



Engaging relatives in nursing home residents' well-being: exploring interest in a dyad physical activity program

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Abstract

Background Older people often have reduced levels of physical activity, especially in nursing home settings.

Objectives The primary aim of this study was to assess the willingness of people who have a relative in a nursing home to actively participate in a joint physical activity program (referred to as a dyad physical activity program). The secondary aims were to explore the specific forms of participation that interested individuals would consider and to compare the characteristics of those who were interested in the project with those who were not.

Method This is an online survey carried out among people with relatives living in nursing homes in Belgium. A self-administered questionnaire was designed to collect data on socio-demographics, nursing home visits, level of physical activity and preferences for dyadic physical activity.

Results Of 226 participants in this survey, 155 (68.6%) expressed interest in the dyad physical activity program. The preferred format included frequency of 1 or 2 days per week (62%), duration of 30 min (62.3%), focus on well-being (50%), conducted in a group with other residents and their informal caregivers and supervised by a coach (63.3%). An analysis comparing interested participants to their non-interested counterparts showed that those expressing interest tended to be of a younger age ($p=0.01$), more likely to be in a relationship ($p<0.001$), spent longer visiting their loved ones ($p=0.007$), and primarily engaged in spending quality time with them ($p<0.001$).

Conclusion The significant interest expressed by the respondents has encouraged a proposal for the future practical implementation of the project. This proposal aligns with our findings in terms of frequency, duration, type of physical activity and supervision preferred by the majority of respondents.

Keywords Physical activity · Exercise · Older people · Dyad · Nursing homes

Introduction

The ageing of the population is a worldwide occurrence (Abud et al. 2022), which leads to a rising requirement for long-term care facilities (Heiks and Sabine 2022). Nursing homes, which are intended to offer comprehensive care for older people, have become a crucial component of eldercare.

The well-being and quality of life of residents in nursing homes frequently rely on both the nursing care they receive and the social and emotional assistance provided by their families (Hovenga et al. 2022). In recent years, there has been an increased appreciation of the significance of engaging family members in the care and activities of their relatives residing in nursing homes (de Klerk et al. 2021; Puurveen et al. 2018). Thus, informal care refers to any help given to an individual in need by someone in their immediate circle (Lindt et al. 2020). This may include less intensive forms of assistance, as well as support offered to household members or those who are institutionalised. Examples of informal care vary widely and may include emotional support, administrative aid, advice on scheduling, transportation and assistance with household as well as personal care. This informal care is provided without compensation, arises from social rather than professional relationships and entails

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extended assistance for ill family members or friends (Chen et al. 2022; Lindt et al. 2020).

Physical activity is a fundamental aspect of maintaining and improving the health and well-being of older adults (Hung et al. 2023). Engaging in physical activity can improve physical fitness, reduce the risk of chronic diseases, and promote psychological well-being as well as quality of life (Langhammer et al. 2018; Sun et al. 2013). Much attention has been paid to physical activity in nursing homes (Buckinx et al. 2023) and the International Association of Gerontology and Geriatrics (IAGG) and the World Health Organization (WHO) have emphasized the importance of physical exercise in the quality of nursing home care (Tolson et al. 2011). Recently, there is a growing interest in exploring the involvement of family members in these activities, especially in the context of dyad physical activity programs (Farina et al. 2021; Prick et al. 2016; Winters-Stone et al. 2021; Zeng et al. 2021), where both the older people and their family member participate together. For example, the study by Winters-Stone et al. has shown the feasibility of dyad physical activity program during radiation therapy for prostate cancer (Winters-Stone et al. 2021). Other authors have shown the efficacy of such intervention on blood pressure control, dyadic relationships and psychological well-being of family dyads (Zeng et al. 2021). A systematic review has also shown that people who have more support from family members for exercising are more likely to be active (Lindsay Smith et al. 2017). However, very few studies in this area have been carried out in nursing homes.

To fill the gap in the literature, this study aims to explore the interest of relatives of nursing home residents (i.e. informal caregivers) in engaging in dyadic physical activities with their loved ones. By shedding light on the perspectives of family members, we hope to pave the way for innovative approaches to improving the physical and emotional well-being of nursing home residents through inclusive and collaborative activities.

Methods

Study design

This is a survey carried out between February and April 2023 (11 weeks) using the *Sondage Online* software. The protocol of this study has been approved by the hospital-faculty ethics committee of the University of Liège (number 2022/339).

Study population

All people who had a relative (i.e. family member or friend) living in a nursing home in the French part of Belgium and

who were able to read and understand the French language were invited to participate in the survey. There were no specific exclusion criteria.

Participants were recruited in three ways. Firstly, the link to the questionnaire was circulated on social networks (i.e. Facebook, Instagram and WhatsApp). Secondly, an email was sent to 600 nursing homes in Wallonia, based on a directory available on the Internet. The directors of these nursing homes were asked, by email, to put up a poster with a link to our online survey. Thirdly, we personally visited 10 nursing homes in the province of Liège to ask the director to display the survey poster.

Data collected

An online questionnaire was created using the *sondage online* software. A pre-test was carried out on 10 adults close to us. Following the pre-test, few changes had to be made to the questionnaire. Only the mathematical signs (e.g. >, <) were not universally understood and were replaced by text in the final version of the questionnaire.

The questionnaire consists of five sections with different questions, as detailed below.

– Socio-demographic data:

Respondents were asked about their age, sex, weight and height (used to calculate body mass index (BMI)), marital status, parental status (presence/absence and number of children), number of people living in the same household, occupational status, possible involvement in voluntary activities and their perception of their health. This section contains mainly closed, single-choice questions. These were supplemented by a few open-ended questions that allowed participants to provide additional details, optionally. Participants could choose not to answer certain questions.

– Nursing home visit:

This section allowed us to gather information about the person being visited and to assess the level of involvement of the close relative (or informal caregiver) in their life. More specifically, we were able to address the following questions: Where is the person being visited institutionalised? How many times a week do these visits take place and how long do they last on average? What is the family or friendship relationship between the visitor and the person being visited? What are the reasons for these visits? What are the challenges faced by the person institutionalised in a nursing home? The questions in this section were primarily structured as closed-ended single-choice questions, one multiple-choice question and a few open-ended questions. We provided the *other* option.

– Level of physical activity:

We used the validated *International Physical Activity Questionnaire* (short French version) to assess participants' overall physical activity and sedentary behaviour (Craig et al. 2003). The questions asked about the time spent in physical activity (vigorous activity, moderate activity, walking for at least 10 min at a time) and time spent sitting in the past 7 days. This assessment made it possible to classify the individual into three activity levels: inactive, moderate and vigorous, using the formula MET (Metabolic Equivalent of Task) level \times minutes of activity per day \times days per week, resulting in a score expressed in MET minutes per week (Craig et al. 2003).

– Preferences for dyad physical activity program:

This section aimed to provide insights into the future, capturing the aspirations of motivated individuals and understanding how they envisioned the proposed program. The initial question served to confirm the readiness of the respondent to engage in the project. If the answer was negative, respondents were automatically directed to the subsequent section.

For those who answered yes, we asked a series of questions presented mainly in multiple-choice format. There was also the option to provide extra information to help us better understand their preferences and desires. These inquiries aimed to determine the preferred frequency, duration, type, and optimal supervision for the dyad physical activity program.

– Access to the survey and participant contact information:

In this final section, we have provided an option for individuals who wish to be contacted for future studies and informed about the progress of this report to give their contact information. We also wanted to know how they accessed the survey (i.e. online, paper version, poster in the nursing homes), in order to identify the most effective method that generated the most responses.

Results

Characteristics of the population

A total of 266 people were included in this survey. Their characteristics are shown in Table 1. The median age of the participants was 57 years, with an interquartile range of 46 to 66 years. Of these, 78.9% were women. The median BMI for all participants was 24.2 (21.8–27.3) kg/m². The median PA level of the respondents was 240 (0–1119.6) METs/min/week. Of these participants, 137 had a PA level classified as *inactive* (58.8%), while 96 had a level of PA classified as *moderate* (41.2%).

Nursing home visit

Information on the typical components of a routine visit between the resident and their relative is presented in Table 2.

Participants were asked to provide the name of the nursing home where their relative was staying. A total of 45 different nursing homes were identified in the Walloon region (Belgium). These nursing homes can be divided into two categories, with the percentages being quite similar: 43% of the nursing homes are public and 47.7% private.

Regarding the frequency of visits per week, Table 2 shows that 43.6% of respondents visit their relative 1–2 day(s)/week; 22% of respondents chose the *other* option and the majority of them visit their relative 2 times a month. Then, the median duration of visits is estimated at 60 (45–120) minutes and the most common person visited is a parent (55.6% of cases). The main reason for visiting a nursing home is to spend time with their relative, which accounted for 94.6% of responses. Finally, the most common difficulties experienced by the person visited was physical difficulties (37.8%).

Preferences for dyad physical activity program

Of the 226 people who responded to the question about their interest in the dyad physical activity program, 71 (31.4%) were not interested and 155 (68.6%) were interested.

The frequency with the highest response was 1–2 days per week and the duration chosen by 32.3% of the respondents was 30 min. Then, 50% of respondents indicated a preference for *wellness* type activities. The majority of respondents (63.3%) prefer face-to-face, group activities (i.e. other residents and their informal caregiver) with a coach (Table 3).

Comparison of people interested and not interested in the dyad physical activity program

Responses from participants interested in the dyad physical activity program were compared with those not interested (Table 4).

In fact, those who were interested were significantly younger (57 (49–63) years) than those who were not interested (61 (52.3–70) years) $p = 0.01$. Interested people were also more likely to live with a partner (23.6%) compared to those who were not interested (9%) ($p = 0.00002$). However, the proportion of married people was higher among the uninterested (56.4%) than among the interested (49.3%) ($p = 0.007$). Of those interested, 15.5% were single compared to 11.5% of those not interested ($p = 0.01$). Then, the median duration of visits for those interested was

Table 1 Characteristics of the study population ($N=266$)

Variables	N	Median	P25–P75	n	%
Age (years)	266	57	46–66	–	–
Sex ratio (women: men)	266	–	–	210: 56	78.9: 21.1
BMI (kg/m^2)	243	24.2	21.8–27.3	–	–
Marital status	265	–	–	–	–
<i>Single</i>	–	–	–	42	1.8
<i>Couple</i>	–	–	–	54	20.4
<i>Widowed</i>	–	–	–	21	7.9
<i>Divorced</i>	–	–	–	21	7.9
<i>Married</i>	–	–	–	124	46.8
<i>Other</i>	–	–	–	3	1.1
Children	265	–	–	–	–
<i>Yes</i>	–	–	–	193	72.8
<i>No</i>	–	–	–	72	27.2
Number of children	191	2 (2–3)	–	–	–
Number of persons living in the same household	263	–	–	–	–
<i>Alone</i>	–	–	–	59	22.4
<i>With 1 person</i>	–	–	–	98	37.3
<i>With more than 1 person</i>	–	–	–	103	39.2
<i>Do not wish to reply</i>	–	–	–	3	1.1
Active professionally	263	–	–	–	–
<i>Yes</i>	–	–	–	140	53.2
<i>No</i>	–	–	–	123	46.8
Details for those not in employment	124	–	–	–	–
<i>Retired</i>	–	–	–	85	68.5
<i>Student</i>	–	–	–	21	16.9
<i>Unemployed</i>	–	–	–	5	4
<i>Other</i>	–	–	–	13	10.5
Profession, former profession, medical studies	236	–	–	–	–
<i>Yes</i>	–	–	–	60	25.4
<i>No</i>	–	–	–	176	74.6
Voluntary work	258	–	–	–	–
<i>Yes</i>	–	–	–	65	25.2
<i>No</i>	–	–	–	193	74.8
Own perception of global health	256	–	–	–	–
<i>Excellent</i>	–	–	–	23	9
<i>Very good</i>	–	–	–	76	29.7
<i>Good</i>	–	–	–	136	53.1
<i>Poor</i>	–	–	–	15	5.9
<i>Very poor</i>	–	–	–	6	2.3
Level of physical activity (METs-min/week)	233	240	0–1119.6	–	–

75 min (50–120 min), significantly longer than the 60 min (30–90 min) observed for those not interested ($p=0.007$). Finally, among the reasons for visiting, it is worth noting that those who are interested are significantly more likely to visit their institutionalised relatives to spend time with them, with a percentage of 99.3% compared to 85.9% of those who are not interested ($p<0.0001$). Those who were interested were also more likely to be involved in providing

basic care (15.5% compared with 3.8% of those who were not interested; $p<0.0001$). They were also more likely to drive their relatives around (27% vs 16.7%; $p=0.0002$). They were also more likely to provide food (25.7% vs 17.9%, $p=0.0009$) and do their relative's laundry (41.2% vs 39.7%, $p=0.0002$). People who are interested also provide more administrative support to their relative (20.3% vs. 19.2%; $p=0.03$).

Table 2 Nursing home visit

Variables	N	Median	P25–P75	n	%
Type of nursing home	256	–			
<i>Public</i>	–	–	–	110	43
<i>Private</i>	–	–	–	122	47.7
<i>I don't know</i>	–	–	–	24	9.4
Number of day(s)/week of visit	241				
7 days	–	–	–	14	5.8
5–6 days	–	–	–	19	7.9
3–4 days	–	–	–	50	20.7
1–2 day(s)	–	–	–	105	43.6
<i>Other</i>	–	–	–	53	22
Length of visit (minutes)	236	60	45–120	–	–
Person visited	241	–			
<i>Spouse</i>	–	–	–	12	5
<i>Parent</i>	–	–	–	134	55.6
<i>Grandparent</i>	–	–	–	36	14.9
<i>Brother / Sister</i>	–	–	–	8	3.3
<i>Cousin</i>	–	–	–	3	1.2
<i>Friend</i>	–	–	–	1	0.4
<i>Neighbour</i>	–	–	–	2	0.8
<i>Other</i>	–	–	–	45	18.7
Reason(s) for visit*	241	–			
<i>Sharing time together</i>	–	–	–	228	94.6
<i>Basic care</i>	–	–	–	27	11.2
<i>Laundry</i>	–	–	–	95	39.4
<i>Drugs</i>	–	–	–	4	1.7
<i>Food</i>	–	–	–	55	22.8
<i>Transport</i>	–	–	–	55	22.8
<i>Budget</i>	–	–	–	33	13.7
<i>Administrative</i>	–	–	–	45	18.7
<i>Other</i>	–	–	–	25	10.4
Difficulties of the person visited	241	–			
<i>Physical difficulties</i>	–	–	–	91	37.8
<i>Mental difficulties</i>	–	–	–	32	13.3
<i>Physical and mental difficulties</i>	–	–	–	88	36.5
<i>Other</i>	–	–	–	30	12.4

*Several possible answers

Discussion

The research investigates whether nursing home residents' relatives are interested in participating in a dyad physical activity program with the resident.

A total of 266 individuals completed the survey. They had a median age of 57 years and most of them were married, professionally active women. They visited their institutionalised relative mainly to spend time with him/her. Our respondent shares characteristics with informal caregivers mentioned in existing literature. Typically, informal

Table 3 Preferences for dyad physical activity program

Variables	N	n	%
Number of day(s)/week	226	–	–
> 4 days/week	–	3	1.3
3–4 days/week	–	17	7.5
1–2 day(s)/week	–	96	42.5
0 day/week	–	71	31.4
<i>Other</i>	–	39	17.3
length of physical activity	151	–	–
30 min	–	94	62.3
1 h	–	29	19.2
1h30	–	3	2
2 h	–	4	2.6
<i>other</i>	–	21	13.9
Type of physical activity*	150	–	–
<i>Well-being</i>	–	75	50
<i>Body and mind</i>	–	39	26
<i>Cardiovascular</i>	–	29	19.3
<i>Muscle strengthening</i>	–	44	29.3
<i>Combined</i>	–	62	41.3
<i>Other</i>	–	42	28
Methods used for physical activity *	150	–	–
<i>Online, via a website (pre-recorded videos)</i>	–	18	12
<i>Online, live with a coach</i>	–	14	9.3
<i>Online, via a mobile application (pre-recorded videos)</i>	–	15	10
<i>Online, via a mobile application (written instructions)</i>	–	10	6.7
<i>Face-to-face, just with your relative one and a coach</i>	–	66	44
<i>Face-to-face, in a group (other residents and their relatives) and a coach</i>	–	95	63.3
<i>Via a booklet</i>	–	14	9.3
<i>Other</i>	–	17	11.3

*Several possible answers

caregivers are mostly aged between 50 and 75 years and help their parents or partners. Women, in particular daughters or daughters-in-law, are more commonly informal caregivers (De Koker 2009).

Our results indicates that out of 226 participants, 155 expressed interest in a dyad physical activity program, where both the older people and the informal caregiver participate together. In addition, 66 participants also provided their contact information to be reached if a future interventional study is implemented. More interestingly, people were surveyed about their favourite physical activities and how they prefer to participate in such a program. In brief, most participants favoured doing a dyad physical activity program aimed at improving their well-being. They preferred doing it “in-person”, in a group that includes other residents and their relatives and coached by a professional. They were inclined to

Table 4 Comparison of people interested and not interested in the dyad physical activity program

Variables	Interested people				Not interested people				P-value
	N	Median	P25–P75	%	N	Median	P25–P75	%	
Age (Years)	148	57	49–63	–	78	61	52,3–70	–	0.01
Sex (women: men)	148	–	–	120: 28	78	–	–	56: 22	0.1
BMI (kg/m ²)	141	24	21.8–27.1	–	71	24.5	22–27.6	–	0.6
Marital status	148	–	–	–	78	–	–	–	0.04
<i>Single</i>	–	–	–	23	–	–	–	9	0.01
<i>Couple</i>	–	–	–	35	–	–	–	7	0.00002
<i>Widowed</i>	–	–	–	9	–	–	–	9	1
<i>Divorced</i>	–	–	–	7	–	–	–	8	0.8
<i>Married</i>	–	–	–	73	–	–	–	44	0.007
<i>Other</i>	–	–	–	1	–	–	–	1	1
Children	148	–	–	–	78	–	–	–	0.9
<i>Yes</i>	–	–	–	111	–	–	–	58	–
<i>No</i>	–	–	–	37	–	–	–	20	–
Number of children	112	2	2–3	–	58	2	2–3	–	0.4
Number of persons living in the same household	148	–	–	–	78	–	–	–	0.5
<i>Alone</i>	–	–	–	33	–	–	–	16	–
<i>With 1 person</i>	–	–	–	54	–	–	–	36	–
<i>With more than 1 person</i>	–	–	–	60	–	–	–	26	–
<i>Do not wish to reply</i>	–	–	–	1	–	–	–	0	–
Active professionally	148	–	–	–	78	–	–	–	0.06
<i>Yes</i>	–	–	–	84	–	–	–	34	–
<i>No</i>	–	–	–	64	–	–	–	44	–
Details for those not in employment	65	–	–	–	44	–	–	–	0.7
<i>Retired</i>	–	–	–	45	–	–	–	35	–
<i>Student</i>	–	–	–	10	–	–	–	5	–
<i>Unemployed</i>	–	–	–	3	–	–	–	1	–
<i>Other</i>	–	–	–	7	–	–	–	3	–
Profession, former profession, medical studies	138	–	–	–	70	–	–	–	0.2
<i>Yes</i>	–	–	–	37	–	–	–	13	–
<i>No</i>	–	–	–	101	–	–	–	57	–
Voluntary work	147	–	–	–	78	–	–	–	0.4
<i>Yes</i>	–	–	–	42	–	–	–	18	–
<i>No</i>	–	–	–	105	–	–	–	60	–
Representation of the participant's health	148	–	–	–	78	–	–	–	0.9

Table 4 (continued)

Variables	Interested people				Not interested people				P-value
	N	Median	P25–P75	%	N	Median	P25–P75	%	
<i>Excellent</i>	–	–	–	10.1	–	–	–	9	–
<i>Very good</i>	–	–	–	30.4	–	–	–	23	–
<i>Good</i>	–	–	–	50.7	–	–	–	41	–
<i>Poor</i>	–	–	–	6.1	–	–	–	6	–
<i>Very poor</i>	–	–	–	2.7	–	–	–	1	–
Level of physical activity (METs-min/week)	148	379.8	0–1200	–	78	207.9	0–912.85	–	0.2
<i>Inactive</i>	–	–	–	57.4	–	–	–	47	–
<i>Moderate</i>	–	–	–	42.6	–	–	–	31	–
Type of nursing home	148	–	–	–	78	–	–	–	0.3
<i>Public</i>	–	–	–	38.5	–	–	–	37	–
<i>Private</i>	–	–	–	51.4	–	–	–	37	–
<i>I don't know</i>	–	–	–	10.1	–	–	–	4	–
Number of day(s)/week of visit	148	–	–	–	78	–	–	–	0.2
<i>7 days</i>	–	–	–	5.4	–	–	–	4	–
<i>5–6 days</i>	–	–	–	10.1	–	–	–	3	–
<i>3–4 days</i>	–	–	–	23.6	–	–	–	13	–
<i>1–2 day(s)</i>	–	–	–	41.9	–	–	–	35	–
<i>Other</i>	–	–	–	18.9	–	–	–	23	–
Length of visit (minutes)	146	75	50–120	–	76	60	30–90	–	0.007
Person visited	148	–	–	–	77	–	–	–	0.2
<i>Spouse</i>	–	–	–	5.4	–	–	–	4	–
<i>Parent</i>	–	–	–	64.9	–	–	–	42	–
<i>Grandparent</i>	–	–	–	14.2	–	–	–	9	–
<i>Brother / Sister</i>	–	–	–	2.7	–	–	–	4	–
<i>Cousin</i>	–	–	–	0.7	–	–	–	2	–
<i>Friend</i>	–	–	–	0	–	–	–	1	–
<i>Neighbour</i>	–	–	–	0	–	–	–	1	–
<i>Other</i>	–	–	–	12.2	–	–	–	14	–
Reason(s) for visit*	148	–	–	–	78	–	–	–	0.000003
<i>Sharing time together</i>	–	–	–	99.3	–	–	–	67	–
<i>Basic care</i>	–	–	–	15.5	–	–	–	3	–
<i>Laundry</i>	–	–	–	41.2	–	–	–	31	–
<i>Drugs</i>	–	–	–	2	–	–	–	0	–
<i>Food</i>	–	–	–	25.7	–	–	–	14	–
<i>Transport</i>	–	–	–	27	–	–	–	13	–

Table 4 (continued)

Variables	Interested people				Not interested people				P-value
	N	Median	P25–P75	%	N	Median	P25–P75	%	
Budget	–	–	–	13.5	–	–	–	14.1	0.1
Administrative	–	–	–	20.3	–	–	–	19.2	0.03
Other	–	–	–	40	–	–	–	60	0.7
Difficulties of the person visited	148	–	–	–	78	–	–	–	0.2
Physical difficulties	–	–	–	39.2	–	–	–	32.1	–
Mental difficulties	–	–	–	15.5	–	–	–	10.3	–
Physical and mental difficulties	–	–	–	36.5	–	–	–	41	–
Other	–	–	–	8.8	–	–	–	16.7	–

*Several possible answers

do it once or twice a week, for 30 min. We will now discuss the details of this proposal.

Firstly, the favoured form of physical exercise is *well-being* activities (e.g. massages). Based on the scientific literature, massage offers can be used to enhance the health and well-being of the older people (McFeeters et al. 2016). In fact, massage positively influences factors such as pain, sleep, emotional status and psychosocial health. Then, massage is beneficial for older people because of its sensory and proprioceptive stimulation (Caire et al. 2020). These act on the body's schema, helping them to adapt their position and movement, which can reduce the risk of falling (Caire et al. 2020). There is also evidence that massage benefits the patients and the organisation by reducing the need for restraint and pharmacological intervention (McFeeters et al. 2016). It is essential to note that, although massages have undeniable benefits for the well-being of the older people, they are not sufficient when it comes to improving physical performance and reducing the risk of falls. In this regard, it is important to offer muscle strengthening and balance activities in addition to massages (Sherrington et al. 2020). Targeted exercises for muscle strengthening and balance significantly contribute to offer a more comprehensive and holistic approach to promoting the health of the older adults.

Secondly, the preferred mode of physical activity was *in person*. Current literature shows that remote physical exercise using a web technology or booklets at home are feasible and acceptable among older people (Buckinx et al. 2021; Granet et al. 2023). Nevertheless, certain barriers to online physical activity have been revealed for older people: (1) the technology itself: variety of systems (PC, MAC, tablets, computers), difficulty in understanding and using technology devices, need to teach technology to older adults, and (2) the clinical aspects: test set-up and safety, difficulty in providing remote assistance, seeing the whole body during zoom sessions and providing feedback on exercises, and difficulty in perceiving pain and limitation or injury (feeling of insecurity) (Buckinx et al. 2021). To overcome these barriers, older people may prefer face-to-face physical activity. In addition, our respondents clearly indicated a preference for group activities, which is consistent with the literature. This suggests that making physical activity more enjoyable and social could encourage residents to exercise more regularly and break away from the relatively monotonous lifestyle of care homes (Teixeira et al. 2012).

Thirdly, older people express a preference for physical activity supervised by a coach. This is consistent with the study by Charles et al. which examined several aspects related to the motivational climate during group exercise sessions in nursing homes (Charles et al. 2020). In this study, participants expressed a desire for the coach to recognise and reward their efforts (Charles et al. 2020). The study by Barrett et al. also shows that a low-contact physical activity

coaching intervention leads to beneficial changes in physical activity, anthropometrics and health-related outcomes in inactive adults attending an outpatient clinic, compared with a no-contact physical activity intervention (Barrett et al. 2020). In the study by Chatfield et al. participants also express a desire for coaching support (Chatfield et al. 2018).

Finally, respondents' preferences in terms of frequency of physical activity are 1 to 2 times a week for 30 min. A systematic review supports this finding, as the majority of older adults prefer to be physically active for about 30 min at a time (Amireault et al. 2018). Older people's preferences are below global guidelines for physical activity. In fact, for substantial health benefits, most clinical guidelines recommend at least 150 min per week of moderate-intensity aerobic physical activity or 75 min per week of vigorous-intensity physical activity (Nikitas et al. 2022). However, WHO recognises that limited physical activity can have health benefits if not fully adhered to.

This study was the first step in a potential project to set up a dyad physical activity program in nursing homes. Because 68.6% of respondents said they were interested in the project, future interventional studies could be considered.

In the following section, we will delve into the limitations of our study, providing a critical assessment of areas where our research may have room for improvement. There is a potential selection bias. Despite the different ways of accessing the questionnaire, the majority of recruitment was via the internet and social networks in particular (53.4%). This predominance of online channels may exclude some people who are less familiar with these platforms or who do not have access. In addition, only volunteers' people were included in this study. It is therefore likely that only people who were interested in the study responded to the survey. Another limitation is that our study focused on nursing homes in the Walloon region. Out of 600 nursing homes in this region, only 45 were represented in this study. This limitation is due to logistical and resource constraints. Finally, there is a possible information bias because not all questions were answered. The length of the questionnaire may be one of the reasons for dropout.

Conclusion

Our study explored the interest of Walloon nursing home residents' relatives in a dyad physical activity program. Results show strong enthusiasm among these relatives (informal caregivers) to engage alongside their loved ones.

The preferred regimen includes 30-min, in-person sessions once or twice a week, guided by a qualified professional in a group setting. This initiative holds promise to enhance the well-being of residents and offers a foundation for future research and implementation.

Authors contribution Fanny BUCKINX: Conceptualization; Methodology; Formal analysis; investigation; Writing—Original Draft; Writing—Review & Editing; Visualization.

Zoé LEROY: Formal analysis; investigation; Writing—Review & Editing.

Olivier BRUYERE: Conceptualization; Methodology; Writing—Review & Editing; supervision.

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Declarations

Ethical statement The study protocol was approved by the ethical comitee of the University of Liège (2022/339). They highlighted that the study did not comply with the provisions of the May 7, 2004 law concerning experiments involving human subjects. The study was conducted in accordance with the Declaration of Helsinki, and approved by Ethics Committee of the University of Liège protocol number(number 2022/339).

Conflict of interest The authors have no competing interests to declare that are relevant to the content of this article.

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