

When your world gets smaller: how older people try to meet their social needs, including the role of social technology

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ABSTRACT

Social needs are important basic human needs. When social needs are not fulfilled, it can lead to mental and physical health problems. In an ageing society, meeting the social needs of older adults is important to sustain their wellbeing and quality of life. Social technology is used by younger people attempting to fulfil social needs. The aim of this study is to understand the social needs of older people and the role of social technology in fulfilling these needs. Using this information we will uncover opportunities for (technological) interventions. We conducted a qualitative explorative field study by interviewing 19 community-dwelling older adults. The participants were selected by professional care-givers with the help of a list of criteria for people at risk of social isolation or loneliness. Semi-structured interviews were held, using a topic list covering the following topics: social networks, social support, connectedness, neighbourhood, activities and hobbies, as well as use of and experiences with social technology. After thematic analysis, inductive codes were attached to quotations relevant to the research question. The results were described in four sections: (a) social needs and relationships; (b) the influence of life history and personality; (c) possibilities and barriers to meet social needs; and (d) use of and attitude towards social technology. The results indicate that the group of participants is heterogeneous and that their social needs and the way they try to meet these are diverse. The Social Production Functions Theory of Successful Aging (SPF-SA) was found to be a useful basis for interpreting and presenting the data. Social needs such as connectedness, autonomy, affection, behavioural confirmation and status are important for the wellbeing of older people. Although the need for affection is most easy to fulfil for older people, it looks like satisfaction of the need for behavioural confirmation and status are in some cases preferred, especially by the male participants. Resources such as relationships, activities, personal circumstances and social technology can help meet social needs. Where there is a lack of (physical) resources such as health problems, reduced mobility, death of network members, fear of rejection and gossip, and poor financial circumstances, meeting social needs can be more difficult for some older people. Social technology now plays a

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modest role in the lives of older people and in fulfilling their social needs. Because of its potential and its role in the lives of younger people, social technology can be seen as a promising resource in the satisfaction of social needs. However, since it is yet unknown how and to what extent the use of social network technologies, such as Facebook, can be beneficial for older people, more research in this area is needed. Based on our findings, we conclude that the world of older individuals is getting smaller. The loss of resources, *e.g.* the loss of one's health and mobility, may make it more difficult for an older person to connect with the world outside, which may result in a smaller social network. We therefore suggest that interventions to support older adults to meet their social needs may focus on two aspects: supporting and improving the world close by and bringing the world outside a little bit closer.

KEY WORDS—social needs, Social Production Functions Theory of Successful Aging (SPF-SA), social technology, older adults, interventions.

Introduction

Social needs, such as acceptance, appreciation, belonging and companionship, are important basic human needs for every individual (Maslow *et al.* 1970). Older people see their social life and their social relationships as important prerequisites for successful ageing. They often value wellbeing and social functioning more than physical and psycho-cognitive functioning (Von Faber *et al.* 2001). Furthermore, older adults with strong social relationships are able to maintain independence and live longer in community settings than socially isolated older adults, and *vice versa*: with the capacity to live one's life independently, one can also maintain a social network (Michael *et al.* 2001). If social needs are not satisfied, this can lead to loneliness and social isolation, which may, in turn, negatively affect a person's physical and mental health (Al-Kandari and Crews 2014; Avlund *et al.* 2004; Berkman and Syme 1979; Cacioppo, Hawkley and Berntson 2003; Golden *et al.* 2009; Holt-Lundstad *et al.* 2015; Iecovich, Jacobs and Stessman 2011; Portero and Oliva 2007; Seeman 1996). With a growing population of older people in Western society and their need to stay healthy and community dwelling, the satisfaction of their social needs is especially important (Antonucci 2001; Carstensen 1993; Steverink and Lindenberg 2006). This study focuses on the social needs of older people and the way they try to fulfil these.

Steverink and Lindenberg (2006) identify three social needs – affection, behavioural confirmation and status – in their Social Production Functions Theory of Successful Aging (SPF-SA), which overlap with the social needs identified in Maslow's hierarchy (Maslow *et al.* 1970). The main difference

between the two theories is the possibility for substitution and compensation in the fulfilment of different needs in the SPF-SA. The SPF-SA further states that people have resources and goals to meet their social needs. Relationships with other people are important resources for trying to meet all three needs. According to the SPF-SA, the satisfaction of all three needs is better for social wellbeing than trying to meet just one of the social needs, as a network with diverse types of members satisfies diverse types of social needs and therefore enhances social wellbeing. This is confirmed in the systematic literature review studying social needs by ten Bruggencate, Luijkx and Sturm (2017).

Social technology and its relationship with (social) wellbeing

The definition of social technology according to Gartner is:

Any technology that facilitates social interactions and is enabled by a communications capability, such as the Internet or a mobile device. Examples are social software (e.g. wikis, blogs, social networks) and communication capabilities (e.g. Web conferencing) that are targeted at and enable social interactions. (Gartner 2017)

For young people, social technology plays an important role in their (social) life and in possibly meeting their social needs (Valkenburg 2014). The results of a large representative Dutch online survey indicate that almost all young people use the internet: 89 per cent of people aged 20–39 use Facebook, 72 per cent use Instagram and 93 per cent use WhatsApp to keep in contact with friends and family (Turpijn, Kneefel and Van der Veer 2015).

The use of social technology facilitates contact and communication, and it can be a means or resource to meet the need for affection, behavioural confirmation and status. For instance, an online survey among Dutch adolescents revealed that positive feedback on CU2 (a friend networking site) profiles enhances adolescents' social self-esteem and wellbeing, whereas negative feedback decreases their self-esteem and wellbeing (Valkenburg, Peter and Schouten 2006). A cross-sectional survey among American college student Facebook users shows that the number of Facebook friends and positive self-presentation may enhance subjective wellbeing (Kim and Lee 2011). In a study by Hobbs *et al.* (2016), the researchers reference social media profiles against California Department of Public Health vital records to assess whether social media use is associated with longer life. The results showed that online social integration is associated with a reduced risk of mortality. The effects of using social technology are not all positive. In a quantitative study among fifth graders in the United States of America, cyberbullying and sexting were seen as a problem by the respondents. The

researchers conclude that young people are confronted at an early age with technology with little protection against cyberbullying or sexting (D'Antona, Kevorkian and Russom 2010). Best, Manktelow and Taylor (2014) carried out a systematic narrative review investigating the effects of online technologies on adolescent mental wellbeing. Besides positive effects such as increased self-esteem, perceived social support, increased social capital, safe identity experimentation and increased opportunity for self-disclosure, there are also negative effects in the use of social technology.

The few studies that shed light on the use of social technology and its influence among older people come to diverse, sometimes even contradictory, conclusions. In the critical systematic literature review of Cohen-Mansfield and Perach (2015), the effectiveness of different interventions for alleviating loneliness among older persons were analysed. The researchers conclude that technology in interventions can be effective in reducing loneliness. A quantitative study in the Netherlands, among 626 people aged over 60, looked at the relationship between the use of social network sites and mental health and loneliness among older community-dwelling adults. The researchers did not find any direct relationships. The questionnaire reported on how often and for how long people use social network sites, and the authors argue that the subjective experience using these sites may be more relevant and that more research on how and why older people use social network sites is needed (Aarts, Peek and Wouters 2015). The online survey by Sum *et al.* (2008) among Australians aged over 55 showed a relationship between use of the internet for communication and reduced feelings of loneliness; however, people who used the internet to form relationships had more feelings of emotional loneliness, the form of loneliness where people lack a close and intimate companion. The survey among American older adults by Bell *et al.* (2013) concludes that Facebook can indeed be a tool for older adults to stay socially connected. As Leist (2013) concluded, in a review from literature on social media use from a gerontological perspective concerning the possibilities of social technology in clinical practice, social technology has a lot of potential for enhancing social contacts and reducing loneliness. However, according to Leist (2013), there are also fears of threats such as misuse of personal data, as well as the distribution and uncritical adoption of potentially harmful information via online communities.

These findings show that the relationship between use of social technology and wellbeing among older adults is multi-faceted and that further research into the potential of social technology as a means to fulfil older people's social needs is recommended.

Despite the possible positive effects on wellbeing, older people use significantly less social technology than young people (Turpijn, Kneefel and Van

der Veer 2015). However, the percentage of older people who use these devices and applications is growing rapidly (Centraal Bureau voor de Statistiek 2017). As Peek *et al.* (2014) identified in a literature review about factors influencing the acceptance of electronic technologies by community-dwelling older adults, age plays an important role in acceptance of the technology. The older generation, according to Peek *et al.* (2014), has more difficulty using technological applications, simply because technology was not a (large) part of their life. Working on a computer is nowadays part of younger and working people's daily lives, but not the lives of the older generation.

Research question

Fulfilling the social needs of people contributes to their general wellbeing (Holt-Lundstad *et al.* 2015; Steverink, Lindenberg and Ormel 1998). Social technology can possibly play a role in meeting the social needs of older people. Our study examines social needs and their satisfaction in the lives of older people with a risk of social isolation or loneliness, the barriers to try to fulfil these needs and the role of social technology in such satisfaction. We expect that people at risk of becoming socially isolated or lonely benefit most from (technological) interventions for fulfilling social needs. Information about their social needs and how they try to meet these can help understand the problem and help create solutions, both technological and non-technological. The following research question is central:

- How do older adults at risk of being lonely or socially isolated meet their social needs?

To answer this research question, we need to know:

- What are the social needs of older adults at risk of being lonely or socially isolated?
- What do older adults at risk of being lonely or socially isolated do in order to meet these needs?
- Which possibilities and barriers do they experience in meeting their social needs?
- What is the role of social technology in meeting these needs?

Method

Following approval by the Tilburg University Ethics Review Board (ERB; number EC 2015.42), data were collected via semi-structured interviews.

Participants

Data were collected among community-dwelling older adults, with a minimum age of 75 years, in a medium-sized town in the south of the Netherlands. Participants were selected by a professional at the Lev Group, a welfare organisation that offers practical and emotional help to people living in the southern region of the Netherlands. A professional care-giver from the Lev Group who worked with older adults invited older adults who had one or more risk factors for loneliness or social isolation to participate in the study. Risk factors for being lonely or socially isolated are having a small social network, not having a spouse, being recently widowed and having expressed feelings of loneliness or isolation (Gierveld 1998; Victor *et al.* 2005). Other inclusion criteria for the participants were aged over 75 years, community dwelling, having sufficient (Dutch) language skills and having sufficient cognitive abilities to participate in an interview of about one hour.

Procedure

In April 2016, 24 selected older people were telephoned and asked whether they were interested in participating in our study. When the participants agreed to take part, they received a letter with information about the study and their right to cancel at any time. Most of the older people that were contacted agreed to participate: only three people declined. Two participants later cancelled the appointment because of personal circumstances. From the 24 people that were contacted, 19 people participated. The interviews took place at the home of the participants. Two female interviewers with a background in psychology conducted the interviews. At the beginning of the visit, further information was given; also, the informed consent was discussed and signed by the participant. The interviews all lasted about one hour, with one exception. One participant was brief in her answers: this interview lasted 20 minutes.

Materials

The topic list was based on results from a systematic literature study about the social needs of older people (ten Bruggencate, Luijkx and Sturm 2017), supplemented with questions about the use of and experiences with social technology (including e-mail and Skype). The topics were social networks, social support, connectedness, neighbourhood, activities and hobbies, and the use of and experiences with social technology. The loneliness and social isolation questionnaire consists of the items of the

loneliness scale of De Jong Gierveld and Van Tilburg (2008) and three items about social isolation (Hortulanus, Machielse and Meeuwesen 2006). The items on the questionnaire are proved to be valid and are used widely to measure the (subjective) experienced feelings of loneliness and social isolation (De Jong Gierveld and Van Tilburg 2008; Gierveld 1998; Gierveld and Van Tilburg 2006; Hortulanus, Machielse and Meeuwesen 2006).

Analysis

With the permission of the participants, the interview was digitally audio recorded and transcribed verbatim. Thematic analysis (Braun and Clarke 2006) was employed. Using qualitative data analysis software (Atlas.ti version 7), inductive codes were attached to quotations relevant to the research question. The topics in our topic list were initially used as sensitising concepts: social networks, social support, connectedness, neighbourhood, activities and hobbies, and the use of and experiences with social technology. Three researchers, working in pairs, were involved in the coding process, to ensure inter-rater reliability (Boeije 2005). Each transcript was coded independently by two of these researchers who, to reach a consensus, discussed their coding. Discussions in the coding pairs and in the whole coding team led to the introduction of new codes. Frequently used new codes were 'health problems', 'finances', 'mobility' and 'independence'.

Results

The sample consisted of 19 participants whose ages ranged from 75 to 94 years, with a mean age of 82 (Table 1). Eleven of the 19 participants were female. Fourteen of the participants lived alone; all of them were widowed. Five of the participants lived with a partner: in three cases this was their spouse, while in two cases they were not married. Table 1 also shows the scores on the De Jong Gierveld and Van Tilburg (2008) loneliness scale. Because the scores of participant 6 on the loneliness scale did not meet the requirements for a valid analysis, this participant was not assigned to a loneliness category. According to the loneliness scale, most of the participants experienced moderate loneliness feelings, one participant experienced severe loneliness feelings and five participants did not experience loneliness. Scores on the emotional loneliness scale were somewhat higher than those on the social loneliness scale.

TABLE 1. *Characteristics of the participants including scores on the loneliness scale (De Jong Gierveld and Van Tilburg 2008) and scores on items about social isolation (Hortulanus, Machielse and Meeuwesen 2006)*

Participant number	Age	Gender ¹	Living situation ²	I have people around me that want to help me, and want to do small chores ³	I have someone with whom I can talk about personal issues ⁴	For a nice conversation and time I drop by family, friends, acquaintances and neighbours, or they visit me at home ⁵	Emotional loneliness score	Social loneliness score	Total loneliness score	Category ⁶
1	76	F	A	N	1	1	0	0	0	Not lonely
2	84	F	P	0	1	0	1	0	1	Not lonely
3	82	M	P	1	0	N	3	3	6	Moderately lonely
4	75	F	P	1	–	1	2	2	4	Moderately lonely
5	80	F	A	0	1	0	6	5	11	Very severely lonely
6	94	F	P	–	–	–	0	0	0	No score
7	85	F	A	1	1	1	1	2	3	Moderately lonely
8	81	M	A	0	0	0	4	4	8	Moderately lonely
9	83	M	A	1	1	1	2	4	6	Moderately lonely
10	81	M	A	1	1	1	0	0	0	Not lonely
11	79	M	A	1	1	1	1	0	1	Not lonely
12	94	M	A	N	0	N	0	4	4	Moderately lonely
13	75	M	A	N	1	1	4	1	5	Moderately lonely

TABLE 1. (*Cont.*)

Participant number	Age	Gender ¹	Living situation ²	I have people around me that want to help me, and want to do small chores ³	I have someone with whom I can talk about personal issues ⁴	For a nice conversation and time I drop by family, friends, acquaintances and neighbours, or they visit me at home ⁵	Emotional loneliness score	Social loneliness score	Total loneliness score	Category ⁶
14	78	F	P	1	1	1	3	1	4	Moderately lonely
15	88	F	A	1	1	N	1	2	3	Moderately lonely
16	76	M	A	1	1	1	3	0	3	Moderately lonely
17	80	F	A	1	0	0	1	0	1	Not lonely
18	80	F	A	1	1	1	6	0	6	Moderately lonely
19	84	F	A	1	1	1	5	0	5	Moderately lonely

Notes: 1. F = female, M = male. 2. A = alone, P = with partner. 3. 0 = disagrees, N = neutral, 1 = agrees. 4. 0 = disagrees, N = neutral, 1 = agrees. 5. 0 = disagrees, N = neutral, 1 = agrees. 6. 0, 1 and 2 = not lonely, 3–8 = moderately lonely, 9 and 10 = severely lonely, 11 = very severely lonely.

Sample descriptive

Table 1 shows the scores on the three questionnaire items about social isolation. These items are derived from Hortulanus, Machielse and Meeuwesen (2006) and serve to support the social and emotional loneliness constructs from De Jong Gierveld and Van Tilburg (2008). One of the participants did not fill in the questionnaire for reasons of fatigue. According to the scores on the three items, only one of our participants (participant 8) is socially isolated; this participant has no people in his surroundings who support him. We conclude that the group of participants is not extremely lonely despite the fact that the older people were selected on the basis of risk determinants of loneliness or social isolation.

Social needs and relationships

Social relationships are the intimate and/or peripheral relationships the participants have with their network members. These relationships are the resource for fulfilling social needs, and one relationship can meet a number of social needs. For example, a good relationship with a neighbour can meet the need for companionship, connectedness, affection or behavioural confirmation. The participants name their (grand)children, partner, a neighbour, friend or professional care-giver when asked whom they see regularly and whom they feel close to. In our study, the unconditional and reciprocal love the participants have with their children and grandchildren satisfies the need for affection. For instance, one of the female participants told us that when she has not seen her son for three days, she misses him a lot. She said:

That's what makes a person human. (Participant 14)

Five of the participants live with their partner, in three cases their spouse. Two participants live together without being married. The partner is an important network member and source of companionship in the life of these participants. However, the relationship is not always perfect. One male participant admits that he often did not like his partner much. The participants without partners, often widowed, speak sometimes with love about their deceased spouse, but there are also bad marriages. In this group of participants, having a partner does not automatically mean that the participants feel less lonely or isolated, which is in line with our results of the questionnaire by De Jong Gierveld and Van Tilburg (2008).

Although the participants have network members with whom they have frequent and intimate contact, some of the participants are hesitant to call them a friend. They prefer to call them an acquaintance. An older man who has frequent contact with his network members said:

We have a good contact, but I cannot call it a real friendship. (Participant 13)

One female participant only uses the concept of friendship when there is a shared history with that person.

Relationships other than with family are important for the participants. For one female participant, the relationship she has with her domestic help is the most important. Another female participant goes to a flower shop nearby every day where she talks with the owner about things happening in the neighbourhood.

Not only relationships with other human beings could meet participants' need for love and affection. Three of the participants own a dog (or two). They all talk with love and respect about their pet. The dog shows love and affection, according to the owners. One older man said:

When I saw Tarzan [his dog] for the first time, it was love at first sight. (Participant 16)

This man said that the dog means a lot to him. He teaches him nice tricks and said that the dog is the reason that other people make contact with him and have a little chat with him. Walking the dog provides opportunities for little chats with other dog owners and a reason to go outside.

The male participants especially find it important to 'just make little conversations' with a variety of people. When the interviewer asked one of the male participants explicitly whether he sometimes feels the need to talk about deeper or emotional subjects, he answered with a definite no. He said:

I enjoy the daily conversations, about normal topics, about what you have seen or heard that day, what happens in the world and in [town where interview took place], to just have a little chat. (Participant 9)

These conversations about the weather and politics contribute to a sense of connectedness with others, with their neighbourhood and with society.

All of the participants express a strong desire to stay independent and autonomous. Often they mention that they do not want to be a burden to their family and friends. One of the male participants still drives a truck once a week for the logistics organisation of his son (which he used to own in the past), which fills him with much joy and the sense that he is useful and can help his son. This satisfies his need for behavioural confirmation and need for status. Another male participant is very proud of the royal ribbon he received for doing volunteer work. In our study, the need for status is especially present in the male participants.

Connectedness appears to be important for our participants. Participants feel connected to the lady in the flower shop, the help, or the child or grandchild. It looks like the older people want to be independent but still connected to others. This may seem like a contradiction, but can be

explained by the concept of reciprocity: one can be connected and stay independent if the relationship is reciprocal. So connectedness exists when the support is received in both directions.

The quality and the size of the social networks of the participants are diverse. Those participants with greater diversity in their network – *e.g.* family, neighbours and acquaintances – give the most active and happy impression. For example, they present themselves in an active and enthusiastic manner and speak with humour about their life and contacts. They appear to have good social skills. One male participant who makes a happy and active impression participates in a lot of social activities with family as well as with more peripheral network members. He enjoys both the warm contact with his son and grandson, and the activities he participates in arising from different hobbies. He used to be involved in several clubs and associations and is still involved in some of them. He said:

I was president of the stamp collector, carnival and walking associations. For 18 years I looked after the children in school during their break. I so enjoyed the raising of my children, I tell my son that he should enjoy every minute of his son (my grandson). Times goes by quickly. (Participant 9)

On the other hand, the participants with small and homogenous networks appear to be less active and happy. One female participant with a small network consisting of only her husband and two children is brief in her answers and does not have much to say about her life. One of the few activities she participates in is watching television. When asked how many children she had, she said:

Thank God, I only have two children. (Participant 4)

The influence of life history and personality

The group of participants is heterogeneous in terms of age, sex, living situation and marital status. In addition to these differences, there are differences in personality, coping style, health, and norms and values. These differences influence the social needs of our participants and their approach to the satisfaction of those needs. For instance, some of the participants are disabled, but nevertheless show great strength and a real positive attitude towards life. One of these participants lives independently with minor assistive care: she is in a wheelchair and can only move her arms, but she is really independent and cheerful. She actively looks for companionship and activities in which to participate. She said:

I can sit here upstairs in my room when I want, but then nothing happens, you have to go out and make contact. (Participant 1)

Some of the female participants are quite assertive. For example, they argue with local government about the accessibility of streets and buildings with their walkers and with neighbours about leaving behind trash. By acting autonomously, independently and demanding respect from authorities, these women try to meet their need for status.

The respondents differ in terms of personality, which is visible in the demands they have for (new) network members. Two higher-educated female participants appear to be selective in their network contacts. They prefer to be able to have a good conversation with someone who has the same interests and standards, which corresponds with the need for behavioural confirmation and status. Both participants experience a discrepancy between the satisfaction of their social needs in the past and in the present. One of these participants is, according to the questionnaire, most lonely. She really has a need for a good friend. The social needs of the participants seem congruent during their life and when there is a discrepancy this can result in feelings of loneliness and isolation. Some of the participants, for example, had a small network in the past, and did not feel the need for an extensive network now, and *vice versa*. For one male participant, his wife was his most important social network member, with hardly any other people in his life. When she died, his network became really small. This respondent (participant 8) is, according to the questionnaire, socially isolated.

One female participant with a small network engages in solo activities such as listening to music, doing puzzles and watching DVDs. She said:

I never feel bored, although I am alone. (Participant 15)

Other participants clearly have more social needs and also had these in their past. It appears that social needs do not change with ageing; when there is a discrepancy between the satisfaction in social need in the past and future, this can lead to feelings of loneliness or social isolation.

Possibilities and barriers to meet social needs

Besides relationships with other people, as discussed in the previous sections, other possible ways to meet the social needs of the participants are participating in activities and volunteer work, personal circumstances and social technology. This last resource to meet social needs will be discussed in the next section about the use of and attitude towards (social) technology.

Almost all of the participants participate in hobbies and activities that involve network members who fulfil the need for behavioural confirmation. For example, the nice and cheerful contacts they have when participating in hobbies and activities give a sense of shared values and ideas. One male

participant plays billiards with the same group of men a few times a week. Four of the female participants play cards in a community centre, often with the same group of people. Those frequent activities mean a lot to them and are a source of fun and belonging. One woman said:

Then I go there and play cards and have chats with people – that’s fun! (Participant 15)

The participants who engage in several hobbies and activities seem most active and positive towards life and express more feelings of independence and joy. For instance, one female participant has a passion for embroidery and she also gives lessons to other people: this makes her feel autonomous and brings her great joy.

Most of the participants did some voluntary work in the past but stopped because of health problems. Most of the participants with health problems do, however, give emotional support to friends and family. Some of the more mobile participants still participate in active voluntary work. Participants who receive support from family and friends often find it important to do something in return. One older participant twice a year organises a nice meal for the people who helped him. He said:

I do not go on vacation any more: that money I now spend on my care-givers. (Participant 12)

Personal circumstances are an important resource for the participants to help meet their social needs. These are, for example, good health, a comfortable house in a safe, friendly or green neighbourhood, and sufficient financial resources. One participant, for example, leads a comfortable life with a luxury apartment and enough money to treat himself to a tasteful dinner and wine. His grandson works in a famous restaurant with a Michelin star where he sometimes eats with his family. The neighbourhood is an important resource to fulfil social needs. With reduced mobility, the direct neighbourhood becomes more important for the older individual, both in terms of the physical environment and the persons (neighbours) who live close by. One of the male respondents appreciates his house and neighbourhood very much. He said:

I like the surroundings, the people – in fact I have everything here I want. (Participant 13)

Participants also value the safety of their house and neighbourhood. The neighbours play an important role in the lives of most of the participants. They often have an agreement to keep an eye on each other. Often the contact is good, with little chats during the week when they see each other. Some participants said they appreciate their neighbours but also value their privacy; so contact with the neighbours remains good but does not become too close.

For some of our participants, their social needs cannot be satisfied, mostly because of a lack of physical resources, such as health problems or reduced mobility. When asked about the contact with his neighbours, one male participant answered:

They [the neighbours] ask me if I can come outside and have a little chat, but then I have to bring a chair or my walker to sit. And I cannot get up any more when I am seated. One time my grandson had to help me to stand again. (Participant 16)

This participant is happily embedded in the neighbourhood and has good contacts with his neighbours.

Only two of the participants are still driving a car and can visit network members further away, but they drive only small distances and are reluctant and anxious to use the motorway because of the fast and hectic circumstances. Sometimes, but not often, the participants use public transport, mostly a bus, to visit family or friends. Because of the reduced mobility of all the participants, people living close by are becoming more important. Children who live further away do not visit their parents often. The participants who do not see their children much do not appear to be bitter because of the few visits from their children. For instance, a male participant, although he moved eight years ago and never had a visit from one of his three children since, nevertheless says that the contact with his children is good. Participants often say that their children have their own lives and busy jobs. They do not want to be a burden to their children. Therefore, their need for affection cannot entirely be satisfied or has to be satisfied by other relationships, such as neighbours and other network members living nearby.

Other barriers besides reduced health and mobility are fear of rejection and gossip, death of network members and reduced financial circumstances. Some of the female participants specifically say that they are afraid to be rejected and some are hesitant to invite acquaintances over for a visit or conversation. One female participant often plays cards with other older people in a community centre. When asked whether she sometimes invites these people over for coffee, she says she does not do that:

Maybe they already have friends or good contacts with neighbours. (Participant 15)

Sometimes participants have the feeling that the other person is not eager to accept new friendships. One woman particularly mentions that the other person already has a family and network and will not accept a new friend. Because this woman comes from another part of the country, she said:

The people have roots here and there is no place for me. (Participant 5)

Another woman says that she has nice conversations with other people, but that she does not get invitations for a visit or to do something together.

These two women do not have a large network and have an explicit need to make new contacts. Fear of gossip is another reason why some participants are reluctant to make new contacts or friends. The participants all dislike the gossiping which they observe in their direct environment. Also, the need for privacy is mentioned a few times in the interviews.

The death of network members, especially a spouse, is another important reason why social needs may not be satisfied. The social life of one of the male participants was almost totally linked to his deceased wife. They did most things together and when she died his world became much smaller. Even the contact with his children is limited because of her death. Two widowed male participants talk about the need for a new partner. They like to share things and want the company. One male participant put it like this:

I miss that one special person to whom I can talk in the evening, watching some television programme, and we can discuss the programme. (Participant 9)

Besides the death of a spouse, the participants talk about losing important friends, siblings and other network members. One female participant played cards with a group of four friends: all four of them died in a period of two years.

Another barrier to the satisfaction of social needs are the financial circumstances of the participants. Sometimes their pension is small and they do not have the opportunity to engage in the (social) activities they want. They cannot afford to go out for dinner, go to the theatre or go on vacation. When financial circumstances are comfortable, this can be a resource or possibility, as, for example, with the male participant living in a comfortable apartment enjoying a good bottle of wine and a tasteful dinner.

The use of and attitude towards (social) technology

Table 2 shows the use of social technology and the possession of technological devices such as a smartphone, mobile phone, laptop, computer and/or tablet among the 19 participants. All the participants are familiar with forms of social technology and most devices such as a computer, smartphone or tablet. The participants, both social technology users and non-users, are introduced to or informed about social technology mostly by their children or grandchildren, who almost unanimously advise their (grand)parents to use it.

Most of the participants use only a normal telephone (not a mobile phone or smartphone) to keep in contact with family and friends. They often have a mobile phone but only use it when they go out of the house.

TABLE 2. *Use of (social) technology*

Participant number	Mobile phone	Smartphone	Tablet	Laptop or desktop	Use of social technology
1	No	No	No	No	No
2	No	No	Yes	Yes (desktop)	Yes – Stepbridge
3	Yes	No	No	Yes (desktop)	Yes – Stepbridge, mail
4	Yes	No	No	No	No
5	Yes	No	No	Yes (desktop)	Yes – Skype, mail
6	No	No	Yes	Yes (desktop)	Yes – Skype, mail
7	Yes	No	No	Yes (desktop)	Yes – mail
8	Yes	No	Yes	Yes (desktop)	Yes – mail
9	Yes	No	No	No	No
10	No	No	No	No	No
11	Yes	No	No	No	No
12	Yes	No	No	No	No
13	Yes	No	No	No	No
14	No	No	Yes	No	No
15	No	No	No	No	No
16	No	No	No	Yes (laptop)	Yes – Skype, mail, chat
17	Yes	No	No	Yes (desktop)	Yes – mail
18	No	No	Yes	No	Yes – Facebook
19	Yes	No	No	No	No

They find it a safe idea to have it with them in case there is an emergency. One participant said:

I only use the mobile telephone when I go somewhere by car, so I can call the breakdown service. (Participant 13)

None of the participants owns a smartphone. They often know what a smartphone is, but see no reason to purchase one themselves, although sometimes their (grand)children encourage the purchase of it. Five of the participants are in the possession of a tablet, though one of them never uses it. Three participants use the tablet primarily to read the paper and play games on it. They do not use it for social purposes.

Six participants use e-mail to keep in touch with their family and/or friends. One female participant uses it to communicate with her daughter, who lives in Germany. The other participants use it for short practical messages to communicate with family and friends. For example, one male participant uses e-mail to confirm the date and time his daughter is visiting, so that he can provide some extra groceries. One of the participants uses Facebook in a passive way, to be informed about the lives of her close relatives. She only looks at the profiles and does not send messages or post information herself.

Two of the participants, a couple that lived together, both use Stepbridge, an online bridge program. They both see bridge, offline and online, as an important aspect of their (social) life, as they speak enthusiastically about it and play it almost every day. In total, four of the participants use the internet to play games, mostly cards.

More than half of the participants do not use any form of social technology. Sometimes the opportunity it can offer some of these participants is quite clear. One of the participants, a proud grandmother of two grandchildren, said:

I miss the smiling face of my granddaughter at the window when she came out of school and came to visit us. (Participant 14)

Her granddaughter is 18 years old and going to a distant university and is not visiting her grandparents that often any more.

Attitude towards social technology

Nine out of the 19 participants use some form of social technology (e-mail, Skype, Stepbridge and Facebook). The participants who do use social technology are enthusiastic. The participants who do not use social technology are often negative or do not see any benefits in using it. Most of them argue that when they want to contact someone they can use the landline telephone; one male participant said:

When I want something I can use the [landline] telephone and for doing the groceries my grandchildren drop by. (Participant 9)

The main reason most participants give for not using social technology is that there is simply no direct need to use it. Some experience that in their surroundings more and more people use social technology, but this does not seem to be a reason to use it themselves. They communicate and seek information mainly face to face and through the landline telephone. One male participant said:

All the information I need I hear on the radio or through the [landline] telephone. (Participant 11)

Another reason that some of the participants do not use social technology or the internet is that it is too expensive.

One participant (not using social technology), however, experienced that organisations, for instance insurance companies, become more difficult to contact by telephone. In that way she feels almost obligated to purchase an internet connection.

Participants who do not use social technology sometimes have an explicit negative and cautious attitude towards it. They have problems, for example,

with the fact that people are too busy with their smartphones to make a conversation. One male participant said:

People don't have time for each other anymore, they are all talking into their telephones or playing games on it. (Participant 11)

They may also be hesitant for reasons concerning privacy or misuse. For example, one participant mentions a television programme about social technology bullying which made him afraid to use the technology himself. Some of the participants have physical or cognitive problems hindering the use of technological devices. Arthritic or shivering hands are barriers for using social technology or devices like tablets or smartphones. According to the participants, the small parts on, for example, a smartphone or tablet, are difficult to operate. One participant commented:

It is just too difficult for me, all those little things you have to use when you app, or chat or whatever it is called. (Participant 16)

For other participants, technology is a solution to daily problems such as reading the newspaper and a connection to their network and the world. One male participant has problems with his sight and cannot read the small letters from the (non-digital) newspaper. With the tablet, he can make the letters bigger and read the paper properly. This participant sees poor eyesight as a reason to use the tablet. Three other participants with poor eyesight, on the contrary, see their poor vision as a reason for not using social technology or any other devices. For another male participant, his laptop is really important to stay connected with his family and friends:

Every morning I send them an e-mail saying: Good morning, I am still here! (Participant 16)

One male participant used the internet to find health information when his wife was ill (she passed away a couple of years ago). He found out that the medicines she got from her medical specialist were not accurate and caused his wife more complaints.

Social technology does not play an important role in the lives of most of the participants. The participants who do use social technology (nine of the 19) show positive attitudes towards using mostly e-mail and Skype programmes, however, only one participant engages (passively) with more recent social technologies, such as Facebook.

Discussion

In this study, the social needs of older people and the way they meet them are presented. To have a meaningful life and to feel independent and

autonomous is important for all our participants. They all want to be connected to other people, to a neighbourhood or to society. The relative importance of the individual's social needs and the way these are satisfied are diverse among the participants because of differences in personality, personal circumstances, coping style and life history. Some of the participants' social needs are small and easy to fulfil. Just playing cards at a community centre once a week and meeting and chatting with other people was sufficient. Other participants did need an active (social) life with a variety of network members and activities. The community centre seems an important place for our participants to be connected to others, which is in line with the study by Buz *et al.* (2014), who found that pubs and churches fulfilled an important role as meeting places for older adults in Spain.

The social needs of the participants appear to be congruent throughout their lives. If they did not have an active (social) life in the past, they did not feel the need to have one now. On the other hand, older people with an active (social) life in the past often had an active life now or indeed felt the need to have one. Where there is a discrepancy in the satisfaction of needs in the past and in the present, loneliness or social isolation can occur. The participant who felt most lonely had the largest discrepancy between her past social life and the present, where she lacked companionship and someone to whom she could talk. Our results indicate that social needs do not change much with ageing. Only the resources a person has seem to change during a lifetime, which corresponds with the SPF-SA (Steverink and Lindenberg 2006; Steverink, Lindenberg and Ormel 1998).

In our study, resources to fulfil social needs are relationships with other people, participating in activities, personal circumstances and, to a lesser extent, social technology. Lack of resources are the reason that social needs cannot be (entirely) satisfied. Such a lack of resources, as identified in the SPF-SA (Steverink and Lindenberg 2006), can be caused by health problems, reduced mobility, fear of gossip and rejection, death of network members and poor finances. For our participants, health problems are among the main reasons why some social needs cannot be satisfied: for instance, older adults sometimes cannot easily get out of the house to be socially active. In this case, the mind of the older individual wants something that their body cannot accomplish. Resources as defined by the SPF-SA is a broad category, comprising health and personal circumstances, but also personality, social skills and coping style. In our study, some resources, such as health, seem to be more important than others; however, physical and social needs can substitute and compensate for each other. For instance, a strong and positive personality, like having perseverance and

an optimistic view of life, can compensate for the loss of health, as the female participant showed who was physically disabled but (socially) very active.

Participants who were most (socially) active and most connected to others, the neighbourhood and the community seemed to be happiest. These participants were not just living their lives and making the best of it, but they were truly enjoying life. They enjoyed their hobbies, their meals, their trips, and they enjoyed their family and friends. These participants had a positive and optimistic view of life, which has been associated with a positive effect on successful and healthy ageing (Smith, Young and Lee 2004; Steptoe *et al.* 2006; Wurm and Benyamini 2014). Diversity of the social network – *e.g.* networks that comprise both intimate and peripheral members – is found to be a predictor of wellbeing (Cohen and Janicki-Deverts 2009).

We found indications that there is a difference between the sexes in the relative importance of the three types of social needs. For instance, the need for behavioural confirmation and status appeared to be more important for men than for women. Some of the male participants especially stated very clearly that they just need to have small talk, about the weather, politics or something they watched on television. They often do not feel the need to talk about feelings or deeper emotional subjects. Their connection to a person, neighbourhood or community is just having a simple conversation. For the female participants, a good friend, preferably with the same interests or background, is important, which corresponds to the need for affection and behavioural confirmation. They like to talk about their feelings and what is bothering them. The need to be independent, useful, significant and meaningful is especially important for the male participants in our study, which corresponds to the need for status. Looking at the traditional sex roles where women care for the children and men have a paid job, this has face validity (Archer 1996; Eagly 2013). In our group of participants, these traditional differences in roles were also present. Due to a growing population of higher-educated and working women, the need for behavioural confirmation, and especially status, may become more important for women as well in future cohorts of older adults; and the reverse is true for men, with a changing role in the upbringing of the children, satisfaction of the need for affection may take on a more prominent role in future cohorts of older adults. The SPF-SA does not explain these differences between the sexes.

Despite the fact that the participants in this study were selected on the basis of criteria of being lonely or socially isolated by a professional caregiver, the scores on the loneliness scale do not reflect this. Having one or more criteria for being at risk of social isolation or loneliness does not

automatically mean that the person is indeed lonely or isolated. The prediction for people being lonely or isolated seems to be complex and risk factors based on a population do not always reflect loneliness or social isolation for an individual. Although we used risk factors that have been presented in empirical studies, there is always also a subjective component (Gierveld 1998; Gierveld and Van Tilburg 2006; Victor *et al.* 2005). As a consequence, our findings may not adequately reflect the social needs of older people who are lonely or socially isolated, but the needs of a broader group of older people with different grades of expressed feelings of loneliness or social isolation.

Social technology plays a modest role in meeting the social needs of our participants. None of the participants was in possession of a smartphone. Participants who used a computer or tablet used it primarily for information, and less for communication or social purposes. The main reason not to use social technology is that there is no direct need for it. There is need for a trigger to use it, which is in line with findings by Peek *et al.* (2017). The most important device to fulfil social needs was the landline telephone, and not a smartphone. In a society where using the landline telephone is becoming less obvious, the older people who depend heavily on this form of communication may have problems communicating in the future, because fewer people use their smartphone for actually calling someone, they sometimes prefer chatting and texting. Some participants were in possession of a tablet, a laptop or desktop computer, and they used it to play games or read the paper. In this way, they stayed informed and in a sense connected to the world. Also, some of the participants used some form of social technology for social purposes, mostly e-mail and Skype, and this fulfilled the need for contact with loved ones. The participants who did use some form of social technology all had a positive attitude and clearly saw the benefits. Especially for the older adults with small networks because of health and mobility problems, social technology can play a role in fulfilling social needs. Social technology could facilitate meeting other people with similar interests, hobbies and needs. Older people, for example, who have lost a partner could contact and communicate with other older people who experienced the same pain and grief. With Skype, older people can contact their relatives and friends living further away, which is, when in the possession of an internet connection, cheaper than the landline telephone and brings an extra visual dimension. Whether social technology can solve, for example, the problem of emotional loneliness (the lack of a close friend or companion) has yet to be answered, for there is evidence that face-to-face contact is different and preferable than online contact (Knop *et al.* 2016; Redcay *et al.* 2010). Social technology on its own maybe is not a direct solution to problems like

loneliness, but it may be a means to solve or reduce it and meet some of the social needs.

Furthermore, in this study we could not learn much about the use of more recent social technology such as Facebook, as only one participant used this (passively). Social technology such as Facebook provides a larger virtual platform for social interaction than e-mail and Skype, and so its use is not directly comparable. More research, *e.g.* observational and intervention research using a large sample of older adults, is needed to investigate the attitude of older adults towards different types of social technology.

Opportunities for (technological) interventions

In this section, two opportunities for (technological) interventions supporting the satisfaction of social needs are presented, as well as a number of issues that should be taken into consideration when developing interventions.

Because of loss of resources such as loss of mobility and health in the lives of older adults, the house and close neighbourhood become more important and prominent. The loss of these resources makes the world of older adults smaller, *e.g.* in the sense that they have access to a potentially smaller network. Social technology can facilitate creating a connection to family, friends and neighbourhood members. Social technology may be able to provide people with a form of autonomy and independence by providing accessible tools for communication and connection to others and the world. It may be able to decrease distances and bring the world a little bit closer for those with reduced resources to have face-to-face social contact. We see the following two ways of helping older people to meet their social needs:

- *Support participation in the world nearby:* by enabling older people to take part in neighbourhood activities and supporting them to ask for and especially provide help and make contacts in their direct neighbourhood, we believe that older people will feel more useful, more autonomous and more connected.
- *Bring the outside world closer to home to overcome physical distance:* technology or other types of interventions can help facilitate communication or even transportation. Technology can help older people to communicate with children and grandchildren far away and make friends with people with similar interests.

Further considerations are:

- *Support people's first step towards social technology:* when our participants used some form of social technology, they always had a positive attitude towards

it. So when the first step is made, the older people all seem to benefit from the technology. In a study by Luijkx, Peek and Wouters (2015), the role of (grand)children in the acceptance of social technology was important. Family members can help to introduce social technology.

- *Respect individual differences and attitudes:* some of the most (socially) active participants have a perfectly satisfying and happy life without any form of social technology. They all appreciate non-technological contact with network members.

On the basis of these opportunities and the results of a previous systematic literature review (ten Bruggencate, Luijkx and Sturm 2017), we will focus on developing and implementing a (technological) intervention to meet the social needs of older people and prevent loneliness or social isolation.

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