

Journal of Gerontological Social Work



ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/wger20

Older Adults' Views on Social Interactions and Online Socializing Games – A Qualitative Study

Jeroen H. M. Janssen, Evi M. Kremers, Minke S. Nieuwboer, Bas D. L. Châtel, Rense Corten, Marcel G. M. Olde Rikkert & G. M. E. E. (Geeske) Peeters

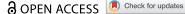
To cite this article: Jeroen H. M. Janssen, Evi M. Kremers, Minke S. Nieuwboer, Bas D. L. Châtel, Rense Corten, Marcel G. M. Olde Rikkert & G. M. E. E. (Geeske) Peeters (2023) Older Adults' Views on Social Interactions and Online Socializing Games – A Qualitative Study, Journal of Gerontological Social Work, 66:2, 274-290, DOI: 10.1080/01634372.2022.2100548

To link to this article: https://doi.org/10.1080/01634372.2022.2100548

9	© 2022 The Author(s). Published with license by Taylor & Francis Group, LLC.
	Published online: 28 Jul 2022.
Ø.	Submit your article to this journal $oldsymbol{arGeta}$
ılıl	Article views: 1231
a a	View related articles 🗹
CrossMark	View Crossmark data ☑



RESEARCH MANUSCRIPT





Older Adults' Views on Social Interactions and Online Socializing Games – A Qualitative Study

Jeroen H. M. Janssen pa,b, Evi M. Kremers pa, Minke S. Nieuwboer b,c, Bas D. L. Châtel (pa,b), Rense Corten (pd, Marcel G. M. Olde Rikkert (pb,e), and G. M. E. E. (Geeske) Peeters (Da,b)

^aDepartment of Geriatric Medicine, Radboud Institute for Health Sciences, Radboud University Medical Center, Nijmegen, The Netherlands; bRadboudumc Alzheimer Center, Radboud University Medical Center, Nijmegen, The Netherlands; 'Academy of Health and Vitality, HAN University of Applied Sciences, Nijmegen, The Netherlands; dDepartment of Sociology/ICS, Utrecht University, Utrecht, The Netherlands; eDepartment of Geriatric Medicine, Donders Institute for Brain, Cognition and Behaviour, Radboud University Medical Center, Nijmegen, The Netherlands

ABSTRACT

Age-related difficulties and quarantine restrictions impede the possibilities to maintain contact with one's social network. Maintaining these contacts may be supported by digital games. To develop effective and feasible digital tools to foster social interaction, we aimed to explore what older adults find important in social contact and what barriers and enablers they foresee in digital gaming interventions as network support aids. Two focus groups and 20 semi-structured interviews (N = 29) with older adults (aged 55-87) were held to explore the research questions. Furthermore, a questionnaire was administered (N = 29) containing measures of loneliness, frailty, and social network size. Participants found 'reciprocity', 'in-person contact', and 'personal connection' important in contact with strong ties. Online games were not used much for socializing but may be used in the future, particularly by less mobile older adults. Future social gaming interventions should be challenging, user-friendly, and offer the possibility to communicate. Digital co-designed interventions that are feasible, challenging, intuitive, and trigger meaningful communication may strengthen social interactions in older adults. They may be a relevant social support tool in periods of interaction limitations due to functional impairment or social isolation.

ARTICLE HISTORY

Received 24 January 2022 Revised 7 July 2022 Accepted 7 July 2022

KEYWORDS

Social contact; digital technology; social isolation; loneliness; qualitative research; co-design

Introduction

Social contacts are of great importance in the lives of older adults. Frequent contact and support from others positively affect their cognitive functioning (Kelly et al., 2017; Zunzunegui et al., 2003) and physical and mental health (Cornwell & Waite, 2009; Resnick et al., 2002). Furthermore, the lack of social contacts is an important risk factor for loneliness (Pinquart & Sorensen, 2010). Considering population aging and the rapid changes in social network composition that may occur in later life (Cornwell et al., 2008), it becomes increasingly important to thoroughly understand what social contacts entail for older adults and how connections can be fostered.

Previous studies have shown that as age increases, we see a decrease in the total social network size (Wrzus et al., 2013), the emotional closeness to network members (Cornwell et al., 2008), and the perceived instrumental support received (Due et al., 1999). The social network is defined as the collection of interpersonal ties that an individual has and maintains with others (Litwin, 1995, 1996). Changes in health and environment, such as loss of partner or a close contact, cognitive impairment, and decreased mobility occur more frequently with age and impede active engagement with this network (Litwin & Stoeckel, 2014; Shiovitz-Ezra, 2013; Van Tilburg, 1990), making older adults a specific risk group for loneliness. Furthermore, the recent SARS-CoV-2 pandemic and the resulting imposed isolation measures greatly restrict the possibilities to socialize in-person, with limited options to compensate for this. Therefore, it is important to understand what aspects of social contact are important to older adults to stimulate and facilitate this social interaction and strengthen social networks.

Digital tools and interventions are increasingly used and offer people the ability to socialize without physically being together, thereby circumventing some of the aforementioned challenges. Games are already used for social engagement by older adults (Ijsselsteijn et al., 2007), and a Wii Bowling exergame intervention showed promising results in decreasing loneliness (Schell et al., 2015). Research on the effectiveness of digital interventions is often limited (Barbosa Neves et al., 2019; Bouwman et al., 2017; Chen & Schulz, 2016; Shah et al., 2021). However, this is primarily due to methodological shortcomings of the studies more so than limitations of the digital interventions themselves (Shah et al., 2021).

Previous qualitative literature has primarily focused on predictors of loneliness (Cohen-Mansfield et al., 2016) or the experience of loneliness and network changes for older adults (Bedard-Thomas et al., 2019; Cohen-Mansfield & Eisner, 2020; Morlett Paredes et al., 2020; Vos et al., 2020). In order to design a digital intervention to strengthen older adults' social interactions, it is crucial to understand what these interactions mean for older adults, rather than focusing on the experience of loneliness. Therefore, in this qualitative study we will explore Dutch older adults' perspectives on what they find important in social contact and the barriers and enablers they foresee for digital interventions in the form of online games to foster social interactions.



Materials and methods

Design and participants

We used a qualitative research design. Data collection methods included focus groups and telephone interviews. The Consolidated Criteria for Reporting Qualitative Research (COREQ) were applied to ensure methodological quality (Tong et al., 2007). This is a checklist to help report all the important information in qualitative studies. Originally, we had planned to conduct 4-6 focus groups. However, after the second focus group, the first wave of COVID-19-related social distancing measures came into effect, and we switched to telephone interviews for the remaining participants. This is warranted as both methods are complementary in qualitative research based on grounded theory and the aim for theme exploration. After the first wave of interviews, initial descriptive analysis revealed a representativeness bias toward vital and highly educated older adults. Following this, we specifically targeted less vital and lower educated older adults to obtain a more representative sample in total.

Participants were recruited specifically for this study through advertisement in a local weekly newspaper, via 'Network100' (www.netwerk100.nl), which is a large group of older adults that works actively for the wellbeing of older adults, and via the personal networks of colleagues and participants. The advertisement was aimed at a study on using digital games to foster social interaction. Inclusion criteria consisted of being 50 years or older, communitydwelling, and speaking Dutch. The exclusion criteria were the inability to participate in a group discussion or telephone interview due to cognitive or hearing impairments.

Study procedure

The focus groups were organized at the Radboud University Medical Center in Nijmegen, The Netherlands. All focus groups and interviews took place between 11 March 2020, and 24 June 2020. The focus groups were chaired by a PhD student, and the interviews were administered by the PhD student and a MSc student, both not personally connected to any of the participants. Participants received information on the study beforehand, either by post or by e-mail. At the start of the focus group or interview, written informed consent was obtained, and a questionnaire was completed. This questionnaire consisted of demographics and information on wellbeing, loneliness, and frailty. The focus groups lasted for 2.5 hours, and the average interview duration was 58 minutes; all were voice recorded and transcribed.

The focus groups were held according to an interview guide consisting of the following main questions: (1) What aspects of social contact with people who are close to you (e.g., partner, (grand)children, close friends) are most

important to you? (i.e., strong ties) (2) How do these aspects differ for contacts with people who are less close to you? (i.e., weak ties) (3) What role for online games do you see in maintaining or fostering social contacts? Similar procedures were used in the interviews, except that informed consent was given verbally (recorded), and the questionnaires were completed by telephone.

Ethics

The study was reviewed by the research ethics committee of the Radboud University Medical Center (file 2020-6199). It did not fall within the remit of the Medical Research Involving Human Subjects Act (WMO). The ethics committee approved the study based on the Dutch Code of conduct for health research, the Dutch Code of conduct for responsible use, the Dutch Personal Data Protection Act, and the Medical Treatment Agreement Act.

Quantitative study materials

Quantitative data were predominantly collected for description of the sample. The questionnaire consisted primarily of the Older Persons and Informal Caregiver Survey-Short Form (TOPICS-SF) (Santoso et al., 2018), which provides information on demographics, physical and mental well-being, daily living activities, and morbidity. The TOPICS-SF was used to compute a frailty index (range 0-1, higher scores indicating higher levels of frailty), and a cutoff of 0.2 was used to classify someone as frail (Lutomski et al., 2013). The term 'frailty' refers to a state of vulnerability to adverse health outcomes (Clegg et al., 2013; Lutomski et al., 2013), and the frailty index is a way to quantify this vulnerability. Loneliness was measured with the 6-item De Jong-Gierveld Loneliness scale (range 0-6), categorized as not lonely (scores 0-1), moderately lonely (scores 2-4), and severely lonely (scores 5-6) (De Jong Gierveld & Van Tilburg, 2006, 2008). Network size was measured by asking the number of people the participants had regular and important contact with (response options: 2 to 5, 6 to 10, 11 to 15, 16 to 20, more than 20) (Kuiper et al., 2019). Lastly, fear of falling was administered by asking people whether they have been afraid of falling in the last twelve months. Fear of falling can decrease social activities, increase social isolation (Scheffer et al., 2008), and might therefore be positively associated with loneliness.

Data analysis

The verbatim typed transcripts were analyzed with ATLAS.ti 8 using the process of open, axial, and selective coding (Glaser et al., 1968). This entails reducing the transcripts to only a few relevant overarching themes. The first step, open coding, consists of an initial translation of words, phrases, and sentences in descriptive codes. Two researchers independently coded three interviews. When disagreement occurred, this was discussed with a third researcher. After reaching agreement on encoding, the remaining transcripts were divided between the two researchers, coded and cross-checked by the other researcher. In the second step, the list of codes was further categorized and thematized into increasingly overarching bigger themes. These themes grasp the most important aspects of the given answers, and quotes were selected to illustrate the themes.

The questionnaire data were manually entered in SPSS, and descriptive statistics were calculated (mean and standard deviation (SD), or median and interquartile range (IQR) for non-normally distributed variables).

Results

A total of 29 participants took part across two focus groups (n = 4 and n = 5) and n = 20 individual telephone interviews. Table 1 gives an overview of the participant characteristics. 59% were female, and the mean age was 71.9 years (SD = 6.7). 72.4% were categorized as not lonely, and 31% had a social network of more than 20 persons. Two participants (7%) were categorized as frail (Table 1).

Two overarching themes pertaining to the questions on social connection were derived, i.e., "strong ties" and "weak ties". Furthermore, two themes relating to the questions on digital technology and games were derived, i.e., "views on digital contact and games" and "game design". These themes, with the corresponding categories and quotes, are summarized in Table 2 and discussed below.

Social interaction

Theme 1: strong ties

We distinguished three categories within the theme of strong ties: being together, reciprocity, and connection. First, participants indicated being physically together and sharing affection as important for strong ties as being together allows for personal and open conversations. Affection was related both to the grandchildren and other adults. Being together does not necessarily require activities in order to be valuable, as illustrated by one of the participants:

Being together and undertaking an activity are two different things. Being together already has a certain value, a certain weight. (M, 74)

Second, participants mentioned reciprocity. It was said that being interested in each other is essential. Listening is an important factor in this, as one participant pointed out:

Table 1. Characteristics of subjects aged 50+ participating in focus groups and interviews on social contacts and the possibility for online gaming.

Characteristics	Median (IQR)	Total (%)
Age in years	72 (9.5)	
Loneliness	0 (2.0)	
Frailty Index	0.05 (0.1)	
Female sex		17 (59)
Network size		
2 – 5		3 (10)
6 – 10		9 (31)
11 – 15		1 (3)
16 – 20		6 (21)
>20		9 (31)
Marital status		
Married/partnered		15 (52)
Divorced		0 (0)
Widowed		9 (31)
Unmarried, no partner		5 (17)
Living situation		
Independently, alone		14 (48)
Independently, with others		15 (52)
Healthcare facility		0 (0)
Highest education		
Primary school with uncompleted further education		2 (7)
(Pre-)vocational secondary education		3 (10)
Secondary vocational education		8 (28)
University entrance level		2 (7)
University or higher education		14 (48)
Working situation		
Lifetime unemployment		1 (3)
Working >20 hrs/week		4 (14)
Working <20 hrs/week		1 (3)
Incapacitated		0 (0)
Retired		23 (79)
Other		0 (0)

N = 29. IQR = interquartile range. Loneliness = the score resulting from the short form of the De Jong Gierveld Loneliness Scale. Frailty Index = calculated from the Older Persons and Informal Caregiver Survey-Short Form.

People who are older have been through so much. You want to share that with other people. If someone listens to that, that is fantastic. (F, 79)

It is also mentioned that if the other person does not listen, there is no real contact. Therefore, the reciprocity must be genuine. Moreover, it is said that the friendship is better when there is an overlap in the way people live their lives.

The last category within this theme is connection. A sense of personal connection is perceived as important, and contact becomes valuable when it emotionally touches you and when the interaction is on a deeper level. Participants indicate that 'true contact' means opening up to someone and expecting the same from the other. One of the participants summarized it as:

I'm not that into superficial contact. [...] in essence, it is about real contact. And when you have that with people, and you have that real connection, you can immediately see from someone's face when something is wrong. (F, 73)



Table 2. List of themes, categories and quotes of interviews and focus groups on social contacts and online games with older adults aged 50+.

Category	Participant	Quotes
Theme 1: Str	ong ties	
Being	FG1 (M,	'Being together and undertaking an activity are two different things. Being together
together	74)	already has a certain value, a certain weight.'
	I2 (F, 79)	'Seeing each other is important. Embracing each other, hugging. Eating together, going to the theater together'
Reciprocity	I2 (F, 79)	'People that are older have been through so much. You want to share that with othe people. If someone listens to that, that is fantastic.'
	I13 (M, 87)	'The interest in the way your friends and acquaintances live and handle life. That matches with the way you live your life, otherwise they aren't good friends.'
Connection	I1 (F, 76)	'[It is important that] it is not superficial, but that something can touch you, that something that happened can make you sad. That the contact is, well, on a deepe level.'
	I15 (F, 73)	'I'm not that into superficial contact. [] in essence it is about real contact. And wher you have that with people, and you have that real connection, you can immediately see from someone's face when something is wrong'
Theme 2: We	eak ties	
Positive aspects	FG2 (F, 73)	'Another life can be very surprising. You go out of the box. You don't linger in yourself that's what I think is valuable in meeting other people.'
	I4 (M, 66)	'It is a part of life. It is the social embeddedness. It is a reason not to move, for example because you have your contacts. They might be superficial, but they provide the [psychological leaves and trees in daily life.'
Negative aspects	18 (F, 68)	'[It is] inconvenient that, when you are in a hurry, you think "now I have to be patien and finish this conversation".'
Theme 3: Vie	ws on digital	l contacts and games
Facilitators	FG1 (F, 71)	'[they] live close, so I see her regularly. But in between visits, I find [text messages] jus as valuable as when she would come by at that moment. I then feel like she though of us, she lets us know what she did'
	13 (F, 56)	'At the beginning I was not so sure. But now I think, especially for older adults, there should be so much more of that in the future. I am open to it'
Barriers	FG1 (F, 79)	'A computer is a dead thing standing in between. [] there is someone behind that but it doesn't feel that way.'
	I5 (F, 71)	'Online games, I don't know. I don't do it; I don't know it. [] our life hasn't reached that point yet. Let's say it like that. You are still together and not lonely or alone'
Theme 4: Ga	me design	
Content	I18 (F, 57)	'It's not fun when it is too easy. [] You should need to think'
	17 (M, 72)	'It shouldn't be games that last for days. They should be finished in an hour'
	I22 (M, 87)	'In the beginning, if you want to expel loneliness, it should be mostly games that you can have some fun with. It should be an easy way to interact with each other. At a later stage [], it is okay if the games ask more of people's skill, but that depend on the development of the player (M, 87)'
Design	I13 (M, 87)	'I don't know whether I could enjoy every game if I don't know how the game works o what the game asks of me. As soon as I know that and I start playing, the game mus have meaning for me.'
	I10 (F, 66)	There shouldn't be too many rules, that people must play it ten times before they ge it.
	I1 (F, 83)	"The industry should take older adults more into account. It should have an easy interface for them to stay up-to-date. [] In that way, more people will join. [] I it's complicated, they will quit."

Theme 2: weak ties

Participants were asked how the important aspects of contact with weak ties differed from those with strong ties. Weak ties were exemplified to participants as someone you briefly talk to at the supermarket. Positive and negative associations were distinguished.



Positive aspects mentioned were that weak ties are without obligations and valuable in addition to strong ties. Weak ties are the social embeddedness in the neighborhood, and the "leaves on the tree of daily life." They can be the reason not to move away from the neighborhood, for example. One participant said:

Another life story can be very surprising. You go out of the box. You don't linger in yourself, that's what I think is valuable in meeting other people. (F, 73)

Another participant indicated that it would be terrible to be somewhere where people just walk past each other without talking, therefore regarding weak ties as necessary for a happy life.

Negative aspects were also mentioned, e.g., that these contacts are unimportant and that there is no need to discuss all kinds of things with your neighbors. They take time, while you don't get much out of them. One participant said:

[It is] inconvenient that, when you are in a hurry, you think 'now I have to be patient and finish this conversation. (F, 68)

The use and design of digital games

Theme 3: views on digital contact and games

During the interview, participants shared their views on digital contacts (i.e., contact through telephone, chat, games, or e-mail). All participants had a smartphone that they primarily used for text messaging, e.g., WhatsApp. Some had experience with video calls, social media, and games. The more familiar games mostly consisted of card games (e.g., Spider Solitaire, Bridge, Poker), word games (e.g., Wordfeud, Woord Snack, Word Crack), and puzzle games (e.g., Triominos and Sudoku). Wordfeud is used for social interaction as well as for entertainment; most other games are primarily used as entertainment, to take your mind off things, and to pass time.

Participants mentioned that digital contact is accessible and valuable. For example, WhatsApp group messages are perceived as ideal to quickly inform a large group of people. On receiving text messages from her grandchild, one participant said:

[They] live close, so I see her regularly. But in between visits, I find [text messages] just as valuable as when she would come by at that moment. I then feel like she thought of us; she lets us know what she did. (F, 71)

One participant used online games as a way of looking out for others, i.e., something might be wrong if the other player did not play their turn within a few days. Many participants suggested that, although not for now, contact through online games is a possibility for the future:

At the beginning I was not so sure. But now I think, especially for older adults, there should be so much more of that in the future. I am open to it. (F, 56)

Barriers and risks in digital social contacts are also mentioned. Many participants said that online games take a lot of time. This initial negative attitude toward games was largely taken away when suggested that online games may offer opportunities for people who are less mobile to stay connected, with which most participants agreed. However, some had negative associations with using technology for social contact. One participant said on video calls:

A computer is a dead thing standing in between. [...] there is someone behind that, but it doesn't feel that way. (F, 79)

Another participant said they held off purchasing a smartphone for a long time, as they got very annoyed with people distracted by their smartphone during a conversation.

Theme 4: game design

Suggestions for the development of online games related to content and design. Participants said that there should be variation in the games and their levels. The games should be challenging, although not too challenging, and trigger knowledge and creativity. Games that are not challenging are perceived as boring, as "there must be something for you to think about." Competition makes the games fun, as it allows you to show how smart you are. One participant summarized:

In the beginning, if you want to expel loneliness, it should be mostly games that you can have some fun with. It should be an easy way to interact with each other. At a later stage [...], it is okay if the games ask more of people's skill, but that depends on the development of the player. (M, 87)

Concerning the design of the games, it was said that the games should be user-friendly, facilitate playing together, and trigger communication, either via video or chat messages. Controls or rules that are too complex are undesirable; this leads to frustration and takes away of the game experience. Participants prefer the games to be in their native language and suggest large letters, readable screens, high contrast, and use of colors. It should match the target group of older adults:

The industry should take older adults more into account. It should have an easy interface for them to stay up-to-date. [...] In that way, more people will join. [...] If it's complicated, they will quit. (F, 83)

Another participant said that the games should be meaningful and entail more than the game itself:



I don't know whether I will enjoy a game if I don't know how the game works or what the game asks of me. As soon as I know that and I start playing, the game must have meaning for me. (M, 87)

Discussion

This study qualitatively explored the important factors in social contacts for older adults and the older adults' views on social gaming to maintain and strengthen their social network. Personal connection, in-person contact, and reciprocity were most important in contact with strong ties. Contact with weak ties can be a valuable addition to the network of strong ties but requires a certain time investment that is not always feasible or desirable. Challenging and simultaneously user-friendly games were considered the most important requirements for social game design.

The importance of connection and reciprocity shows the importance of contact and relationship quality (Bruggencate et al., 2017). This is supported by the literature, where it is shown that while the overall network of older adults shrinks over time (Cornwell et al., 2008), this decline is predominantly explained by a decrease in peripheral network members (Bruine de Bruin et al., 2020). The personal network, the small core of very close contacts, does not shrink with increasing age (van Tilburg, 1998). While the perceived instrumental support decreased, the perceived emotional support does not (Due et al., 1999). This suggests that for older adults, the quality of the close contacts and connection with those contacts is more important than the size of the network (Bruine de Bruin et al., 2020; Green et al., 2016; Pinquart & Sorensen, 2010).

In this study we show the importance of weak ties for day-to-day interaction complementing the relationships with strong ties. The importance of a mixture of strong and weak ties is previously shown in literature. Weak ties may replace strong ties when these are lost, and the number of weak ties was found to be more predictive of more positive and less depressed affect than the number of strong ties (Huxhold et al., 2020). Strong and weak ties satisfy different needs (Yu, 2020), and both can be maintained with online contact. While strong ties are predominantly contacted in the safe and enclosed space of messaging apps like WhatsApp, where personal and intimate information can be shared (Karapanos et al., 2016), social network sites are primarily used to maintain contact with weak ties (Ellison et al., 2007; Twenge, 2013; Yu, 2020). In this study, the possibility of social contact through online apps and games is explored. Taking into account the different needs for different ties, it might be possible to use games to foster interaction with both strong and weak ties.

When describing loneliness, older adults often mention lacking someone they can confide in or share experiences with (Larsson et al., 2019), as deeper connections occur with people they can rely on (Buys et al., 2015). Family ties are particularly important, as they provide accessible social support and a link to younger generations. However, this is only achieved when the connection is mutual and maintained by choice (Taube et al., 2016). Our results align with these findings, showing that most value comes from contacts where the reciprocity and mutual interest is genuine and where there is a personal connection.

The importance of physical proximity might be partly explained by the timing of the interviews, i.e., amidst the first wave of mandatory COVID-19 isolation measures, during which older adults were advised to self-isolate (Kremers et al., 2021; Wu, 2020). However, this finding is consistent with earlier research showing the importance of physical proximity and face-to-face contact in the quality of the relationship (Bush, 2001; Dewit et al., 1988; Latané et al., 1995; Rogers-Jarrell et al., 2020; Teo et al., 2015).

The results regarding online gaming are in line with previous findings stating the importance of challenge and social interaction (De Schutter, 2011; Nap et al., 2009). Our results add that user-friendliness is a necessary requirement for playing online games and an important factor in gaming satisfaction (Barros et al., 2014; Machado et al., 2018; Sauvé et al., 2019). Furthermore, in-game communication is considered more important than competition (Veloso & Costa, 2015). These specific qualitative findings reveal the importance of involving the end-users in the co-development and codesign of an online intervention in order to maximize the potential benefits for these end-users.

Strengths and limitations

A strength of the study is the timing during the COVID-19 pandemic. Although the study was planned pre-COVID-19, a large part of the data collection occurred during isolation, which should be taken into account. Loneliness has increased during COVID-19 (Seifert & Hassler, 2020; Van Tilburg et al., 2020), and less opportunities for social interaction might have led to increased awareness of what is truly important in the social network. This might have positively influenced the richness of the collected data. Furthermore, older adults became more digitally active and skilled during isolation (e.g., video calling or text messages), and more technological opportunities became available (Banskota et al., 2020; Kuwahara et al., 2020). This might have led to more willingness to use online technology to maintain social contacts in the future. Future research should reveal whether this change is lasting, or rather subject to a time period bias.

The switch from focus groups to interviews can be considered a limitation. The choice for focus groups was deliberate since they are ideal when a wide and complex range of ideas is expected, as group interaction allows participants to build on each other's ideas (Kaplowitz & Hoehn, 2001). However, after the second focus group, the social distancing measures came into effect, forcing us to reschedule the remaining focus groups as individual telephone interviews, thereby missing group interaction and relying more on the connection between the interviewer and the participant. On the other hand, telephone interviews also provide anonymity and privacy, possibly allowing more information sharing (Sturges & Hanrahan, 2004). We therefore believe that the switch does not limit the value and validity of our results.

A second limitation of the study is the representativeness of the sample. Convenience sampling resulted in a relatively highly educated, non-frail sample of older adults with a large social network and low loneliness levels. Although qualitative research generally does not require random sampling (Marshall, 1996), this may have influenced our results. Initial data saturation was achieved after 16 interviews and two focus groups, after which the descriptive data were preliminarily analyzed, revealing the representativeness issue of the sample. Subsequently, four more participants were purposefully recruited with lower educational levels and smaller social networks. Their responses did not substantially differ from the prior interviews, suggesting that the restricted representativeness may have had limited implications for the current conclusions.

Implications for research and practice

This study provides new information on social contacts for the group of mostly fit community-dwelling older adults. While previous research focused on the qualitative evaluation of loneliness itself in older adults, we approached it from the aspect of social contacts. By understanding what is important in social interactions, we more deeply understand the impact of the lack of these interactions. Furthermore, specifying what makes social interactions important helps pave the way for more integrated and co-designed digital games to strengthen and broaden these interactions.

These digital social games can provide gerontological social workers with a valuable tool that older adults, given the right instructions, can use to increase their social embeddedness. Our study has shown that when identifying games, one should make sure the games are not too complex, which means that these should be easy to read and understand, somewhat challenging, and in the older adults' native language. It preferably triggers personal communication with a mixture of strong and weak ties.

Conclusion

Connection, reciprocity and being together are considered most important in social contacts in this sample of vital, community-dwelling older adults. Online co-designed interventions such as social games that are feasible, challenging and intuitive, and trigger meaningful communication, may strengthen



social interactions and reduce loneliness in older adults. This is especially relevant in a time of ongoing social restriction measures that older persons may even pose on themselves for fear of contracting the virus.

Acknowledgements

We would like to thank the participants for generously sharing their experiences with us. The research is part of the Social Health Games project, in collaboration with Games for Health and Cooperation Dela.

Disclosure statement

No potential conflict of interest was reported by the authors.

Data availability statement

The anonymous transcript data are available upon request due to ethical and privacy considerations.

Funding

This work was supported by the Netherlands Organisation for Scientific Research (NWO) under Grant 645.003.002.

ORCID

```
Jeroen H. M. Janssen http://orcid.org/0000-0003-3641-1517
Evi M. Kremers http://orcid.org/0000-0002-2495-1156
Minke S. Nieuwboer (b) http://orcid.org/0000-0002-2193-4908
Bas D. L. Châtel (b) http://orcid.org/0000-0001-8778-0131
Rense Corten (b) http://orcid.org/0000-0001-8154-9393
Marcel G. M. Olde Rikkert http://orcid.org/0000-0003-1397-1677
G. M. E. E. (Geeske) Peeters (b) http://orcid.org/0000-0003-4460-7026
```

References

Banskota, S., Healy, M., & Goldberg, E. M. (2020). 15 smartphone apps for older adults to use while in isolation during the COVID-19 pandemic. The Western Journal of Emergency Medicine, 21(3), 514-525. https://doi.org/10.5811/westjem.2020.4.47372

Barbosa Neves, B., Franz, R., Judges, R., Beermann, C., & Baecker, R. (2019). Can digital technology enhance social connectedness among older adults? a feasibility study. Journal of Applied Gerontology, 38(1), 49-72. https://doi.org/10.1177/0733464817741369

Barros, A. C. D., Leitão, R., & Ribeiro, J. (2014). Design and evaluation of a mobile user interface for older adults: Navigation, interaction and visual design recommendations. Procedia Computer Science, 27, 369–378. https://doi.org/10.1016/j.procs.2014.02.041



- Bedard-Thomas, J., Gausvik, C., Wessels, J., Regan, S., Goodnow, K., & Goroncy, A. (2019). I live alone but don't feel alone: Social isolation and loneliness from the patient perspective. Journal of Patient-Centered Research and Reviews, 6(4), 262-266. https://doi.org/10.17294/ 2330-0698.1715
- Bouwman, T. E., Aartsen, M. J., van Tilburg, T. G., & Stevens, N. L. (2017). Does stimulating various coping strategies alleviate loneliness? Results from an online friendship enrichment program. Journal of Social and Personal Relationships, 34(6), 793-811. https://doi.org/10. 1177/0265407516659158
- Bruggencate, T. T., Luijkx, K. G., & Sturm, J. (2017). Social needs of older people: A systematic literature review. Ageing and Society, 38(9), 1745-1770. https://doi.org/10.1017/ s0144686x17000150
- Bruine de Bruin, W., Parker, A. M., & Strough, J. (2020). Age differences in reported social networks and well-being. Psychology and Aging, 35(2), 159-168. https://doi.org/10.1037/ pag0000415
- Bush, E. (2001). The use of human touch to improve the Well-Being of older adults: A holistic nursing intervention. Journal of Holistic Nursing, 19(3), 256-270. https://doi.org/10.1177/ 089801010101900306
- Buys, L., Burton, L., Cuthill, M., Hogan, A., Wilson, B., & Baker, D. (2015). Establishing and maintaining social connectivity: An understanding of the lived experiences of older adults residing in regional and rural communities. The Australian Journal of Rural Health, 23(5), 291–294. https://doi.org/10.1111/ajr.12196
- Chen, Y. R., & Schulz, P. J. (2016). THe effect of information communication technology interventions on reducing social isolation in the elderly: A systematic review. Journal of Medical Internet Research, 18(1), e18. https://doi.org/10.2196/jmir.4596
- Clegg, A., Young, J., Iliffe, S., Olde Rikkert, M., & Rockwood, K. (2013). Frailty in elderly people. The Lancet, 381(9868), 752-762. https://doi.org/10.1016/s0140-6736(12)62167-9
- Cohen-Mansfield, J., Hazan, H., Lerman, Y., & Shalom, V. (2016). Correlates and predictors of loneliness in older-adults: A review of quantitative results informed by qualitative insights. International Psychogeriatrics/ipa, 28(4), 557-576. https://doi.org/10.1017/ s1041610215001532
- Cohen-Mansfield, J., & Eisner, R. (2020). The meanings of loneliness for older persons. Aging & Mental Health, 24(4), 564-574. https://doi.org/10.1080/13607863.2019.1571019
- Cornwell, B., Laumann, E. O., & Schumm, L. P. (2008). THe social connectedness of older adults: A national profile*. American Sociological Review, 73(2), 185-203. https://doi.org/10. 1177/000312240807300201
- Cornwell, E. Y., & Waite, L. J. (2009). Social disconnectedness, perceived isolation, and health among older adults. Journal of Health and Social Behavior, 50(1), 31-48. https://doi.org/10. 1177/002214650905000103
- De Jong Gierveld, J., & Van Tilburg, T. (2006). A 6-Item scale for overall, emotional, and social loneliness. Research on Aging, 28(5), 582-598. https://doi.org/10.1177/0164027506289723
- De Jong Gierveld, J., & Van Tilburg, T. (2008). A shortened scale for overall, emotional and social loneliness. Tijdschrift Voor Gerontologie En Geriatrie, 39(1), 4-15. (De ingekorte schaal voor algemene, emotionele en sociale eenzaamheid). https://doi.org/10.1007/ BF03078118
- De Schutter, B. (2011). Never too old to play: The appeal of digital games to an older audience. Games and Culture, 6(2), 155–170. https://doi.org/10.1177/1555412010364978
- Dewit, D. J., Wister, A. V., & Burch, T. K. (1988). Physical distance and social contact between elders and their adult children. Research on Aging, 10(1), 56-80. https://doi.org/10.1177/ 0164027588101003



- Due, P., Holstein, B., Lund, R., Modvig, J., & Avlund, K. (1999). Social relations: Network, support and relational strain. Social Science & Medicine, 48(5), 661–673. https://doi.org/10. 1016/s0277-9536(98)00381-5
- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of facebook "Friends:" Social capital and college students' use Of online social network sites. Journal of Computer-Mediated Communication, 12(4), 1143-1168. https://doi.org/10.1111/j.1083-6101.2007. 00367.x
- Glaser, B. G., Strauss, A. L., & Strutzel, E. (1968). The discovery of grounded theory; strategies for qualitative research. Nursing Research, 17(4), 364. https://doi.org/10.1097/00006199-196807000-00014
- Green, L. R., Richardson, D. S., Lago, T., & Schatten-Jones, E. C. (2016). Network correlates of social and emotional loneliness in young and older adults. Personality & Social Psychology Bulletin, 27(3), 281–288. https://doi.org/10.1177/0146167201273002
- Huxhold, O., Fiori, K. L., Webster, N. J., & Antonucci, T. C. (2020). The strength of weaker ties: An underexplored resource for maintaining emotional Well-Being in later life. The Journals of Gerontology: Series B, 75(7), 1433–1442. https://doi.org/10.1093/geronb/gbaa019
- Ijsselsteijn, W., Nap, H. H., de Kort, Y., & Poels, K. (2007). Digital game design for elderly users. Proceedings of the 2007 conference on Future Play - Future Play '07. New York, NY, USA: Association for Computing Machinery.
- Kaplowitz, M. D., & Hoehn, J. P. (2001). Do focus groups and individual interviews reveal the same information for natural resource valuation? Ecological Economics, 36(2), 237-247. https://doi.org/10.1016/s0921-8009(00)00226-3
- Karapanos, E., Teixeira, P., & Gouveia, R. (2016). Need fulfillment and experiences on social media: A case on Facebook and WhatsApp. Computers in Human Behavior, 55, 888-897. https://doi.org/10.1016/j.chb.2015.10.015
- Kelly, M. E., Duff, H., Kelly, S., McHugh Power, J. E., Brennan, S., Lawlor, B. A., & Loughrey, D. G. (2017). The impact of social activities, social networks, social support and social relationships on the cognitive functioning of healthy older adults: A systematic review. Systematic Reviews, 6(1), 259. https://doi.org/10.1186/s13643-017-0632-2
- Kremers, E. M., Janssen, J. H. M., Nieuwboer, M. S., Olde Rikkert, M. G. M., & Peeters, G. M. E. E. (2021). The psychosocial adaptability of independently living older adults to COVID-19 related social isolation in the Netherlands: A qualitative study. *Health &* Social Care in the Community, 30(1), e67-e74. https://doi.org/10.1111/hsc.13436
- Kuiper, J. S., Smidt, N., Zuidema, S. U., Comijs, H. C., Oude Voshaar, R. C., & Zuidersma, M. (2019). A longitudinal study of the impact of social network size and loneliness on cognitive performance in depressed older adults. Aging & Mental Health 24(6), 1-9. https://doi.org/ 10.1080/13607863.2019.1571012
- Kuwahara, K., Kuroda, A., & Fukuda, Y. (2020). COVID-19: Active measures to support community-dwelling older adults. Travel Medicine and Infectious Disease, 36, 101638. https://doi.org/10.1016/j.tmaid.2020.101638
- Larsson, K., Wallroth, V., & Schroder, A. (2019). "You never get used to loneliness" Older adults' experiences of loneliness when applying for going on a senior summer camp. Journal of Gerontological Social Work, 62(8), 892-911. https://doi.org/10.1080/01634372.2019. 1687633
- Latané, B., Liu, J. H., Nowak, A., Bonevento, M., & Zheng, L. (1995). Distance matters: Physical space and social impact. Personality & Social Psychology Bulletin, 21(8), 795–805. https://doi. org/10.1177/0146167295218002
- Litwin, H. (1995). The social networks of elderly immigrants: An analytic typology. *Journal of* Aging Studies, 9(2), 155–174. https://doi.org/10.1016/0890-4065(95)90009-8



- Litwin, H. (1996). The social networks of older people: A Cross-National analysis. Praeger Publishers.
- Litwin, H., & Stoeckel, K. J. (2014). Confidant network types and well-being among older europeans. Gerontologist, 54(5), 762-772. https://doi.org/10.1093/geront/gnt056
- Lutomski, J. E., Baars, M. A., van Kempen, J. A., Buurman, B. M., den Elzen, W. P., Jansen, A. P., Melis, R. J. . . . Melis, R. J., Krabbe, P. F. M., Steunenberg, B., Steyerberg, E. W., Olde Rikkert, M. G. M., Melis, R. J. F. (2013). Validation of a frailty index from the older persons and informal caregivers survey minimum data set. Journal of the American Geriatrics Society, 61(9), 1625–1627. https://doi.org/10.1111/jgs.12430
- Machado, M. D. C., Ferreira, R. L. R., & Ishitani, L. (2018). Heuristics and recommendations for the design of mobile serious games for older adults. International Journal of Computer Games Technology, 2018, 1-15. https://doi.org/10.1155/2018/6757151
- Marshall, M. N. (1996). Sampling for qualitative research. Family Practice, 13(6), 522-525. https://doi.org/10.1093/fampra/13.6.522
- Morlett Paredes, A., Lee, E. E., Chik, L., Gupta, S., Palmer, B. W., Palinkas, L. A., & Jeste, D. V. (2020). Qualitative study of loneliness in a senior housing community: The importance of wisdom and other coping strategies. Aging & Mental Health 25(3), 1-8. https://doi.org/10. 1080/13607863.2019.1699022
- Nap, H. H., Kort, Y. A. W. D., & Ijsselsteijn, W. A. (2009). Senior gamers: Preferences, motivations and needs. Gerontechnology, 8(4), 247-262. https://doi.org/10.4017/gt.2009.08. 04.003.00
- Pinquart, M., & Sorensen, S. (2010). Influences on loneliness in older adults: A Meta-Analysis. Basic and Applied Social Psychology, 23(4), 245-266. https://doi.org/10.1207/ s15324834basp2304_2
- Resnick, B., Orwig, D., Magaziner, J., & Wynne, C. (2002). The effect of social support on exercise behavior in older adults. Clinical Nursing Research, 11(1), 52–70. https://doi.org/10. 1177/105477380201100105
- Rogers-Jarrell, T., Eswaran, A., & Meisner, B. A. (2020). Extend an embrace: The availability of hugs is an associate of higher Self-Rated health in later life. Research on Aging, 43(5-6), 227–236. https://doi.org/10.1177/0164027520958698
- Santoso, A. M. M., Lutomski, J. E., Hofman, C. S., Metzelthin, S. F., Blom, J. W., van der Wees, P. J., Consortium, T.-M... Consortium, T.-M., Melis, R. J. F. (2018). Development of a Patient-Reported outcome measure for geriatric care: The older persons and informal caregivers survey short form. Value in Health, 21(10), 1198-1204. https://doi.org/10.1016/j. jval.2018.02.011
- Sauvé, L., Kaufman, D., & Plante, P. (2019). Designing a user-friendly educational game for older adults. In M. A. Herzog, Z. Kubincová, P. Han, & M. Temperini (Eds.), Advances in Web-Based learning – ICWL 2019, (pp.39–46). Berlin, Heidelberg: Springer-Verlag.
- Scheffer, A. C., Schuurmans, M. J., van Dijk, N., van der Hooft, T., & de Rooij, S. E. (2008). Fear of falling: Measurement strategy, prevalence, risk factors and consequences among older persons. Age and Ageing, 37(1), 19-24. https://doi.org/10.1093/ageing/afm169
- Schell, R., Hausknecht, S., Zhang, F., & Kaufman, D. (2015). Social benefits of playing Wii bowling for older adults. Games and Culture, 11(1-2), 81-103. https://doi.org/10.1177/ 1555412015607313
- Seifert, A., & Hassler, B. (2020). Impact of the COVID-19 pandemic on loneliness among older adults. Front Sociol, 5, 590935. https://doi.org/10.3389/fsoc.2020.590935
- Shah, S. G. S., Nogueras, D., van Woerden, H. C., & Kiparoglou, V. (2021). Evaluation of the effectiveness of digital technology interventions to reduce loneliness in older adults: Systematic review and meta-analysis. Journal of Medical Internet Research, 23(6), e24712. https://doi.org/10.2196/24712



- Shiovitz-Ezra, S. (2013). Confidant networks and loneliness. In A. Börsch-Supan, M. Brandt, H. Litwin, & G. Weber (Eds.), Active ageing and solidarity between generations in Europe: First results from SHARE after the economic crisis (pp. 349–358). The Gruyter.
- Sturges, J. E., & Hanrahan, K. J. (2004). Comparing telephone and Face-to-Face qualitative interviewing: A research note. Qualitative Research, 4(1), 107–118. https://doi.org/10.1177/ 1468794104041110
- Taube, E., Jakobsson, U., Midlov, P., & Kristensson, J. (2016). Being in a Bubble: The experience of loneliness among frail older people. Journal of Advanced Nursing, 72(3), 631-640. https://doi.org/10.1111/jan.12853
- Teo, A. R., Choi, H., Andrea, S. B., Valenstein, M., Newsom, J. T., Dobscha, S. K., & Zivin, K. (2015). Does mode of contact with dIfferent types Of social relationships predict depression In older adults? Evidence from a nationally representative survey. Journal of the American Geriatrics Society, 63(10), 2014–2022. https://doi.org/10.1111/jgs.13667
- Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. International Journal for Quality in Health Care, 19(6), 349–357. https://doi.org/10.1093/intqhc/mzm042
- Twenge, J. M. (2013). Does online social media lead to social connection or social disconnection? Journal of College and Character, 14(1), 11-20. https://doi.org/10.1515/jcc-2013-0003
- Van Tilburg, T. G. (1990). The size of the supportive network in association with the degree of loneliness. In C. P. M. Knipscheer & T. C. Antonucci (Eds.), Social network research: Substantive issues and methodological questions (pp. 137–150). Swets & Zeitlinger.
- van Tilburg, T. (1998). Losing and gaining in old age: Changes in personal network size and social support In A Four-Year longitudinal study. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 53B(6), S313-S323. https://doi.org/10.1093/ger onb/53B.6.S313
- Van Tilburg, T. G., Steinmetz, S., Stolte, E., Van der Roest, H., & De Vries, D. H. (2020). Loneliness and mental health during the COVID-19 pandemic: A study among Dutch older adults. The Journals of Gerontology: Series B 53B(6), S313-S323. https://doi.org/10.1093/ geronb/gbaa111
- Veloso, A., & Costa, L. (2015, June 17-20). Social network games in an ageing society: Co-designing online games with adults aged 50 and over. 2015 10th Iberian Conference on Information Systems and Technologies (CISTI). IEEE.
- Vos, W. H., van Boekel, L. C., Janssen, M. M., Leenders, R., & Luijkx, K. G. (2020). Exploring the impact of social network change: Experiences of older adults ageing in place. Health & Social Care in the Community, 28(1), 116-126. https://doi.org/10.1111/hsc.12846
- Wrzus, C., Hanel, M., Wagner, J., & Neyer, F. J. (2013). Social network changes and life events across the life span: A meta-analysis. Psychological Bulletin, 139(1), 53-80. https://doi.org/ 10.1037/a0028601
- Wu, B. (2020). Social isolation and loneliness among older adults in the context of COVID-19: A global challenge. Global Health Research and Policy, 5(1), 27. https://doi.org/10.1186/ s41256-020-00154-3
- Yu, R. P. (2020). Use of messaging apps and social network sites among older adults: A mixedmethod study (Vol.14) [older adults, social media, messaging apps, social network sites, strongties, weak ties]. https://ijoc.org/index.php/ijoc/article/view/14435/319414
- Zunzunegui, M.-V., Alvarado, B. E., Del Ser, T., & Otero, A. (2003). Social networks, social integration, and social engagement determine cognitive decline in Community-Dwelling Spanish older adults. The Journals of Gerontology: Series B, 58(2), S93-S100. https://doi.org/ 10.1093/geronb/58.2.S93