



Social support network of older people in physical activity programs

Rede de suporte social de pessoas idosas em programas de atividade física

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ABSTRACT

Objective: To analyze the relationship between participation in physical activity groups and the social support network of older people. **Methods:** This was an observational, cross-sectional, quantitative and qualitative study, carried out in 2024, with older people participating in physical activity groups. The study included 25 older people (71.0 ± 5.1), 80% of whom were women, who answered a socio-demographic questionnaire, took part in a semi-structured interview about how the physical activity program worked and the benefits and reasons for taking part, and were assessed using the Escort Diagram to evaluate the structure and function of their social support network. **Results:** Approximately 38% of the participants' social support networks were members of the physical activity group, with an average of three members for each participant. Around 90% of the bonds in the group members' network were classified as friendships. The category "building and strengthening bonds" was cited as the main motivation for the participation in and benefits of the program (60%). Activity Physical Program participants were mentioned at all three levels of the social support network established by the Escort Diagram, with values of 28.1%, 33.3%, and 66.7% at the first, second and third levels, respectively. Around 10% cited the group participants as their emergency contact and 5% cited the program teacher. **Conclusion:** The structure and function of the social support network of physical activity participants relies significantly on group members in terms of the quantity and quality of relationships and support.

Keywords: Social support; Elderly; Physical activity; Program; Interpersonal relationship.

RESUMO

Objetivo: Analisar a relação entre a participação em grupos de atividade física e a rede de suporte social de pessoas idosas. **Métodos:** Trata-se de um estudo observacional, transversal e quanti-qualitativo, realizado no ano de 2024, com pessoas idosas participantes de grupos de atividade física. Participaram do estudo 25 pessoas idosas (71,0 ± 5,1 anos de idade), sendo 80% mulheres, as quais responderam um questionário sociodemográfico, participaram de uma entrevista semiestruturada sobre o funcionamento do programa de atividade física, sobre os benefícios e motivos de participação, foram avaliados pelo Diagrama de Escolta, para avaliação da estrutura e função da rede de suporte social. **Resultados:** Em torno de 38% da rede de suporte social dos participantes eram membros do grupo de atividade física, sendo em média três membros para cada participante. Em torno de 90% dos vínculos da rede dos membros do grupo são de amizade. A categoria "construção e fortalecimento de vínculos" foi citada como principal motivação de participação e benefícios do programa (60%). Os participantes do programa de atividade física foram citados nos três níveis da rede de suporte social estabelecidos pelo Diagrama de Escolta, sendo 28,1%, 33,3% e 66,7% no primeiro, segundo e terceiro nível, respectivamente. Em torno de 10% citaram como contato de emergência os participantes do grupo e 5% o professor do programa. **Conclusão:** A estrutura e função de rede de suporte social de participantes de atividade física contam significativamente com membros do grupo em relação à quantidade e qualidade das relações e de apoio.

Palavras-chave: Suporte social; Pessoas idosas; Atividade física; Programas; Relações interpessoais.

Introduction

The family is traditionally the primary source of social support for older people. Even considering the significant reduction in the number of family members in recent years, this core group continues to play a role of responsibility, followed by the State. In this context,

the World Health Organization¹ proposes "participation" as a pillar for active aging, suggesting that social or group activities can mitigate feelings of exclusion, loneliness, and reduced family ties, as well as enabling the construction of new social relationships through different emotional mechanisms². Social support is not

limited to individual interactions, but also encompasses factors such as family, community, and social context, which can broadly influence health and longevity³.

The perspective of community as an extended family, with the complexity of social bonds and interactions, forms a broader support network, called the Convoy model⁴. This concept emphasizes the Lifespan model from Baltes⁵, who developed the life cycle perspective, emphasizing that development occurs throughout life, taking into account the specific and individual experiences of older people. This network plays a fundamental role in maintaining ongoing care, independence, and autonomy. Therefore, expanding these social relationships is essential, as it contributes to increased self-esteem, autonomy, recognition, and a sense of belonging, promoting a more genuine social support network^{6,7}.

The scientific literature indicates that group activities for older adults increase social interaction and companionship⁷. However, the quality, meaning, and intensity of these created bonds, as well as the extent to which this pair interaction is actually able to positively affect the structure and function of the social support network of the older adults who participate in these groups, are still poorly studied. This information could improve existing programs or contribute to the implementation of new strategies for expanding social support networks, which could even generate cost savings on care in the medium and long term.

Previous research highlights that social support can encourage the practice of PA (PA)⁸; however, few studies have reported on the inverse relationship between these variables. Although one study investigated how members of a senior walking group interacted and motivated each other during physical exercise, the authors did not analyze whether this social interaction was sufficient to create bonds and social support beyond the PA itself⁹. A Brazilian study proposed a group PA intervention with hypertensive older individuals, and through a semi-structured interview, identified that participants develop a sense of belonging to the group¹⁰; however, it was not indicated whether these connections are incorporated into the older person's social support network.

In addition to the scarcity of studies exploring the strengthening of social relationships within PA programs using specific social support instruments, little is known about the intensity and complexity of this social support. A study conducted in Malaysia used the Duke

Social Support Index to analyze subjective and instrumental support, social interactions, and social networks in an investigation of PA levels among older women residing in a rural community; however, the sample did not participate in a PA group¹¹. Considering the aforementioned, it is important to conduct mixed-methods studies that utilize specific instruments to assess social support networks among participants in PA groups aimed at older adults.

Given this, the current study aimed to analyze the relationship between participation in PA groups, and the structure and function of relationships in the social support network of older adults. In addition to filling scientific gaps regarding the depth, complexity, and long-term effects of these social interactions, the results may have practical implications for the development of effective intervention policies tailored to age-related changes.

Methods

This is an observational, cross-sectional study with a quantitative-qualitative approach, conducted in the municipality of São Carlos, São Paulo, Brazil, in the year 2024. The project was approved by the Research Ethics Committee with Human Beings of the Federal University of São Carlos (CAAE: 74281623.10000.5504). This research was initially presented to the managers of the Municipal Health, Education, Citizenship and Social Assistance, and Sports Secretariats, who are responsible for the facilities that offer PA and adapted sports groups, in order to request authorization for data collection at those locations.

The target population for this study was individuals aged 60 or older who participated in PA and adapted sports groups offered in health, education, social assistance, and sports facilities in the aforementioned municipality. Regarding the inclusion criteria for the facilities, group PA was required to have been offered for at least two years and serve independent and semi-dependent older individuals. Regarding the inclusion criteria for older people, they were required to have been participating in the group for two years or more and have a monthly attendance rate above 75%, evidenced by the attendance list presented by the teacher responsible for the activities. Older individuals with hearing difficulties that could compromise data collection were excluded. Regarding the inclusion criteria for the teacher responsible for the group PA, professionals with at least 2 years of experience leading the group

were included, and substitute teachers were excluded.

The teachers responsible for the physical activities were initially contacted to present the research and verbally invite the participants. Those who expressed interest scheduled a day and time for data collection, which was carried out individually in a reserved room at the activity location. Prior to formal data collection, a pilot test was conducted with five older individuals at a primary healthcare unit. This procedure enabled testing of the comprehension of the questions and adjustment of the data collection instruments. The data collection meeting began with the presentation of the Informed Consent Form, which was read and signed by the participant.

The following instruments were then applied:

- A sociodemographic data questionnaire, consisting of questions about age, education, marital status, who the person lives with, individual income, family, occupation, and retirement;
- A questionnaire about participation in PA groups, to investigate aspects such as participation time, weekly frequency, participation in social events, group trips and sightseeing outings, and participation in activities during the pandemic. The tool also evaluated aspects related to the functioning of the classes, including the weekly frequency offered, class duration, use of playful strategies in classes, characteristics of the teacher/group leader (professional background), and socialization activities during and outside of classes;
- The Escort Diagram, created by Antonucci and Akiyama¹², and adapted by Paula-Couto¹³, considers variables such as proximity, type of relationship, frequency of contact, and emotional or instrumental support offered.
- Semi-structured interviews were conducted to un-

derstand participants' perspectives on building relationships with other students in the same group. Questions included reasons for remaining in the group, benefits of participation, perceived changes in social relationships after joining, trust in other group members, and emergency contact information. All interviews were audio-recorded for later transcription and analysis.

The quantitative data, relating to sociodemographic characteristics, were stored and tabulated in Microsoft Excel spreadsheets, and analyzed in terms of absolute and relative frequency. The qualitative data, obtained from the semi-structured interviews, were transcribed using the *Transkriptor* application and manually reviewed by the researcher. They were also saved in the cloud, where participants were coded with the acronym of the facility they attend, for example, USF, CCI, UATI, supplemented by a number and the year of the research, such as USF 01/24, CCI 01/24, UATI 01/24, and so on. For the presentation of the qualitative results, the facility acronym, number, sex, and age will be presented.

The qualitative analysis followed Bardin's content analysis method¹⁴, organized in three stages: (i) Pre-analysis: Careful selection of relevant documents to ensure the consistency of information; (ii) Exploration of the Material: Initial identification of subcategories, subsequently grouped into broad categories, allowing a structured view of the data; (iii) Treatment of Results: Categorization and interpretation of the data to answer the research questions, using the saturation criterion to ensure representativeness.

The responses were grouped into two main categories: Reasons for and Benefits of Participation in the Program. Each category was subdivided into subcategories identified during the analysis. To complement the qualitative approach, the categories were described in terms of absolute and relative frequency. Discrepancies in interpretations were resolved through collaborative review among the researchers. When necessary, multiple categories were assigned to the same response in order to capture nuances without compromising the complexity of the accounts.

Results

Characterization of the population

The majority of participants in the current study are female (80%), more than half of participants were between 70 and 79 years of age (56%), and 40% had com-

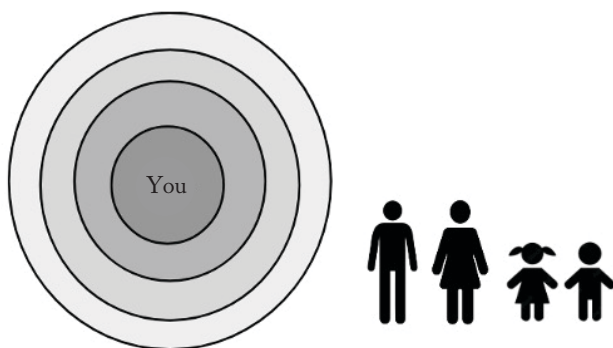


Figure 1 – Illustration of the Escort Diagram

pleted higher education. Furthermore, it was observed that 56% of participants lived with their spouse. Regarding individual income and occupational activities, 44% reported earning more than two minimum wages, 28% were still working as self-employed professionals, while the vast majority (76%) were already retired.

The length of time participants had been involved in the PA and adapted sports groups varied, with 60% of participants having been part of the groups for between 2 and 9 years. Furthermore, 55% of participants reported attending regularly, twice a week. Activities extended beyond regular classes, with 60% participating in social gatherings and 65% involved in events and celebrations offered by the groups.

In emergencies, most indicated family members as the primary contact (80%), followed by friends from the PA group (10%). Additionally, 5% mentioned teachers from the PA and adapted sports group as emergency contacts.

Characterization of the classes and teachers

The data showed that the majority of teachers who lead PA and adapted sports groups are Physical Education professionals (60%), followed by Physiotherapists (40%). Most teachers had between 10 and 20 years of experience in the field (80%). Classes mainly included stretching exercises (86%) and strength training (57%), held twice a week, with an average duration of one hour. Interaction strategies offered by teachers included debates (71.4%), social and cultural events (42.8%), and activities aimed at strengthening bonds (14.3%).

Reasons for and benefits of participation

Three main categories stood out, both in the investigation of the motivation for participating in PA and adapted sports groups and in the identification of perceived benefits, namely: building and strengthening bonds, improving physical capacity, and improving quality of life and mental health. The categories are discussed below, highlighting where necessary their nuances in the two contexts:

Building and strengthening relationships

The search for social interaction and acceptance was an important factor in joining the PA groups. Many participants reported a desire to reduce loneliness and create friendships:

“[...] friendships, we celebrate a lot, we go for walks” (UATI 07, M, 76 years of age).

“[...] for the affection, for the friendship” (SEME 07, M, 70 years of age).

Beyond the initial motivation, participants recognized that the groups helped strengthen friendships and foster meaningful interactions. Being part of the groups helped create a supportive and companionable environment:

“[...] we exchange ideas, we talk, we don't feel so alone, right?” (CRI VLP 04, F, 70 years of age).

“[...] to have a relationship with human beings, friendship” (UATI 08, M, 73 years of age).

Improved physical capacity

Participants cited the pursuit of preventing age-related health problems and improving overall health as the main reasons for joining PA groups. Accounts highlighted the fear of falling, the desire to maintain functionality, and the perception that regular exercise is essential:

“[...] “it was the fear of falling again, of getting hurt, of becoming bedridden, you know?” (USF SF 03, F, 70 years of age).

“[...] “the body asks for it, you know? Activity, and you feel better when you're active” (USF ST 04, F, 64 years of age).

PA was perceived as essential for maintaining or improving physical functionality and preventing disease. Participants emphasized activities such as stretching and muscle strengthening as fundamental:

“[...] “the stretching was very important to get the fluid circulating” (CRI VLP 05, F, 75 years of age).

“[...] I pay attention to the issue of maintaining the best possible PA” (SEME 07, M, 70 years of age).

Improved quality of life and mental health

The search for emotional balance and improved psychological well-being was highlighted as one of the reasons for joining PA groups. Some participants reported that the activity served as an outlet for dealing with personal problems:

“[...] “it's good for your mental health” (USF RT 03, F, 70 years of age).

“[...] “then I came back again, because I saw that something wasn’t right” (CRI VLP 03, F, 73 years of age).

Participants observed a significant improvement in quality of life and mental well-being after joining the groups, reporting a reduction in stress and feelings of isolation:

“[...] I have depression, it was great” (UATI 01, F, 70 years of age).

“[...] “it ends up serving as a kind of...therapy for me” (SEME 07, M, 70 years of age).

Structure and function of relationships

Approximately 38% of the participants’ social support network consists of members of the PA group, with an average of three PA group members cited for each participant. The results of the Escort Diagram were organized into three circles of proximity. In Circle 1 (closest), participants indicated family members (58.4%) and participants from the PA group (28.1%). In Circle 2 (intermediate), family members (43.2%) and members of the PA group (33.3%) were indicated. In Circle 3 (most distant), a higher concentration of members of the PA group was evident (66.7%).

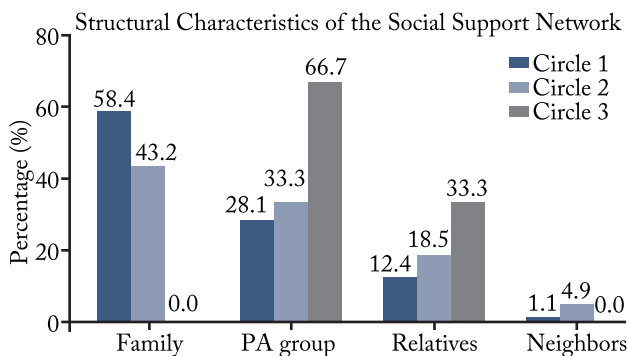


Figure 2 – Structure of the social support network
PA: physical activity

Regarding the characteristics of the people belonging to the participants’ social support network, the results show that the majority are between 60 and 80 years of age (55.1%), with a predominance of women (87%). Considering the nature of the relationships, 66.7% reported between 1 and 9 years of cohabitation, marked by geographical proximity, with 62.3% living less than one hour away. In terms of frequency of contact, 50.7% maintained daily interactions. The majority of relationships are defined as friendships (89.9%), family ties

(2.9%), or teacher-student relationships (7.2%).

Regarding the functionality of the social support network, 97.1% of participants reported feeling respected, 91.3% indicated that they are reassured and encouraged, 89.9% feel safe to confide in others, 87.0% feel they can be cared for in times of illness, and 91.3% can talk to someone when they are sad, nervous, or depressed. The importance of reciprocity is reflected in the emotional well-being of older people, as the social support network is an important protective factor, especially during the aging process.

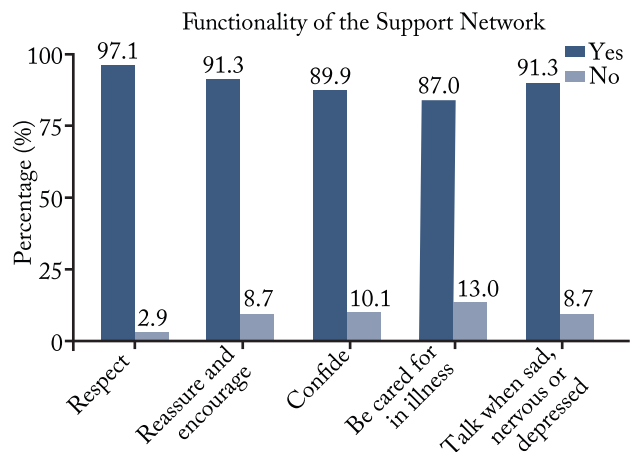


Figure 3 – Functionality of the social support network

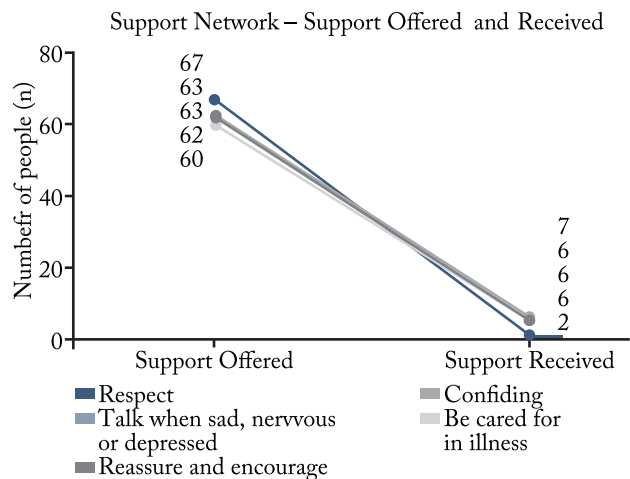


Figure 4 – Support Network - Support Offered and Support Received

Discussion

The findings of the current study demonstrate how participation in PA groups is positively related to the function and structure of the social support network of older adults, directly reflecting the objectives of this study to investigate the benefits of social interactions. The results highlight the centrality of friendship ties and the frequency of interactions as fundamental el-

ements for physical, emotional, and psychological well-being¹⁰. Thus, the confidence expressed by participants in requesting help, observed in this study, suggests that PA groups act as an environment of emotional and instrumental support, protecting against the negative effects associated with a lack of social support.

This contribution is relevant to the field of healthy aging, as it corroborates that PA and adapted sports groups act as important spaces for social interaction and strengthening bonds, offering an intersectoral model that is able to integrate health, social assistance, and leisure¹⁵. In this way, the results add new perspectives to scientific knowledge, reinforcing the importance of public policies that promote healthy and active aging through social support strategies with community peer groups.

Furthermore, the results of the current study align with the Socioemotional Selectivity Theory, according to which older people tend to prioritize more meaningful and affective relationships as they perceive time as a finite resource^{16,17}. The findings also showed that although family members still play a significant role in the immediate circle, friends and participants in PA groups emerge as central elements in the intermediate and more distant circles^{16,17}.

This redistribution of social ties reflects not only a natural and quantitative reduction in networks with aging, but also a qualitative redefinition of relationships, in which the interaction provided by PA groups becomes a space of acceptance, motivation, and emotional and social support, while also providing comfort and security during difficult times¹⁸. In a context of an aging population, these results highlight the importance of investing in programs that foster positive and meaningful social connections¹⁹.

Proximity and frequency of contact emerge as essential elements for strengthening social bonds, offering emotional and practical support that directly impacts the mental health and physical functionality of older adults. This regular contact, observed in the current study, not only reduces social isolation, a critical factor in the risk of depression and cognitive decline²⁰, but also provides a favorable environment for building meaningful interactions that stimulate engagement and self-esteem. Furthermore, the constant interaction and mutual support among participants in PA groups can act as a protective network, promoting emotional resilience and improving the ability to cope with everyday challenges, such as family losses or functional

limitations²¹.

From a physical standpoint, frequent participation in group activities tends to increase adherence to regular physical exercise, with positive impacts on the functionality, mobility, and independence of older adults²². These findings highlight the need for future interventions that encourage intersectoral programs for social interaction and PA, ensuring spaces that stimulate regular interactions and consolidate strong support networks, especially in vulnerable contexts²³.

The categories identified through qualitative analysis were found in the investigations of both the motivations and benefits. This convergence suggests that participants' expectations upon joining the groups were largely met, which may explain the high level of engagement and regular attendance. These quantitative data reinforce the importance of understanding participants' objectives, in order to ensure the success, adherence, and continuity of the programs.

The members of these groups occupy a significant position in the participants' social support network, with a predominance of friendships and daily interactions. Furthermore, participants indicated that in many cases group members are their contacts in case of emergencies, reinforcing a relationship that goes beyond friendship and is based on trust. The expansion of social connections, evidenced by the escort diagram, was corroborated by qualitative reports, which highlight the role of friendships and acceptance as key factors in reducing isolation and loneliness. Studies indicate that social support is associated with better adaptation to old age, positively impacting physical and mental health²⁴⁻²⁶.

Furthermore, the perceived benefits in terms of quality of life and mental health highlight the importance of PA groups as spaces for holistic care. According to the reports, the practice of PA was seen as a form of therapy, contributing to psychological well-being, especially relevant for participants who live alone and who may be more susceptible to social isolation²⁷⁻²⁹. In the context of the current study, the social interactions promoted by PA and adapted sports groups can be seen as analogous to these activities, functioning as a space for active engagement and strengthening of interpersonal bonds.

The current study highlighted that physical activities are offered in health, social assistance, education, and sports facilities, covering all regions of the municipality, a scenario that aligns with the guidelines of

*Aging In Place*³⁰, which advocates for the importance of aging locally and benefiting from the community's potential, promoting this through multi-sectoral and interdisciplinary collaborations.

This strategy promotes interaction among older adults, ensuring social inclusion, autonomy, and the sustainability of their support network—factors that contribute to healthy aging, especially for those in vulnerable situations. In this sense, the development of supportive environments close to homes is crucial, as it allows older adults to maintain their functional abilities in their living environments, facilitating access to resources that are fundamental to their quality of life.

The strengths of the current study lie in the combination of qualitative and quantitative methods, which allows holistic understanding of the perceived benefits, motivations, and contextual factors that influence engagement within the groups. The use of the Escort Diagram is a methodological advancement, as it highlights the structure and functionality of the participants' social support network, emphasizing how interactions within PA and adapted sports groups play a central role in strengthening affective bonds and combating social isolation. Furthermore, data based on self-reports may reflect subjective perceptions and require further investigation in future studies, using complementary methodologies.

The current study presents some limitations. The sociodemographic profile of the sample is relatively homogeneous, composed mostly of women with high levels of education and income above two minimum wages, which limits the generalization of the results due to the homogeneous characteristics and the sample size. Another significant limitation concerns the focus on groups located in specific public facilities and urban institutions. While valid, these contexts exclude the experiences of older adults residing in rural areas, peripheral regions, or areas with deficient public infrastructure, where access to PA programs is often limited. Finally, self-reports can reflect biases, since participants tend to emphasize positive aspects of the experience, influenced by social dynamics or the search for personal validation.

Future research should broaden the diversity of the sample, including older adults of different sexes, socioeconomic levels, and geographic backgrounds, allowing for a more comprehensive understanding of the impacts of PA groups in varied realities. New research should consider the implementation of adapted inter-

ventions, such as itinerant programs, partnerships with local organizations, or hybrid formats that combine in-person and virtual meetings. Furthermore, studies analyzing the social support network before and after participation in long-term PA programs could contribute to the field.

The results of the current study show that participation in PA groups goes beyond physical benefits, contributing to the strengthening and structuring and function of the social support networks of older adults, promoting the strengthening of meaningful bonds. Furthermore, the findings indicate elements of a group PA program model that meets the biopsychosocial needs of older people, such as in-person, group activities led by a teacher, and which, in addition to physical activities, offers opportunities for discussions, outings, social and cultural events, and activities aimed at strengthening bonds, as reported by the participants.

These elements can inspire practical implications for the development of policies to promote group PA, to be implemented in other locations, in public and private services, as well as components to be incorporated into intervention studies with older adults in the community, focusing on the multidimensionality of aging. They can also assist in the formulation and reformulation of programs aimed at promoting PA, establishing multi-sectoral and interdisciplinary interventions, and strengthening the debate on the importance of spaces, projects, and programs that foster the creation of bonds and the consolidation of new connections in the social support network.

Conflict of interest

The authors declare no conflict of interest.

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Author contributions

Fernandes E: Conceptualization; Methodology; Data analysis; Research; Data presentation design; Original manuscript writing; Writing - revision and editing; Approval of the final manuscript version. Belo LF: Methodology; Research; Data presentation design; Original manuscript writing; Writing - revision and editing; Approval of the final manuscript version. Silva Sobrinho AC: Methodology; Data analysis; Research; Data presentation design; Original manuscript writing; Writing - revision and edit-

ing; Approval of the final manuscript version. Schwenger LL, Sá AC and Ferreira LK: Data analysis; Research; Data presentation design; Original manuscript writing; Writing - revision and editing; Approval of the final manuscript version. Sampaio LTDV: Research; Data presentation design; Original manuscript writing; Writing - revision and editing; Approval of the final manuscript version. Gomes GAO: Conceptualization; Methodology; Data analysis; Supervision; Project management; Data presentation design; Original manuscript writing; Writing - revision and editing; Approval of the final manuscript version.

Statement regarding the use of artificial intelligence tools in the article writing process

The authors did not use artificial intelligence tools to prepare the manuscript.

Availability of research data and other materials

The underlying content of the research text is contained within the manuscript.

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Reviewers' assessment

The reviews of this article were originally conducted in Portuguese. This version has been translated using ChatGPT and subsequently reviewed by the Chief Editors.

Reviewer A

Anonymous

Format

- Does the article comply with the manuscript preparation rules for submission to the Revista Brasileira de Atividade Física e Saúde?
Partially
 - Regarding formal aspects, is the manuscript well-structured, containing the following sections: introduction, methods, results, and discussion (with the conclusion as part of the discussion)?
No
 - Is the language appropriate, and is the text clear, precise, and objective?
Partially
 - Was any indication of plagiarism observed in the manuscript?
No
- Suggestions/comments:**
- The title suggests that the study is qualitative; however, both qualitative and quantitative methodologies are addressed.
 - I suggest a review of the Portuguese language, as there are some incoherent paragraphs, lack of agreement, plural issues, etc.
 - The conclusion should appear as part of the discussion, not under a separate "Conclusion" subtitle.

Abstract

- Are the abstract and the resúmen adequate (including objective, study participants, variables studied, main results, and a conclusion) and do they reflect the content of the manuscript?
Partially
- Suggestions/comments:**
- There are several issues in the abstract; I will note them all in the review file that will be sent.

Introduction

- Was the research problem clearly stated and delimited?
Partially
- Is the research problem adequately contextualized

- in relation to the existing knowledge,
- moving from general to specific?
Yes
- Are the reasons justifying (including the authors' assumptions about the problem) the need for the study well established?
Yes
- Are the references used to support the presentation of the research problem current and relevant to the topic?
Yes
- Was the objective clearly presented?
Yes

Suggestions/comments:

- In the first paragraph of the introduction, there is a subjective passage: "given the significant reduction in recent years"... reduction of what? It is not clear.
- Also in the first paragraph, in the passage "...suggesting that social or group activities can mitigate feelings of exclusion...", the connection to the previous text is missing.
- The word lifespan should be italicized.
- The abbreviation "AF" is cited without explaining its meaning. From its first mention, the same abbreviation should be used consistently throughout the text.

Methods

- Are the methodological procedures generally appropriate for studying the research problem?
Partially
- Are the methodological procedures adopted for the study sufficiently detailed?
Partially
- Was the procedure for selecting or recruiting participants appropriate for the research problem and described clearly and objectively?
Yes
- Were details provided about the instruments used for data collection, their psychometric qualities (e.g., reproducibility, internal consistency, and validity), and, when appropriate, the operational definition of the variables?
Yes

- Is the data analysis plan adequate and properly described?
Partially
 - Were inclusion and/or exclusion criteria for sample participants described and appropriate for the study?
Partially
 - Did the authors provide information about the ethical procedures adopted for the research?
Yes
- Suggestions/comments:**
- The authors describe it as a quantitative study, but it is actually a mixed-methods (qualitative-quantitative) study.
 - There is redundancy in the description of the target population.
 - The exclusion criteria are not clearly stated.
 - The citation “Paula-Couto (2008)” was not found in the reference list.

Results

- Is the use of tables and figures appropriate and helpful in presenting the study results?
Partially
 - Is the number of illustrations in accordance with the journal’s submission guidelines?
Yes
 - Are the number of participants in each study stage, as well as losses and refusals, presented in the manuscript?
Partially
 - Are the participants’ characteristics presented and sufficient?
Partially
 - Are the results adequately presented, highlighting the main findings and avoiding unnecessary repetition?
Partially
- Suggestions/comments:**
- The percentages described in Figure 2 do not match the figure data.
 - The results described in Figure 3 also need revision, as some do not correspond to the figure.

Discussion

- Are the main findings of the study presented?
Yes
- Are the study’s limitations and strengths presented and discussed?

Yes

- Are the results discussed in light of the study’s limitations and existing knowledge on the subject?
Partially
 - Are the potential contributions of the main findings for scientific development, innovation, or real-world interventions discussed by the authors?
Yes
- Suggestions/comments:**
- The discussion meets the journal’s requirements.

Conclusion

- Was the study conclusion adequately presented and consistent with the study objective?
Partially
 - Is the study conclusion original?
Yes
- Suggestions/comments:**
- The study objective states: “...In addition to filling scientific gaps regarding the depth, complexity, and long-term effects of these social interactions, the results may have practical implications for developing effective intervention policies adapted to age-related changes.” Where is the conclusion addressing this proposed objective?

References

- Are the references current and sufficient?
Yes
 - Are most of them composed of original articles?
Yes
 - Do the references comply with the journal’s standards [quantity and format]?
Yes
 - Are the in-text citations appropriate, meaning that the claims made are indeed supported by the cited references?
Yes
- Suggestions/comments:**
- The references meet the journal’s requirements.

Comments to the author

- When evaluating the study “Social support network of older adults in physical activity programs: a qualitative study”, I found it to address an extremely important topic, with interesting data and a valuable proposal by the authors for the future use of the data to inform public policy development. To improve the article, I included several comments in

the attached file and on the platform, to be revised and adjusted according to RBAFS guidelines.

Final decision

- Substantial revisions required

Reviewer B

Bruno Holanda Ferreira 

University of São Paulo, São Paulo, Brazil

Format

- Does the article comply with the manuscript preparation guidelines for submission to the Revista Brasileira de Atividade Física e Saúde?
Yes
 - Regarding formal aspects, is the manuscript well-structured, containing the sections: introduction, methods, results, and discussion (with the conclusion included as part of the discussion)?
Yes
 - Is the language appropriate, and is the text clear, precise, and objective?
Yes
 - Was any indication of plagiarism observed in the manuscript?
No
- Suggestions/comments:**
- The text is clear and objective.

Abstract

- Are the abstract (in Portuguese) and the English abstract adequate (containing: objective, information about study participants, variables studied, main results, and a conclusion) and representative of the manuscript content?
Yes
- Suggestions/comments:**
- Suggest including what determined the study group – older adults (60 years or older).
 - Use of acronyms: some acronyms, such as “PA” (physical activity), are introduced abruptly. Repeating the full term on first use could help less familiar readers.
 - Check the descriptors of the keywords.
 - Keywords differ between Portuguese and English versions.

Introduction

- Is the research problem clearly stated and delimited?

Yes

- Is the research problem adequately contextualized in relation to existing knowledge, moving from general to specific?
Yes
 - Are the reasons justifying the study (including the authors’ assumptions about the problem) well established in the text?
Yes
 - Are the references used to support the presentation of the research problem current and relevant to the topic?
Yes
 - Is the objective clearly presented?
Yes
- Suggestions/comments:**
- Well-written and clear introduction.
 - The term “PA” (physical activity) should be written out in full on its first appearance.

Methods

- Are the methodological procedures generally adequate to study the research problem?
Yes
 - Are the methodological procedures adopted for the study sufficiently detailed?
Yes
 - Was the participant selection or recruitment procedure appropriate for the research problem and clearly and objectively described?
Yes
 - Were details provided about the instruments used for data collection, their psychometric qualities (e.g., reproducibility, internal consistency, and validity), and, when relevant, the operational definition of the variables?
Yes
 - Is the data analysis plan appropriate and adequately described?
Yes
 - Were the inclusion and/or exclusion criteria for participants described and appropriate?
Yes
 - Did the authors provide information regarding the ethical procedures adopted for conducting the research?
Yes
- Suggestions/comments:**
- Well-described methodology, allowing replication

by readers.

Results

- Is the use of tables and figures appropriate and do they facilitate proper presentation of the study's results?
Yes
 - Is the number of illustrations consistent with the journal's submission guidelines?
Yes
 - Are the number of participants at each stage of the study, as well as reasons for losses and refusals, presented in the manuscript?
Yes
 - Are participant characteristics adequately presented?
Yes
 - Are the results properly presented, highlighting the main findings and avoiding unnecessary repetition?
Yes
- Suggestions/comments:**
- Text is well-written and objective.

Discussion

- Are the main findings of the study presented?
Yes
 - Are the study's limitations and strengths presented and discussed?
Yes
 - Are the results discussed considering the study's limitations and the existing knowledge on the topic?
Yes
 - Do the authors discuss the potential contributions of the study's main findings to scientific development, innovation, or practical applications?
Yes
- Suggestions/comments:**
- Results and discussion are presented clearly.

Conclusion

- Is the study's conclusion appropriately presented and consistent with the study's objective?
Yes
 - Is the study's conclusion original?
Yes
- Suggestions/comments:**
- The study's conclusion is clear and objective, aligned with the study proposal.

- Practical applicability: could be enhanced by including more concrete suggestions for public health managers and professionals based on the findings (e.g., ideal formats for meetings, intersectoral actions, etc.).

References

- Are the references up to date and sufficient?
Yes
- Are most of them composed of original articles?
Yes
- Do the references comply with the journal's standards [quantity and format]?
Yes
- Are in-text citations appropriate, i.e., do they actually substantiate the statements made?
Yes

Suggestions/comments:

- The manuscript complies with the journal's guidelines.

Comments to the author

Dear Author(s),

Congratulations on your work entitled "Social support network of older adults in physical activity programs: A qualitative study." The text is clear, well-written, and flows smoothly, without structural or coherence problems. The topic addressed is highly relevant to science, particularly in the fields of public health and aging, as it sheds light on important social aspects that influence older adults' engagement in physical activity programs.

Final decision

- Substantial revisions required

Reviewer C

Lilian Messias Sampaio Brito 

Federal University of Paraná, Curitiba, Paraná, Brazil

Format

- Does the article comply with the manuscript preparation rules for submission to the *Revista Brasileira de Atividade Física e Saúde*?
Yes
- Regarding formal aspects, is the manuscript well-structured, containing the sections: introduction, methods, results, and discussion (with the conclusion as part of the discussion)?

Yes

- Is the language appropriate, and is the text clear, precise, and objective?

Partially

- Was any indication of plagiarism observed in the manuscript?
- Not applicable

Suggestions/comments:

- Part of the text was detected as AI-generated. If accepted, the manuscript must undergo spelling and grammar corrections.

Abstract

- Are the abstract and *resumen* adequate (including the objective, study participants, variables studied, main results, and a conclusion) and do they reflect the content of the manuscript?

Partially

Suggestions/comments:

- It needs to be rewritten; some sentences are confusing and awkwardly phrased, such as: “being 80% women, members of physical activity groups, who answered the questionnaire with sociodemographic information, aspects of the physical activity program, benefits, reasons for participation, and the structure and function of the social support network.”

Introduction

- Was the research problem clearly stated and delimited?
- Not applicable
- Is the research problem adequately contextualized in relation to existing knowledge, moving from general to specific?

Yes

- Are the reasons justifying (including the authors’ assumptions about the problem) the need for the study well established?

Yes

- Are the references used to support the presentation of the research problem current and relevant to the topic?

Yes

- Was the objective clearly presented?

Yes

Suggestions/comments:

- Improve spelling as indicated and revise the study objective: “Therefore, this study aims to analyze the relationship between participation in physical ac-

tivity groups for older adults and the structure and function of relationships within the social support network.” There is a repetition of “and,” which could be replaced by a comma.

Methods

- Are the methodological procedures generally appropriate for studying the research problem?

Yes

- Are the methodological procedures adopted for the study sufficiently detailed?

Yes

- Was the procedure for selecting or recruiting participants appropriate for the research problem and described clearly and objectively?

Yes

- Were details provided about the instruments used for data collection, their psychometric qualities (e.g., reproducibility, internal consistency, and validity), and, when appropriate, the operational definition of the variables?

Yes

- Is the data analysis plan adequate and properly described?

Yes

- Were inclusion and/or exclusion criteria for sample participants described and appropriate for the study?

Yes

- Did the authors provide information about the ethical procedures adopted for the research?

Yes

Suggestions/comments:

- This section is well written and detailed.

Results

- Is the use of tables and figures appropriate and helpful in presenting the study results?

Yes

- Is the number of illustrations in accordance with the journal’s submission guidelines?

Yes

- Are the number of participants in each study stage, as well as losses and refusals, presented in the manuscript?

- Not applicable

- Are the participants’ characteristics presented and sufficient?

Yes

- Are the results adequately presented, highlighting the main findings and avoiding unnecessary repetition?

Yes

Suggestions/comments:

- No comments or suggestions.

Discussion

- Are the main findings of the study presented?
Yes
 - Are the study's limitations and strengths presented and discussed?
Yes
 - Are the results discussed in light of the study's limitations and existing knowledge on the subject?
Yes
 - Are the potential contributions of the main findings for scientific development, innovation, or real-world interventions discussed by the authors?
Partially
- Suggestions/comments:**
- Only public policy suggestions were presented; this could be explored further.

Conclusion

- Was the study conclusion adequately presented and consistent with the study objective?
Yes
 - Is the study conclusion original?
Yes
- Suggestions/comments:**
- The formulation of public policies aimed at strengthening and expanding social support networks beyond family ties, with the redefinition of support structures, is essential for those who work with older adults and should be more highly valued by the State.

References

- Are the references current and sufficient?
Yes
- Are most of them composed of original articles?
Yes
- Do the references comply with the journal's standards [quantity and format]?
Yes
- Are the in-text citations appropriate, meaning that the claims made are indeed supported by the cited references?

Yes

Suggestions/comments:

- No comments or suggestions.

Comments to the author

- This study addresses a relevant topic by examining the relationship between participation in physical activity groups and the structure and function of the social support network among older adults. The articulation between health, aging, and social relationships is an important and current field, with significant practical implications for promoting health and well-being in this population.
- The study's objective is clearly stated but could be reformulated more precisely, for example: "To analyze the relationship between participation in physical activity groups and the structure and function of relationships in the social support network of older adults."
- Regarding the methodology, the sample, composed of 25 participants, is relatively small and predominantly female. This limits the generalizability of the findings and should be discussed in greater depth, especially concerning gender bias and representativeness.
- The results are interesting, particularly regarding the significant presence of members of physical activity groups at different levels of the participants' social support networks. The identification of friendship bonds and the recognition of the group as a source of emotional support, even in emergencies, highlight the transformative potential of these programs in the social lives of older adults. However, the discussion could be expanded to include theoretical reflections and connections with previous studies on active aging, social support, and public health.
- The study offers practical contributions for policymakers and professionals working with physical activity programs for older adults. It would be valuable to emphasize these implications in the final considerations, highlighting the social value of the analyzed programs.
- Finally, the text presents some grammatical inaccuracies and passages that are difficult to understand, affecting readability. Expressions such as "benefits reasons for participation" or "network of group members" require revision. A careful linguistic review is recommended to ensure greater clarity and cohesion throughout the manuscript.

Final decision

- Minor revisions required
-