Sherbourne CD. The MOS 36-item short-form health survey (SF-36): I. Conceptual framework and item selection. Med Care 1992: 473–83. https://doi.org/10.1097/00005650-199206000-00002.
31. Jylhä M. What is self-rated health and why does it predict mortality? Towards a unified conceptual model. Soc Sci Med 2009;69:307–16.
32. Beyer A-K, Wolff JK, Warner LM, Schüz B, Wurm S. The role of physical activity in the relationship between self-perceptions of ageing and self-rated health in older adults. Psychol Health 2015;30:671–85.
33. Li F, Fisher KJ. A multilevel path analysis of the relationship between physical activity and self-rated health in older adults. Phys Act Health 2004;1:398–412.
34. Tsuji T, Kanamori S, Watanabe R, Yokoyama M, Miyaguni Y, Saito M, et al. Types of sports and exercise group participation and sociopsychological health in older adults: a 3-year longitudinal study. Med Sci Sports Exerc 2022;54:1657–64.

35. Blake HT, Buckley JD, Stenner BJ, O'Connor EJ, Burgess SA, Crozier AJ. Sport participation and subjective outcomes of health in middle-aged men: a scoping review. Am J Mens Health 2022;16. https://doi.org/10.1177/15579883221084493. 15579883221084493.
36. MacIntosh BR, Murias JM, Keir DA, Weir JM. What is moderate to vigorous exercise intensity?. Front Physiol 2021:1481.
37. Gayman AM, Fraser-Thomas J, Dionigi RA, Horton S, Baker J. Is sport good for older adults? A systematic review of psychosocial outcomes of older adults' sport participation. Int Rev Sport Exerc Psychol 2017;10:164–85.
38. Heo J, Ryu J, Yang H, Kim ACH, Rhee Y. Importance of playing pickleball for older adults' subjective well-being: a serious leisure perspective. J Posit Psychol 2018;13:67–77.
39. Heo J, Stebbins RA, Kim J, Lee I. Serious leisure, life satisfaction, and health of older adults. Leisure Sci 2013;35:16–32.
40. Chen G, Janke MC, Liechty T, Wong JD, West ST, Son JS, et al. Sport participation for adults aged 50+ years: a socioecological analysis. Int J Aging Hum Dev 2023;97:354–73.
41. Australian Sports Commission. AusPlay - Participation data for the sports sector; 2017. https://www.ausport.gov.au/information/ausplay.
42. Engel C, Nagel S. Sports participation during the life course. Eur J Sport Soc 2011;8:45–63.
43. Davison R, Cowan D. Sports participation and ageing-influence and impact. Edinburgh, Scotland: Observatory for Sport in Scotland; 2020.
44. Tischer U, Hartmann-Tews I, Combrink C. Sport participation of the elderly—the role of gender, age, and social class. Eur Rev Aging Phys Act 2011;8:83–91.
45. Bauhoff S. Systematic self-report bias in health data: impact on estimating cross-sectional and treatment effects. Health Serv Outcome Res Methodol 2011;11:44–53.