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Reasons for adhesion and adherence to a remote case management program for fall prevention delivered to older adults: a qualitative study

Motivos de adesão e aderência a um programa online de gestão de casos de prevenção de quedas para pessoas idosas: um estudo qualitativo

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ABSTRACT

Objective: To analyze the reasons for participation and retention of older adults who suffered at least two falls in the previous year in an online multidisciplinary case management program for fall prevention, delivered remotely. **Methods:** Qualitative and observational study conducted in Brazil between 2021 and 2023, with 50 participants. Inclusion criteria were older adults with a history of at least two falls in the previous 12 months, the ability to walk, and access to resources for virtual communication. The 16-week intervention included case management on risk factors and supervised physical exercises. Sociodemographic data and answers to open-ended questions about reasons for participation and retention were collected by video call and analyzed qualitatively using Bardin analysis. **Results:** Most participants were female (90%) and between 60 and 69 years of age (46%). The main reasons for participation were interest in the topic of falls (50.8%), the characteristics of the program being offered remotely and by a highly credible institution (16.9%), the provision of activities that promote quality of life and health (11.3%), and family encouragement (10.5%). Regarding retention, the characteristics of the program stood out in terms of the quality of the proposed model (41.2%), positive bond with researchers (33%), and contribution to research and the institution (8.2%). **Conclusion:** Reasons for participation and retention are related to the quality of the intrinsic characteristics of the program, which should be prioritized in order to increase the chances of greater implementation.

Keywords: *Health promotion; Patient participation; Accidents falls; Older adults.*

RESUMO

***Objetivo**: Analisar os motivos de participação e permanência de pessoas idosas que sofreram pelo menos duas quedas no último ano em um programa multidisciplinar de gestão de casos em formato remoto para prevenção de quedas. **Métodos**: Estudo qualitativo e observacional realizado no Brasil entre 2021 e 2023, com 50 participantes de um programa de prevenção de quedas. Participaram do estudo pessoas idosas com histórico de ao menos duas quedas nos últimos 12 meses, capacidade de deambular e acesso a recursos para comunicação virtual. A intervenção online de 16 semanas incluiu gestão de casos sobre os fatores de risco e exercícios físicos supervisionados. Dados sociodemográficos e respostas a questões abertas sobre motivos de participação e permanência foram coletados por videochamada e analisados qualitativamente por meio de análise de Bardin. **Resultados**: A maioria dos participantes era do sexo feminino (90%) e tinha entre 60 e 69 anos (46%). Os principais motivos de participação foram o interesse na temática de quedas (50,8%), às características do programa ofertadas de forma remota e por uma instituição com alta credibilidade (16,9%), a oferta de atividades que promovem qualidade de vida e saúde (11,3%) e incentivo familiar (10,5%). Quanto à permanência, destacaram-se a qualidade do modelo da proposta (41,2%), vínculo positivo com pesquisadores (33%) e contribuição com a pesquisa e instituição (8,2%) **Conclusão**: Os motivos de participação e permanência estão relacionados à características intrínsecas de qualidade do programa, as quais devem ser priorizadas em programas similares.*

Palavras-chave: *Promoção da saúde; Participação do paciente; Acidentes por quedas; Pessoa idosa.*

Introduction

Falls among older adults are considered a serious public health problem[1-3]. This phenomenon can cause fractures, injuries, premature death, fear of falling, loss of confidence, social isolation, depression, dependence

and loss of autonomy in individuals over 60 years of age[3-5]. As a way of addressing this problem, it is necessary to adopt actions that precede falls, in order to reduce the risk factors that can cause this accident.

Interventions focused on preventing falls in older adults aim to reduce the rate and risk of falls, in addition to promoting clinical, psychological, and social benefits for this population[5]. In conjunction with previously known strategies, case management is an additional form of multidimensional assistance, in which actions are taken to identify individual risk factors for falls and plan ways to reduce these factors. This strategy includes the active participation of the older person, and their family or caregiver. Thus, in case management actions, the older person actively participates in the preparation and reformulation of the care plan developed[6-8].

Remote case management interventions are strategic in restrictive situations, such as the COVID-19 pandemic, as they comply with health guidelines and offer quality care via digital platforms. Although effective, there is a lack of studies on factors that influence the adherence of older adults to multicomponent programs, which combine videoconferencing and applications to personalize care and make access more flexible[9-11].

Therefore, despite advances in the number of studies on fall prevention programs for older people, the scientific literature demonstrates a lack of studies that specifically analyze the operating characteristics of online programs[9,12-14]. Existing research most often analyzes the effects of programs resulting from randomized clinical trials in a face-to-face format[12,15,17,18], that are not specifically for fall prevention[9,17,18], for the group of older people who fall[12-14,16], are mostly carried out in developed countries[13,14,19], or do not refer to the pandemic period[16-18].

A systematic review of adherence to exercise programs among older individuals at a risk of falls found that home-based programs were effective in five studies, but highlighted the lack of research on specific characteristics for this age group. Studies focused on the effectiveness of programs for older individuals who fall may contribute to the implementation or improvement of fall prevention initiatives[9].

The hypothesis of the current study was that the adherence and retention of older people are related to both the intrinsic characteristics of the program and the social and technological factors involved in remote management. Therefore, the objective of this study was to analyze the reasons for participation and permanence of older adults who suffered at least two falls in the previous year in a multidisciplinary case management program based on fall prevention, offered remotely through videoconferencing and social communication applications.

Methods

Study design

This is a qualitative and observational study, conducted by the Department of Gerontology at the Federal University of São Carlos and carried out within the scope of the respective research program. The research originates from a randomized controlled clinical trial promoted by the Federal University of São Carlos, located in the city of São Carlos, in the state of São Paulo, between the years 2021 and 2023, in a remote format. Further details can be found in the study protocol[20].

Ethical aspects

The program followed Resolution 466/2012 of the National Research Council and CONSORT (2010) and was approved by the Ethics Committee of the Federal University of São Carlos, with the number CAAE: 34350620.7.0000.5504, and included in the Brazilian Registry of Clinical Trials, with the number RBR-3t85fd.

Population and sample

Older people who fell and were participants in the MAGIC Project: Effects of a care program for risk factors for falls in a prevention program for older adults who fall: a randomized clinical trial, participated in this study. This sample was established based on theoretical representativeness and heterogeneity, seeking maximum information from a group of key informants of the Project.

For the classification of fallers, the definition of a fall used in this study was based on that of the World Health Organization[21], which defines a fall as: "An event that causes a person to come to rest inadvertently on the ground, floor, or other lower level," and older fallers were considered as those who had fallen two or more times in the previous year[20].

The eligibility criteria adopted were older people from the community, aged 60 or over, residing in any region of Brazil, not residing in long-term care facilities, and with a history of two or more falls in the previous year. The inclusion criteria were: older adults with a history of at least two falls in the previous 12 months, who were able to walk alone, with or without walking assistance, available to participate in assessments and interventions, and who had access to virtual communi-

cation with audio and a camera, or a family member/caregiver who was familiar with virtual communication with audio and a camera to facilitate the proposed assessments and intervention.

The exclusion criteria were: older people with severe and uncorrected hearing or visual impairment that made communication difficult during the assessment and interventions, older people with motor sequelae of stroke, active inflammatory diseases or neurological diseases, such as advanced Parkinson's disease (stage 5 of the modified Hoehn and Yahr Scale and not regularly using antiparkinsonian medications), multiple sclerosis, Huntington's disease, dementia, uncontrolled vestibular disease, epilepsy and traumatic brain injury, or who were taking medications that indicated the presence of these diseases, older people or family members/caregivers who were unable to read the guidelines and information in the support materials, and the absence or instability of the internet for the smooth running of the assessments and monitoring of the study.

Data collection procedures

Data collection took place between April and December 2021. This period was chosen because it represented a time when restrictions from the COVID-19 pandemic still limited in-person activities, but already allowed for a more structured organization to conduct remote interventions. This choice ensured the safety of participants and the operational feasibility of the study. Participants were recruited through contact with health facilities, referrals, pamphlets, posters, and publicity through communication channels. The acceptance rate and further information about the protocol of this intervention can be found in previous studies[21-23]. Most of the older adults who participated showed great interest in preventing further falls and benefiting from the personalized approach of the program. After recruitment, older adults who agreed to participate signed an online Informed Consent Form containing general information about the study, its objectives and procedures. Qualitative data collection was conducted by a single previously trained interviewer, based on open questionnaires prepared by the researchers and previously tested in a pilot study carried out with 5 participants and with other researchers involved. After adjustments, responses were collected six weeks after the end of the intervention, during video calls via WhatsApp or Google Meet, lasting between 10 and 30 minutes. The information obtained was entered into online forms for later analysis.

Data reliability was ensured through periodic discussions between the research team and specialized supervisors, in addition to the use of previously tested instruments for qualitative assessments among group members or in the pilot test. The recruitment and sampling process prioritized accessibility and security, including participants who had technical support, internet access, and, when necessary, a family member to facilitate virtual communication.

Intervention

The intervention, part of a larger study, lasted 16 weeks and consisted of a multidisciplinary remote program to prevent falls in older adults, carried out via videoconferencing and applications such as Google Meet and WhatsApp. Key activities included: Risk Factor Management: Identification and monitoring of individual risks, with personalized strategies planned with participants and caregivers. Supervised Physical Exercise: 30- to 60-minute sessions, twice a week, focusing on strengthening, balance, aerobic conditioning, and stretching, adjusted every two weeks. Family Planning and Support: Weekly meetings to review and adjust the plan, promoting adherence with ongoing support. Gerontologists monitored progress and adapted recommendations based on participant feedback.

More information about the protocol of this intervention can be found in previous studies[21-23].

To identify reasons for participation and permanence, the open-ended questionnaire contained the following questions: "Cite three reasons that made you participate in the program?" and "Cite three reasons that made you remain in the program?". This questionnaire was administered six weeks after the end of the intervention via video calls. The responses obtained were entered into an online form by the researcher, who later exported them to a spreadsheet program. The duration of the calls varied from 10 to 50 minutes.

Data analysis

The qualitative data collected were exported to spreadsheets and analyzed through categorization and subcategorization based on Bardin's content analysis[24], according to the following phases: Pre-analysis: The data were organized and subjected to an initial reading for familiarization and careful selection of the corpus, ensuring consistency and relevance for the research objectives. Exploration of the material: Data were broken

down and categorized based on emerging themes and patterns, grouped into broad categories for a structured and comprehensive view. Processing of results: The categorized data were analyzed for interpretations and inferences that answered the research questions. The criteria of saturation, heterogeneity, and representativeness were considered to ensure an adequate sample and explore all the main themes.

For the categorization and subcategorization of the results, the reasons for participation in the program were identified in 25 subcategories, which were later reorganized into eight main categories. In addition, the reasons for staying were organized into 21 subcategories, which were also regrouped into eight broad categories. Discrepancies in interpretations of responses were addressed through collaborative review among project researchers. When necessary, multiple categories were assigned to the same response to capture nuances without reducing the complexity of the accounts.

The defined categories were described and counted based on absolute frequency and relative frequency, allowing a counting analysis complementary to the qualitative approach[24]. This integration enabled more detailed understanding of the aspects that motivated participants to join and remain in the program.

Results

Among the 56 participants who started the MAGIC Program, 50 older adults completed the randomized clinical trial, thus the initial acceptance rate was 87.5%. The 50 participants underwent scheduled assessments 6 weeks after the end of the intervention. All participants (n = 50) who completed the program agreed to participate in the qualitative data investigation, resulting in a 100% adherence and acceptance rate for the second phase. Although data saturation occurred after 41 participants responded, data were collected from all participants in order to better support decision-making regarding program implementation.

The majority of participants were female (90%), aged 60-69 years (46%), single or widowed (48%), with more than 12 years of schooling (48%), income above 6 minimum wages (66%), and self-identified as white (84%). Regarding the number of falls, 30 suffered 2 falls, 11 suffered 3 falls, 10 suffered 10 falls, and 5 suffered 5 falls. The characterization data of the sample of participants are summarized in Table 1.

Regarding the participants' reports on reasons for participation, 124 responses were cited. These responses were grouped by similarity of their content into 25 reasons, and 8 categories. Among the most frequent, the prevention of falls and the improvement in health stood out, with reports such as: " I sought out the program to prevent falls and improve my balance." The credibility of the program was also a relevant factor, as evidenced by: " The seriousness of the Universidade Federal de São Carlos name gave me the confidence to participate." Additionally, many participants mentioned an interest in learning more about self-care and improving their quality of life: " I wanted to learn more about self-care and improve my quality of life."

Table 1 – Sociodemographic and socioeconomic characterization of the sample (n = 50)

Variable	n	%
Sex		
Male	5	10.0
Female	45	90.0
Age range		
60-69	23	46.0
70-79	16	32.0
80+	11	22.0
Civil status		
Cohabiting / Married	19	38.0
Single / Widowed	24	48.0
Divorced / Separated	7	14.0
Schooling		
0-1 years	4	8.0
2-12 years	24	48.0
> 12 years	22	44.0
Income		
0-1 minimum wages	8	16.0
2-5 minimum wages	9	18.0
> 6 minimum wages	33	66.0
Race/color		
White	42	84.0
Non-white	8	16.0

Table 2 presents the summarized categories regarding the reasons for the older adults participating in the MAGIC program. The most frequent categories were: "Falls" (50.8%), "Program characteristics" (16.9%), and "Quality of life and health" (11.3%).

Regarding the participants' reports on reasons for remaining in the intervention, 97 responses were cited. These responses were grouped by similarity of their content into 21 reasons, and eight categories, high-

lighting the connection with the researchers and the team, mentioned in reports as: " The bond created with the interveners kept me in the program." Another recurring reason was the perception of health results: " I noticed many benefits to my health, which motivated me to continue."The personalized assistance offered by the program was also valued: " The quality of care and constant monitoring made all the difference."

Table 3 presents the frequency of reasons for older adults remaining in the MAGIC program. The main categories mentioned were: "Characteristics of the program" (41.2%), "Link with researchers" (33%), and "Contribution to research and the institution" (8.2%).

Table 2 – Categories and reasons for participation of older people in the MAGIC program. (n = 50)

Variable	n	%
Falls		
For having presented falls during the registration period	28	22.5
For offering activities to prevent new occurrences of falls	12	9.9
For receiving guidance on falls	11	8.8
For the specific theme of the program being falls	9	7.2
For preventing fractures	3	2.4
Characteristics of the program		
For the credibility and seriousness of the Federal University of São Carlos	11	8.8
For being delivered remotely	4	3.2
For the monitoring model proposed by the program	2	1.6
For being free	2	1.6
For the exercise program	1	0.8
For being aimed at older people	1	0.8
Quality of life and health		
To promote health	6	4.8
To address problems that arise with age	3	2.4
To learn new things	2	1.6
To learn about self-care	1	0.8
To stabilize chronic disease	1	0.8
To seek improvement in health	1	0.8
To improve quality of life	1	0.8
Family incentive		
For family encouragement	13	10.4
Benefits of physical exercise		
Search for body balance	2	1.6
Search for muscle strengthening	1	0.8
Social interaction		
Social interaction	4	3.2
Medical indication		
Medical indication	1	0.8
Others		
To contribute to scientific research	3	2.4
For having been publicized on television	1	0.8

The analysis of the reasons for participation and permanence in the program revealed similarities and differences in the factors that attracted and kept participants engaged.

The reasons for participation included the desire to prevent falls and improve health, in addition to trust in the program and interest in self-care. Statements such as: " I sought out the program to prevent falls and improve my balance" and " I wanted to learn more about self-care and improve my quality of life" illustrate these objectives.

The reasons for staying in the program emphasized

Table 3 – Categories and reasons for older people remaining in the MAGIC program (n = 50).

Variable	n	%
Characteristics of the program		
For having enjoyed the program and its proposal	14	14.4
For the quality of the program	15	15.4
For the assistance provided in the care	7	7.2
For being delivered remotely	2	2.0
For the quality of the graphic and audiovisual materials	1	1.0
For being a current topic	1	1.0
Bond with interventionists/researchers		
Connecting with interventionists and researchers	19	19.5
Researchers' commitment to quality of care	9	9.2
Differentiated attention from researchers	3	3.0
Contribution to research and the institution		
For being able to contribute to research	7	7.2
For the credibility of the Federal University of São Carlos	1	1.0
Personal reasons		
Availability of time	2	2.0
Interest in learning	2	2.0
Willingness to improve	1	1.0
Being determined	1	1.0
Benefits of the program		
For the benefits I noticed after starting the program	2	2.0
Socialization during the pandemic	2	2.0
Improved balance	1	1.0
Falls		
Hope not to fall again	3	3.0
Family incentive		
For family encouragement	2	2.0
Others		
I don't know	2	2.0

the bond with the team and the continuous support. Reports such as: " The bond created with the interventionists kept me in the program" and "The quality of care and constant monitoring made all the difference" reflect the importance of a welcoming environment and personalized support.

Although technical and relational factors overlap, the analysis revealed that initial goals, such as fall prevention, evolve into a greater appreciation of support and perceived outcomes. These findings indicate that the integration of technical and relational aspects is essential for program success and ongoing participant engagement.

Discussion

The main results of the current study highlighted that interest in the topic of falls and their risk factors was one of the main drivers for the participation of older people in the program, reflecting a direct concern with the prevention and management of this health problem. Furthermore, the specific characteristics of the program's operation, such as its remote approach and the credibility of the promoting institution, played a fundamental role in the decision to join the program. With regard to permanence, participants attributed great importance to the quality of the program and the bond established with researchers, which were perceived as essential elements to sustain engagement and the continuity of activities.

Regarding the characteristics of the participants, a higher proportion of female individuals was observed, in younger age groups, with high levels of education and income. Two other studies offer fall prevention programs for elderly people with similar characteristics to this one, one of which was carried out in Brazil[24], and another carried out in Denmark with older people living in the community[25]. Thus, there is a similarity in sociodemographic characteristics with the Brazilian older population that participates in interventions to prevent falls.

The reasons for starting to participate in the program were strongly related to the history of falls and the desire of people to prevent these accidents from happening again. The volunteers indicated in their reports that they expected that the guidance and other activities offered by the program could prevent further falls and the consequences they brought. In fact, scientific evidence shows that this prevention is possible[8,26,27] including when these programs are offered using technology[9,28]. These results reinforce the possibility of offering safe and lower-cost ways to prevent falls for older people.

The program's operating characteristics, with emphasis on the credibility of the promoting institution, were widely mentioned as one of the main factors that motivated the participation of the older adults. The reputation of universities as promoters of social responsibility and seriousness in initiatives aimed at the population reinforced participants' confidence in the quality of the program. This element was even more valued due to the sample profile, composed mostly of highly educated individuals, which facilitated understanding of the scientific rigor and seriousness of the research conducted by public educational institutions. This finding highlights the importance of institutional credibility as a strategic element for adherence to health promotion programs.

A significant reason for participant retention in this falls prevention program was the bond established with the researchers who conducted the interventions. This bond was perceived by participants as a commitment to quality of care and maintained through attentiveness and friendliness. Previous studies have also reported the importance of the bond established between participants and researchers in adherence to physical activity programs for older adults[16,29].

Participants reported that the bond helped increase their confidence and motivation to continue with the proposed physical activities. Harris et al.[16] found that a positive bond established between participants and researchers was an important factor for adherence to the physical activity program proposed for older adults. Furthermore, Jung et al.[29] also found that a positive relationship between participants and researchers was a crucial factor in the adherence and retention of older people in physical activity programs, and this factor increased volunteer satisfaction, similar to the results found herein.

In the current study, participants valued the program's multicomponent protocol as a retention factor. According to Lytras et al.[25], programs based exclusively on physical exercise may not be sufficiently attractive. This perception of participants is possibly related to the differentiated assistance offered by weekly case management meetings, in which agreements were made between the volunteer and the family, and joint planning between the volunteer and the interventionist regarding existing resources and care priorities.

Similar to the findings of the current investigation, other studies state that the quality and practicality of the activities proposed in fall prevention programs

influence adherence and retention. Chippendale and Boltz[30] found a strong association between ease of use and relevance of a physical exercise program for preventing falls for older people with better adherence and satisfaction. Ambrens et al.[31] identified that flexibility and the ability to adapt to the individual needs of participants in program protocols for older people are important factors for retention.

The study's strengths include its high response rate, scientific rigor, as it was derived from a randomized clinical trial, and focus on program implementation, complementing previous research with the same sample. Qualitative analysis provided relevant insights by capturing participants' perceptions, which would not have been possible with quantitative data alone.

Among the limitations, the sample was composed mainly of individuals with high levels of education and income, concentrated in the southeast region, restricting the generalization of the results. Furthermore, the qualitative questionnaires developed by the researchers did not undergo external validation, which may affect reliability, although this was mitigated by training, pilot testing, and standardization.

Finally, conducting the study during the pandemic imposed restrictions on in-person recruitment and data collection, with the remote format potentially biasing responses from participants with less technological familiarity. These limitations reinforce the need for future research that validates qualitative instruments and includes more diverse populations.

On the other hand, the study presents a strong point in relation to scientific advances in the analysis of factors on randomized clinical studies that have been little explored in other research. This is complementary information to other studies previously carried out with the same sample, which refer to the quality of program implementation[33-35]. By analyzing the operating characteristics of these intervention protocols, it is possible to improve evidence-based clinical practice in Gerontology, given that professionals and managers will have access to more information that will ensure greater adherence and compliance with programs with this model.

In this context, the results presented here reinforce the relevance of aspects such as personalization, emotional connection, and the reduction in barriers to increase participation and the effectiveness of government programs, controlled in the future by patient management applications such as MoveSUS[36]. Furthermore, elements such as institutional credibility, technical support, and flexible strategies, including remote activities and technological solutions, can enhance participant adherence. Thus, the integration of evidence-based practices and humanized approaches not only contributes to the advancement of Gerontology, but also increases the impact of these programs on health promotion and regular physical activity.

Conclusion

In summary, the current study showed that the main factors that motivated the participation of older people in the program were the interest in preventing falls and the trust in the credibility of the organizing institution. Maintenance in the program was associated with the remote and multicomponent approach, in addition to the link established with researchers, perceived as a qualitative difference in the service. These results reinforce the importance of interventions that integrate technology, personalization, and social support to increase adherence to and the effectiveness of programs aimed at preventing falls. Furthermore, the information obtained provides support for the development of more effective and sustainable public policies, contributing to the reduction in falls and their negative outcomes in the older population.

Conflict of interest

The authors declare no conflict of interest.

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Authors' contributions

Barros AP: Conceptualization; Methodology; Software development, implementation, and testing; Data and experiment validation; Data analysis; Research; Tool provision; Data curation; Supervision; Project administration; Data presentation design; Writing of the original manuscript; Writing - review and editing; Approval of the final version of the manuscript. Ansai JH: Conceptualization; Methodology; Data and experiment validation; Data analysis; Research; Tool provision; Data curation; Supervision; Project administration; Data presentation design; Writing of the original manuscript; Writing - review and editing; Approval of the final version of the manuscript. Candanedo

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Declaration 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 contents underlying the research text are contained in 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

Jessica Fernanda Correa Cordeiro
Universidade do Porto, Faculdade de Desporto, Centro de Investigação em Atividade Física, Saúde e Lazer, Portugal.

- The aim of this study was to analyze the reasons for participation and continued engagement of older adults who experienced at least two falls in the past year in a multidisciplinary case management program for fall prevention, conducted remotely. I appreciate the opportunity to review and read the article. The study presents some significant limitations that require revision and improvement. Below are some suggestions.

Title

- I suggest including the study design in the title, making it more specific and highlighting the methodological approach adopted in the research.

Abstract

- The abstract needs to be reorganized to provide a clearer and more concise understanding of the study. Although it includes relevant information, it lacks a more effective structure and organization. I recommend organizing it by topics: objective, method, results, and conclusion.
- In the methods section, include more details: is the study national in scope? How was the sample defined? What instrument was used, what was the location, and what were the data collection procedures? Briefly describe the intervention, who delivered it, and the inclusion criteria for participants. Summarize the studied variables.
- In the results section, synthesize the main quantitative findings and better describe the qualitative aspects, specifying what was assessed.
- In the conclusion, clearly answer the study's objective in a way that is consistent with the manuscript.

Introduction

- The introduction provides a good contextualization of the topic and is well written. However, I recommend making some points more concise, especially the part about the variety of qualities analyzed in online research formats, which can be detailed in the methods section. The study's rationale could be clearer and more organized, as it is somewhat vague. The study hypothesis should also be explicitly stated to strengthen the introduction.

Objective

- I suggest making the objective clearer by providing more details about the multidisciplinary case management program. It would be helpful to specify the origin of the program (e.g., from a specific institution?) and how it works in practice. Additionally, the phrase "conducted remotely" needs further clarification: what platform was used? Was the interaction through videoconference, an app, or another medium?

Method

- The methods section contains important information, but several areas could be improved to enhance clarity, methodological robustness, and transparency. I believe the section will be more understandable if all standard subsections are included, such as: Study Design, Population and Sample, Data Collection Procedures, Intervention, Ethical Considerations, and Data Analysis.
- The method mentions that the intervention lasted 16 weeks but does not describe what it was or how it was conducted. Please provide details of the intervention and how it was implemented. Specify the data collection period by including the months, and explain the rationale for this period.
- Recruitment was conducted through various means, including healthcare services, flyers, and outreach, but the acceptance rate or population response is unclear.
- Exclusion criteria are well detailed, but excluding older adults with "motor sequelae of stroke" or other severe conditions could be better justified, especially if these conditions do not directly prevent participation in the intervention.
- Although the qualitative data collection is described, it is unclear whether the open-ended questionnaires were standardized across participants.

Were these validated questionnaires? How were they administered? Were responses collected by researchers, and were they evaluated? This is a significant limitation. Please detail all processes.

- Why was content analysis based on Bardin's methodology used? It would be useful to describe in more detail how categories and subcategories were defined and how the researcher handled discrepancies in the analysis (if any).
- The use of video calls for collecting qualitative data is mentioned, but there is no discussion of the potential limitations of this approach, such as internet access issues or technical problems. This should be detailed—were there any possible biases?
- Although the number of participants (not directly mentioned) is addressed in terms of inclusion criteria, there is no justification for the sample size. Was a sample size calculation performed? How was the number determined?
- It would also be beneficial to provide more information on study implementation, such as how the reliability of qualitative data collection was ensured and a clearer explanation of the recruitment and sampling process. This would enhance the study's transparency and methodological quality.

Results

- The results presented include absolute and relative descriptive analyses; however, since this is described as a qualitative study, the exclusive focus on quantitative analyses needs to be reviewed.
- In Table 2, there is an "n" of 124. What does this number represent? The table layout does not clarify how this "n" was obtained. Is it the total number of different responses? I suggest presenting the responses of all 50 participants for each question, using the correct "n" of 50, which is the total number of participants.
- Regarding Figure 1, is there a repetition of information from Table 2? The percentage sum totals 99.9%, missing 0.1% to reach 100%. Also, the graph's visualization needs improvement to make the information clearer.
- The same issue occurs with Table 3 and Figure 2.
- Throughout the text, the citation of tables and graphs in the results section is quite redundant, repeating information already presented in the tables. It would be better to choose a single way to present the data.
- The study presents important methodological inconsistencies and issues. First, it is described as qualitative, yet only quantitative analyses are provided. Additionally, the different "n" values in the tables suggest that participants did not respond to the same questionnaire, and the sample selection and study development are unclear. The description suggests an intervention was conducted, but the intervention itself is not detailed. Could the type of intervention be clarified? Was there actually an intervention? Or is this an observational study as described in the methods? The questionnaire used does not appear to be validated or standardized.
- I recommend greater methodological rigor to ensure consistency and reliability of the data presented.

Discussion

- The discussion includes relevant studies and interesting analysis; however, it lacks clear organization and structure to meet the expected standard of scientific writing. Since the results are unclear, I suggest improving the presentation and interpretation of the findings, and including a stronger discussion that engages with both national and international literature. With clearer results, the discussion can be deepened.
- It is also important to note that the study has significant limitations, including the study design, sample selection, questionnaire used, response standardization, and inconsistent "n" values—all of which require revision. After these corrections, I suggest the following reformulation for the discussion:
- Paragraph 1: Present the main findings narratively and qualitatively, avoiding repetition of numbers from the results section. Focus on describing the results generally, highlighting the most important discoveries.
- Paragraph 2: Discuss how the main findings relate to the existing literature. Present previous studies that support or contrast with the current study's results, establishing a link between what was found and what is already known.
- Paragraph 3: Explore other results from the study and discuss how they relate to the literature. Examine potential discrepancies or new insights and how they contribute to advancing knowledge in the area.
- Paragraph 4: Assess the strengths and weaknesses of the study. Discuss methodological robustness and possible limitations, such as sample size, result

generalizability, or any factor that may have influenced the findings.
- Paragraph 5: Interpret the results, highlighting their practical and scientific implications. Reflect on how the findings may impact professional practice, especially in the context of MoveSUS usability, and what future directions research in this field could take.
- Paragraph 6: Present the conclusions, summarizing the main message of the study. This paragraph should synthesize what the study adds to the field of knowledge, reinforce the relevance of the findings, and suggest future applications or research based on the conclusions.

Conclusion
- I suggest the results be reviewed and adjusted to better meet the study's objectives. After this reformulation, the conclusion should focus specifically on clearly and objectively addressing the objective, strengthening the study's coherence.

References
- Among the 26 references, 8 are over five years old. It is recommended to update them and format according to the journal's guidelines.

Final Recommendation (Decision)
- Major revisions required.

Reviewer B
Anonymous

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, including the sections: introduction, methods, results, and discussion (with the conclusion as part of the discussion)?
  Yes
- Is the title brief, sufficiently specific, and descriptive of the work? (up to 100 characters)
  Yes
- Is the language appropriate? Is the text clear, precise, and objective?
  Yes
- Was any indication of plagiarism found in the manuscript?
  No
  Suggestions/comments:
- No comments

Abstract
- Are the abstract and resumo appropriate (containing: objective, information about the study participants, studied variables, main results, and a conclusion) and do they reflect the manuscript content?
  Yes
  Suggestions/comments:
- No comments

Introduction
- Is the research problem clearly stated and well defined?
  Yes
- Is the research problem adequately contextualized in relation to the available knowledge, progressing from general to specific?
  Partly
- Are the reasons that justify the need for the study (including the authors' assumptions about the problem) well established?
  Partly
- 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:
- Page 3, paragraph 2, line 1 – "Interventions focused on fall prevention in older adults aim to reduce fall rates and risks..."
- Are these interventions focused on older adult fallers specifically, or on older adults in general—or both? In this study, what is the definition of older adult fallers? I suggest specifying the target population of these interventions.
- Page 3, paragraph 3, lines 7–8 – "However, the assessment of the quality of these remote services is scarce, and in the current scientific literature, the evaluation methods are not well standardized."
- What exactly is meant by "quality assessment of these services"? Which evaluation methods are not well standardized? I suggest including examples of

these methods to clarify the statement.
- Page 3, paragraph 4, line 2 – "Quality variables analyzed in research on the topic in an online format are varied."
- Which quality variables are analyzed? I suggest expanding the sentence to cite some of these variables used in online-format studies.
- Page 4, line 3 – "...using remote tools for prescribing and monitoring an exercise program."
- Which remote tools? It is important to specify the tools referred to for prescribing and monitoring programs.
- Page 4, paragraph 2, lines 1–2 – "Therefore, despite advances in the number of studies on fall prevention programs for older adults..."
- Which studies are these? Are they about older adults with two or more falls—i.e., older adult fallers? The references are missing. I suggest including them.
- Page 4, paragraph 2, lines 2–4 – "...the scientific literature shows a lack of studies that specifically analyze the operational characteristics of online-format programs."
- Which studies show this gap? I suggest adding references to support this statement.
- Page 4, paragraph 2, lines 4–7 – "Existing research more often analyzes effects of programs from randomized clinical trials in a face-to-face format, not specifically for older adults, mostly conducted in developed countries, or unrelated to the pandemic period."
- What were the studied populations in these studies? Of these face-to-face or online studies, how many targeted older adults, especially fallers?
- Page 4, paragraph 3, lines 6–8 – "Therefore, the aim of this study was to analyze the reasons for participation and retention of older adults who had experienced at least two falls in the past year in a multidisciplinary case management program for fall prevention delivered remotely."
- Are older adults with at least two falls in the past year considered fallers? According to the literature, fallers are identified as individuals who have had at least two falls in the past 12 months. To align the study's objective with the abstract and conclusion, this definition should be clearly stated in the introduction.

Methods

- Are the methodological procedures generally appropriate for studying the research problem?
  Yes
- Are the methodological procedures used in the study sufficiently detailed?
  Yes
- Was the participant selection/recruitment process appropriate and clearly described?
  Yes
- Were data collection instruments, their psychometric properties (e.g., reliability, internal consistency, validity), and operational definitions of variables described when relevant?
  Partly
- Is the data analysis plan appropriate and well described?
  Yes
- Were the inclusion/exclusion criteria adequately described and appropriate?
  Yes
- Did the authors provide information on the ethical procedures followed in the study?
  Yes

Suggestions/comments:
- Page 5, paragraph 2, lines 3–4 – "Eligibility criteria included community-dwelling older adults aged 60 or over, living in any region of Brazil, not residing in long-term care institutions, and with a history of falls or more in the past year."
- History of two or more falls? The sentence is incomplete. I suggest rewriting it to correct the missing words.
- Page 5, paragraph 2, lines 4–5 – The inclusion criteria mention older adults with a history of at least two falls in the past 12 months. Based on the literature, what was the definition of a fall used in this study? For example, some studies define a fall as: "an unintentional change in position resulting in coming to rest at a lower level." I suggest including the definition of a fall and describing how it was explained to participants.

Results

- Is the use of tables and figures appropriate and does it facilitate the communication of the study's findings?
  Yes
- Is the number of illustrations in accordance with the journal's submission guidelines?
  Yes
- Are participant numbers and reasons for dropouts/

refusals presented?
Yes
- Are participant characteristics adequately presented?
Partly
- Are results adequately presented, highlighting the main findings and avoiding unnecessary repetition?
Yes

Suggestions/comments:
- Page 7, paragraph 1, line 1 – "The study sample consisted of 50 older adults."
- How many had only 2 falls? How many had 3 or more? I suggest including in Table 1 the number of participants with 2, 3, or more falls in the past 12 months.
- Page 7, paragraph 3, line 1 – Currently labeled as "Graph 1." As per RBAFS guidelines, figures should be labeled "Figure 1," "Figure 2," etc. I suggest revising this.
- Page 7, paragraph 3 – Among the 50.8% who reported "falls" as a reason for participation, what was the distribution of the number of falls (2, 3 or more)? Could the number of falls have influenced this reason? Please elaborate.
- Page 7, paragraph 5, line 1 – The same issue applies to "Graph 2." Replace with "Figure 2" and update the corresponding caption and references in the text.

Discussion

- Are the main findings presented?
Yes
- Are limitations and strengths of the study presented and discussed?
Yes
- Are results discussed considering the study's limitations and existing knowledge?
Partly
- Do the authors discuss the potential contributions of the findings for scientific development, innovation, or practical application?
Yes

Suggestions/comments:
- Page 8, paragraph 1, lines 1–7 – The comparison with two other studies should briefly mention what the "similar characteristics" are.
- Page 8, paragraph 2, lines 2–4 – Were participants followed up after the 16-week program? Did the activities truly prevent further falls? How many participants avoided falls afterward? If not assessed, this could be a limitation. Please address.
- Previous studies (refs 16 and 17), which used the same protocol, should be discussed. How does the current study add to previous knowledge? Why was the same protocol used?
- References 16 and 17:
- 16. Alberto SN et al. A Case Management Program at Home to Reduce Fall Risk in Older Adults (the MAGIC Study): Protocol for a Single-Blind Randomized Controlled Trial (Preprint). JMIR Res Protoc. 2022;11(6):e34796. DOI: https://doi.org/10.2196/preprints.34796.
- 17. Alves JE et al. Effects of a cognitive stimulation program on physical and cognitive dimensions in community-dwelling faller older adults with cognitive impairment: study protocol. BMC Neurol. 2023;23(1):107. DOI: https://doi.org/10.1186/s12883-023-03154-1.

Conclusion

- Is the study conclusion adequately presented and consistent with the objective?
Partly
- Is the conclusion original?
Yes

Suggestions/comments:
- Page 10, paragraph 2, lines 1–6 – Understanding the reasons for participation and continued engagement of older adult fallers in a remote fall prevention program helps improve public policies aimed at preventing or reducing falls and their possible negative outcomes for the older population. Therefore, the importance of actions and public policies to promote greater participation in this topic among other groups, such as men, older seniors, and those with lower educational levels, is emphasized.
- The term "older adult fallers" was presented in the abstract and conclusions. It is necessary to define, based on the literature, what is meant by "older adult fallers" in the introduction of this article.
- How was the following conclusion drawn: "helps improve public policies aimed at preventing or reducing falls and their possible negative outcomes for the older population"? Was there a follow-up study after the remote fall prevention program was delivered? Was there any control over the number of falls among these older adult fallers after the 16-week program (follow-up)? If no follow-up was

conducted after the 16 weeks, the authors might suggest that remote fall prevention programs may assist in the improvement of public policies to prevent or reduce falls and their possible negative outcomes for the older population. However, such a statement cannot be asserted if this analysis was not conducted in the present study—unless such analysis was indeed performed and the results supporting this claim can be included.

References

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

General comments:

- Previous studies 16 and 17, which used the same protocol as the basis for this intervention, should be included among the references in the discussion section of the present study. The authors should address the potential knowledge advances brought by the current study compared to those previous studies and the reasons for using the same protocol.
- Alberto SN, Ansai JH, Janducci AL, Florido JVB, Novaes ADC, Caetano MJD, et al. A Case Management Program at Home to Reduce Fall Risk in Older Adults (the MAGIC Study): Protocol for a Single-Blind Randomized Controlled Trial (Preprint). JMIR Res Protoc. 2022;11(6):e34796. DOI: https://doi.org/10.2196/preprints.34796.
- Alves JE, et al. Effects of a cognitive stimulation program on physical and cognitive dimensions in community-dwelling faller older adults with cognitive impairment: study protocol. BMC Neurol. 2023;23(1):107. DOI: https://doi.org/10.1186/s12883-023-03154-1.

Final Recommendation (Decision)

- Minor revisions required.