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The ideal neighbourhood for ageing in place as perceived by frail and non-frail community-dwelling older people

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ABSTRACT
Due to demographic changes and a widely supported policy of ageing in place, the number of community-dwelling older people will increase immensely. Thus, supportive neighbourhoods enabling older people to age in place successfully are required. Using Q-methodology, we examined older people's perceptions of the comparative importance of neighbourhood characteristics for ageing in place. Based on the World Health Organization's Global Age-friendly Cities guide, we developed 26 statements about physical and social neighbourhood characteristics. Thirty-two older people in Rotterdam, half of whom were frail, rank-ordered these statements. Q-factor analysis revealed three distinct viewpoints each among frail and non-frail older people. Comparisons within and between groups are discussed. Although both frail and non-frail older people strongly desired a neighbourhood enabling them to age in place, they have divergent views on such a neighbourhood. Older people's dependence on the neighbourhood seems to be dynamic, affected by changing social and physical conditions and levels of frailty.

KEY WORDS – ageing in place, neighbourhood, frailty, community-dwelling older people, Q-methodology, The Netherlands.

Introduction

Many Western countries have adopted a widely supported policy of 'ageing in place' (Lui *et al.* 2009; Means 2007; Sixsmith and Sixsmith 2008). Although driven predominantly by financial imperatives to limit health and social care costs, older people also prefer to age in place (Gitlin 2003; Heywood, Oldman and Means 2002). Research supports the importance of the residential environment, showing that neighbourhood characteristics significantly influence the health (Day 2007; Muramatsu, Yin and Hedeker

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2010; Young, Russell and Powers 2004) and wellbeing (Cramm, van Dijk and Nieboer 2012) of older people, who spend large proportions of their lives in their neighbourhoods (Phillips *et al.* 2005). Moreover, mobility limitations (Shaw *et al.* 2007) and smaller social networks (McPherson, Smith-Loving and Brashears 2006; Oh and Kim 2009) increase their dependence on the neighbourhood. Thus, neighbourhood characteristics are expected to affect older people's ability to continue living independently (Cagney and Cornwell 2010; Peace, Holland and Kellaher 2006; Wiles *et al.* 2011). The need for supportive neighbourhoods further increases with the growing number of community-dwelling older people (Sheets and Liebig 2005).

Theoretical framework

In 2007, the World Health Organization (WHO) published a *Global Age-friendly Cities* guide. Based on 158 focus groups with 1,485 older people, caregivers and service providers in 33 cities in developed and developing countries, this guide identified important aspects in eight domains: outdoor spaces and buildings, transportation, housing, social participation, respect and social approval, civic participation, communication and information, and community support and health services. Although the framework was developed to encourage cities to promote 'active ageing' (*i.e.* 'to optimize opportunities for health, participation, and security in order to enhance quality of life as people age') (WHO 2007: 1), we propose that these aspects are also prerequisites for ageing in place. Therefore, and because of its wide scope and extensive design, we used this model to define neighbourhood characteristics enabling older people to age in place.

Outdoor spaces and buildings

Much research on the physical environment has examined physical activity levels and health issues among older people (Li *et al.* 2005; van Lenthe, Brug and Mackenbach 2005; Wilcox *et al.* 2003), identifying important attributes such as sufficient green spaces (Li *et al.* 2005; Sugiyama and Ward Thompson 2008), accessible buildings (WHO 2007), and age-friendly streets and crossings (Burton and Mitchell 2006; Wennberg, Ståhl and Hydén 2009). Furthermore, older people have consistently stressed the importance of neighbourhood security in outdoor spaces (De Donder *et al.* 2009; van Lenthe, Brug and Mackenbach 2005; Wilcox *et al.* 2003). Insecurity impinges on older people's sense of control and ability to walk around in neighbourhoods, especially at night (Gilroy 2007). Recent research demonstrates that physical features such as road safety and distance to services contribute to feelings of security (De Donder *et al.* 2013).

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Transportation

The availability of convenient transportation is important for ageing in place, profoundly impacting older people's independence (Coughlin 2001; Kostyniuk and Shope 2003) and ability to retain contact with the community (Cvitkovich and Wister 2001; Feldman and Oberlink 2003). Access to (private and public) transport is associated with higher quality of life (Gilhooly *et al.* 2003). Older people value driving or *being driven* by car, which avoids barriers associated with public transport (*e.g.* security issues, vehicle unsuitability) (Coughlin 2001; Fiedler 2007; Gilhooly *et al.* 2003; Kostyniuk and Shope 2003).

Housing

The home has special significance for older people, who spend approximately 80 per cent of daytime hours there (Baltes *et al.* 1999) and identify it with comfort and familiarity (Wahl and Gitlin 2007; Wiles *et al.* 2009). To avoid institutionalisation and ensure continuing independence in daily activities, housing should accommodate older people's functional needs; new housing must adhere to high access standards (Brewerton and Darton 1997) and older housing must be adapted (Means 2007). Home modifications (*e.g.* stair lifts, ramps, automatic door openers) enable older people to continue their routines, accommodating their needs for accessibility, safety and comfort (Petersson *et al.* 2008; Tanner, Tilse and de Jonge 2008). Moreover, the affordability of age-friendly housing is clearly crucial for ageing in place (Libson 2007).

Social participation

In the context of *active* ageing, the promotion of older people's social participation has received much attention. Social participation mitigates loneliness (Victor *et al.* 2005) and benefits older people's health (Avlund *et al.* 2004; Glass *et al.* 2006) and quality of life (Bowling *et al.* 2002; Gabriel and Bowling 2004). We thus expect social participation to increase older people's ability to age in place, which seems to rely on the affordability and accessibility of social activities and the presence of social interaction sites (Baum and Palmer 2002; Bowling and Stafford 2007; WHO 2007).

Respect and social approval

With advancing age, the neighbourhood may become an important source of social approval and identity (Burns, Lavoie and Rose 2012). Older people value good social bonds with neighbours (Gabriel and Bowling 2004;

Gardner 2011; van Dijk, Cramm and Nieboer 2013), which contribute to neighbourhood satisfaction (Scharf *et al.* 2002). Due to their familiarity and accessibility, neighbours may provide critical support, enabling older people to age in place (Gardner 2011). Moreover, ethnic and age homogeneity in neighbourhoods contribute to social inclusion, although some studies found that older people prefer age heterogeneity (Gabriel and Bowling 2004).

Civic participation

Engagement in civic activities is considered an essential element of ageing in place, enabling older people to maintain social contacts and continue involvement in neighbourhood events and politics (Burr, Caro and Moorhead 2002; van der Meer 2008). Although civic engagement encompasses diverse activities (*e.g.* voting, attending community meetings, involvement in public affairs), most research on older people has focused on volunteering (Martinson and Minkler 2006). Volunteering among older people may meet service needs and improve health and wellbeing (Morrow-Howell *et al.* 2003; Musick and Wilson 2003). However, various barriers – practical (*e.g.* financial, mobility), policy (*e.g.* maximum age, narrow activity range) and attitudinal (*e.g.* lack of knowledge/experienced expertise) – are found to hinder volunteering among older people (Rochester and Hitchison 2002).

Communication and information

Adequate information provision is an overarching theme of ageing in place, as it enables older people to stay connected with the community and manage their lives (Menec *et al.* 2011; WHO 2007). Older people especially appreciate the accessibility of relevant information at the local level, such as local media and newspapers, widely visited locations in the neighbourhood, public posters and direct mailing (Barrett 2005; Everingham *et al.* 2009; WHO 2007). Furthermore, everyday social interactions with neighbours enable the acquisition of personal, word-of-mouth information (Barrett 2005; Fisher, Durrance and Hinton 2004). Finally, older people increasingly use the internet to obtain information and communicate with distant family members (Russell, Campbell and Hughes 2008), although affordability issues and lack of familiarity and confidence hinder its accessibility (Selwyn 2004; WHO 2007).

Community support and health services

The importance of health and social services in the neighbourhood increases with illness and disability in advancing age (Rogero-Garcia,

Prieto-Flores and Rosenberg 2008). Home- and community-based services contribute to physical and mental health (Albert *et al.* 2005) and delay institutionalisation (Gaugler *et al.* 2005). However, frail older people's ability to perceive their service needs for ageing in place is limited (Tang and Lee 2010). Several barriers, such as lack of service awareness (Casado, van Vulpen and Davis 2011; Strain and Blandford 2002) and affordability (Casado, van Vulpen and Davis 2011; Li 2006), may hinder home- and community-based service utilisation. Service accessibility (proximity to home) is also important, given older people's declining mobility (Michael, Green and Farquhar 2006; Walker and Hiller 2007).

Frailty and ageing in place

Based on the recognition that community-dwelling older people have varying preferences, needs and resources, the WHO advocated cities to accommodate this heterogeneity by 'adapting its structures and services to be accessible to and inclusive of older people with varying needs and capacities' (WHO 2007: 1). Previous research (Eales, Keefe and Keating 2008; Keating, Eales and Phillips 2013; Menec *et al.* 2011) suggests that the level of age-friendliness can best be understood by the 'person–environment fit', *i.e.* the fit or congruence between the needs and resources of older people and environmental conditions. Demographic changes and a widely supported policy of ageing in place lead to a growing concern about person–environment fit in later life (Peace, Holland and Kellaher 2011), especially because cities are urged to meet the needs of increasing numbers of older people with complex and multi-dimensional needs. Current research indicates that nearly half of community-dwelling people aged $\geqslant 70$ years are frail (Cramm and Nieboer 2012). Although definitions of frailty abound, there is now growing consensus that frailty is not simply an equivalent of (physical) disability (Fried *et al.* 2004) but should be understood as a multi-dimensional concept (Gobbens *et al.* 2010; Nieboer, Koolman and Stolk 2010; Schuurmans *et al.* 2004). Gobbens *et al.* (2010: 85) define frailty as 'a dynamic state affecting an individual who experiences losses in one or more domains of human functioning (physical, psychological, social)', increasing the risk of adverse outcomes, such as falls, hospitalisation and mortality (Fried *et al.* 2004; Markle-Reid and Browne 2003). Older people must compensate for such losses to fulfil their needs and live independently; the availability of various resources dictates the extent to which they can do so (Nieboer and Lindenberg 2002). The neighbourhood is likely to become increasingly important in providing resources to maintain wellbeing; for example, loss of affection caused by friends' deaths may be compensated

by intensifying neighbour contact (Steverink 2001). Likewise, older people may attach greater value to accessible and proximate facilities once they are confronted with mobility loss (Menec *et al.* 2011). In line with previous research (Keating, Eales and Phillips 2013; Menec *et al.* 2011), we thus suggest that person–environment fit is not static, given that both communities and older people change. We argue that the diversity among older people should be accounted for when examining the importance of neighbourhood characteristics. As frailty captures the complex interplay of physical, psychological and social factors among older people (Gobbens *et al.* 2010; Markle-Reid and Browne 2003), we will study whether older people's neighbourhood needs may vary according to frailty. To our knowledge, we are the first to examine the preferences of frail and non-frail older people regarding their ideal neighbourhood for ageing in place.

Study aim

Previous studies identified many neighbourhood characteristics that are important for older people's health and wellbeing. However, their *comparative* importance for ageing in place remains unknown and we lack insight into frail and non-frail older people's views and their possible divergence (Burton and Mitchell 2006; Glass and Balfour 2003). Thus, this study examined frail and non-frail older people's perceptions of the relative importance of ideal neighbourhood characteristics for ageing in place.

Methods

Q-methodology (Cross 2005; Watts and Stenner 2012), increasingly used and established in socio-medical sciences (*e.g.* Cramm *et al.* 2009; Kreuger, van Exel and Nieboer 2008; Robinson, Gustafson and Popovich 2008; van Exel, de Graaf and Brouwer 2006), combines qualitative and quantitative methodologies to study people's viewpoints, attitudes or beliefs on a specific topic. A Q-study's main aim is to describe a population of viewpoints, rather than people (Risdon *et al.* 2003). Participants are asked to rank a set of statements according to their perspectives on a certain subject. Assuming that correlation among individual statement rankings reflects similar viewpoints, by-person factor analysis of the correlation matrix identifies a limited number of ranking patterns. These patterns are interpreted and described as viewpoints on the topic: frail and non-frail older people's viewpoints on the ideal neighbourhood for ageing in place.

Q-statements

First, we developed statements utilising the WHO (2007) framework for age-friendly cities. We complemented the model by searching the literature on important neighbourhood aspects for older people, accounting for aspects relevant in the Netherlands. Then, three researchers separately constructed statements from the model; after iterated comparison and discussion, 30 statements were developed. Statement comprehensiveness and unambiguity were tested in four pilot interviews with older people. All authors collaboratively excluded or rephrased overlapping statements, yielding a final set of 26 statements (Table 1).

Participants

The sample we used for this study was part of a larger evaluation study of an integrated neighbourhood approach for community-dwelling older people (a detailed description of our study design can be found in our study protocol; Cramm *et al.* 2011). Respondents from this sample previously took part in survey research for this evaluation study. We therefore had information on respondents' age, gender, ethnic background, educational level and level of (physical, mental and social) frailty (measured by the Tilburg Frailty Indicator; Gobbens *et al.* 2010). We approached older people of this sample by telephone and asked for their willingness to participate in this Q-study. To ensure wide representation of viewpoints, we used purposive sampling to recruit an even number of frail and non-frail participants aged $\geqslant 70$ years in socio-economically disadvantaged and advantaged neighbourhoods in Rotterdam (population >600,000). In total, 16 frail and 16 non-frail older people took part in this study, which is considered an appropriate sample size in Q-studies (Watts and Stenner 2012: 73). The first author conducted face-to-face interviews (60–90 minutes) in participants' homes. All interviews were audio-taped (with participants' permission) and transcribed.

During interviews, respondents were first instructed to sort the statements into three piles: (relatively) important and unimportant for their ideal neighbourhood for ageing in place, and undecided. Then, they were asked to rank-order the statements using a quasi-normal distribution (Figure 1), and to elaborate on their ordering. The interviewer focused on the ten outermost statements and considered remarks made during sorting. Finally, we solicited background information (gender, age, marital status, ethnic background, educational level, home ownership, years of residence).

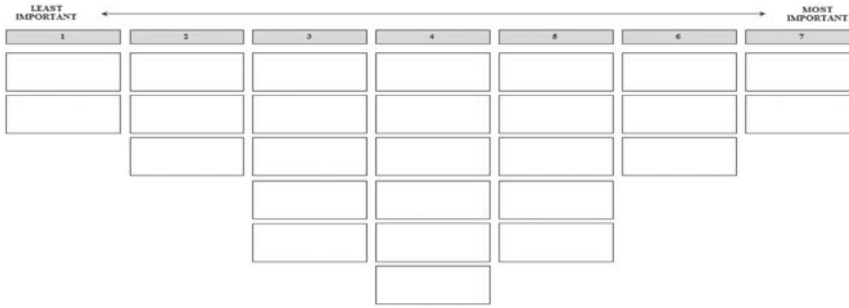

Figure 1. Ranking format.

Analysis

Q-sorts of frail and non-frail older people were separately subjected to by-person factor analysis (centroid extraction, varimax rotation) to identify corresponding statement rankings (factors). Both qualitative and quantitative criteria determined the amount of factors within both groups; the statistics indicated the maximum number of views that could be identified and the qualitative interpretation led to the selection of the factor solution that provided the most comprehensible account of the views expressed through the Q-sorts. Next, an idealized Q-sort was computed for each factor based on rankings of individual participants' loading, weighted by the correlation coefficient. This idealised Q-sort reflects how a person with a 100 per cent loading on a factor would rank the statements (Table 1). The statements that are ranked at the extreme ends (+3, +2, −2, −3) of the idealised Q-sort, the *characterising* statements, provide a first description of a viewpoint. To analyse the differences and commonalities between factors, the statement scores on each factor are normalised to *Z*-scores (with a mean of 0 and a standard deviation of 1) and standard statistical tests and cut-off *p*-values are used to identify *distinguishing* (those with a score that differs significantly from those of other factors) and *consensus* (those with a score that is not statistically significantly different between any pair of factors) statements. Moreover, we used the post-Q-sort interviews of the participants loading on a factor to gain further insight into the viewpoint represented by that factor. In the description of viewpoints in the Results section, we will include references to the characterising and distinguishing statements for a viewpoint in parentheses, indicated by the statements' number and followed by its rank score. For instance, (26; +3) at the end of a sentence indicates that the finding described in that sentence is based on statement 26 receiving a rank score of +3 in the idealised Q-sort of that viewpoint. The rank scores of all statements in each viewpoint can be found

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in Table 1. Distinguishing statements will be indicated with * ($p<0.05$) or ** ($p<0.01$). Last, we will present a factor analysis that was applied to compare idealised Q-sorts of frail and non-frail participants' viewpoints in a second-order analysis (Table 2). Data were analysed using PQMethod 2.11 (Schmolck and Atkinson 2002).

Results

This study included 32 participants (16 frail, 16 non-frail; 18 women, 14 men; average age 81 years). Four participants had foreign ethnic backgrounds. At the time of the interview, seven participants lived with spouses, one with his son, and 75 per cent lived alone. Participants had resided at their current addresses for an average of 18.6 (range 2–50) years. Q-factor analysis revealed three distinct viewpoints each among frail (F1–F3) and non-frail (NF1–NF3) older people.

Frail older peoples' viewpoints

F1: A secure neighbourhood with facilities nearby. These older people, who become increasingly frail and fear institutionalisation, largely depend on the neighbourhood to provide the necessities of life. They value a neighbourhood where they can buy groceries (26; +3*; *see* Table 1) and visit doctors, pharmacies and other public buildings (3; +2, 23; +2). These frail and relatively old (mean=87.5 years) participants prioritised a neighbourhood enabling them to preserve minimal independence in what they remain able to do: 'Previously, I took gym lessons. But after a while, I had to sit on my chair half the lesson. It made me aware of reality: another thing I'm not capable of anymore . . . the fact that I was still able to bring my neighbours' groceries [before she died], I found it so enjoyable'. They feel 'too old' for active participation in society (16; −3, 17; −2*, 19; −3*) and spend most time at home; thus, they value a neighbourhood where they feel safe (4) and comfortable at home, driven by previous experiences of harassment at their doors. Their explanations of enjoying a clean and green neighbourhood (1; +1) also reflected time spent indoors: 'I like to sit on that chair and watch children play outside'. As these people gradually draw back from society, their greatest concerns are retaining control and preventing institutionalisation: 'I don't want to end up as a wreck, being dependent on the help of others'. Although they struggled with burdening others, especially their children, who 'already had a life of their own', they concurrently commented on the critical roles of specific persons. As their friends and close neighbours often passed away,

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TABLE 1. *Idealized Q-sorts*

Domain and statement	Viewpoint					
	F1	F2	F3	NF1	NF2	NF3
Outdoor spaces and buildings:						
1. A clean and green neighbourhood.	1	1	−1*	3*	1*	−2*
2. A neighbourhood with wide sidewalks and safe crosswalks.	1	−1*	0	2	−1*	1
3. Public buildings with elevators that are easily accessible for wheelchairs and walkers.	2	0*	3	1*	−1*	3*
4. A safe neighbourhood.	3	0**	2	3**	3**	0*
5. A calm neighbourhood.	0	−1	0	1	2	−3*
Transportation:						
6. Good public transport.	1**	−3*	2**	2	3	1
7. Sufficient parking spots.	−2	−2	−3	−2	0*	−3
Housing:						
8. Affordable housing.	0	3*	1	1	1	−1**
9. Suitable housing for older people.	1	2	0	1	2	0
Social participation:						
10. A neighbourhood where many social activities are organised.	−1	0	−2	−1**	−3*	0**
11. Affordable activities for older people.	−1	−1	−1	0	−1	−1
Respect and social approval:						
12. A neighbourhood where people have respect for older people.	0	1	0	0	0	1
13. A neighbourhood where people are willing to help each other whenever necessary.	0	2	1	0	0	2**
14. No majority of immigrants in the neighbourhood.	−1	−2	−3	−1*	−2	−2
15. A neighbourhood where people know each other and dare to approach each other.	−1	2*	−1	−1	−1	2*

Civic participation:						
16. Possibilities for voluntary work.	−3	−2	−1*	−3	−2	−2
17. A neighbourhood where older people are involved, for example concerning changes in the neighbourhood.	−2*	1*	−3*	−1	−2	−1
Communication and information:						
18. Local newspaper with information about what's going on in the neighbourhood.	−1	0	−1	−2**	−3*	0**
19. Access to internet and internet courses in the neighbourhood.	−3*	−1*	2*	−3*	1*	−2*
20. A neighbourhood where neighbours, shopkeepers and others keep each other updated about what's going on in the neighbourhood.	−2	−1	−2	−2**	0	−1
Community support and health services:						
21. A neighbourhood where home care is easily accessible.	2	1	0	1	1	1
22. A neighbourhood where care-givers collaborate and keep each other informed.	0*	3*	1*	−1	0	0
23. A neighbourhood with general practioner (GP) and pharmacy at walking distance.	2	−3*	3	0*	2	3
24. Places where older people can go for advice and support.	1	0	0	0	0	1
25. Volunteers who provide help when necessary.	0	1	1	0	−1	−1
26. Shops and other facilities within walking distance.	3*	0	1	2	1	2

Note: F: frail. N: non-frail.
Significance levels (significant difference in ranking within group): * $p<0.05$, ** $p<0.01$.

these participants mostly had to depend on the support of *one* person (in most cases a child or home help) that enabled them to age in place: 'I feel quite privileged with my son. If I didn't have him . . . it would be much more difficult'; 'The most important thing I have at the moment is my home nurse'.

F2: A neighbourhood with adequate housing and a supportive network. Rather than abundant (physical) facilities (2; −1*, 3; 0*, 6; −3*, 23; −3*), participants with this viewpoint prefer strong social ties among neighbours (13; +2, 15; +2*) and professionals (22; +3*) in their ideal neighbourhood. Concerned about current health and social care savings, these participants emphasised the importance of formal and informal support networks (22; +3*, 13; +2, 25; +1). Neighbours are crucial in this respect (13; +2, 15; +2*): 'In my ideal neighbourhood, neighbours chat with each other regularly and knock on each other's door when they haven't seen someone for a while . . . Because if something's wrong over here, neighbours wouldn't notice'; 'There are a lot of neighbours who call her [a supportive neighbour of the participant] . . . For example, I had a hard time losing my neighbour next door. So we talked about it together . . . she really helped me through it'. These older people also value a well-functioning formal support network (22; +3*) that continues to provide necessary care: 'Currently, my knee strikes up, then I wonder: will I receive the care and therapy we previously received? It frightens me'. Participants feared a lack of affordable (8; +3*), suitable (9; +2) housing for older people, which they deemed an important precondition for ageing in place. They expressed a desire for involvement in such neighbourhood issues (17; +1*), arguing that their contributions could benefit the neighbourhood.

F3: An accessible neighbourhood. Among frail participants, those with this viewpoint expressed the strongest preference for a neighbourhood enabling them to remain active (6; +2**, 16; −1*, 19; +2*), despite their *physical* frailty (*e.g.* walking difficulties). They primarily require an accessible neighbourhood that allows them to be outside and undertake activities, with accessible buildings (3; +3), (health-care) facilities within walking distance (23; +3) and good public transport (6; +2**) permitting them to visit friends and favourite places: 'When I visited the Christmas market with my friend, I couldn't bring along my walker. It truly was a gruelling experience'; 'From here, I can take the tram, the subway . . . If you can't walk properly, that becomes really important'. Like public transport, the internet (19; +2*) enables them to maintain networks and remain active, preventing social isolation: 'I'm on Facebook quite a lot, I like it. It keeps you going and keeps you mixed with the people'. People with this viewpoint maintain

contacts independently and proactively, and do not depend on social (10; −2) or civic (17; −3*) neighbourhood activities.

Consensus statements

Despite discrepancies among factors, some statements were ranked similarly. Frail participants agreed that community support and health services were important, appreciating readily available home care (21) and volunteers' support (25). They explained that these services enabled them to live independently and avoid institutionalisation. Moreover, they often enjoyed the company of home helpers: 'When she arrives in the morning, we first drink a cup of tea together. Then, I share my concerns with her and she [the home help] is able to do that as well'. Frail older people also valued neighbours' mutual assistance (25) and monitoring, such as checking each other's curtains, exchanging keys and visiting lonely older people. At the same time, frail participants expressed needs for autonomy and privacy; for example, they did not prefer a neighbourhood where neighbours, shopkeepers and others keep each other updated (20) or with organised social activities (10, 11).

Non-frail older people's viewpoints

NF1: A well-kept neighbourhood with people to whom you can relate. Participants with this viewpoint value a neighbourhood where they feel safe (4; +3**; *see* Table 1) and at home, and where social and physical deterioration do not occur (1; +3*, 2; +2): 'It's the appearance of the neighbourhood, if someone comes by and the neighbourhood seems clean and proper, then you reside in a good environment'. Apart from proper outdoor spaces (1; +3*, 4; +3**) and nearby shops (26; +2), they prefer a neighbourhood with people to whom they can relate; among participants, they objected most to an immigrant-majority neighbourhood (14; −1*). The language barrier and immigrants' values and habits alienate these participants: 'We used to live with four Dutch people on this floor ... we really got along with each other. And then a Moroccan woman came and there were cigarette-ends lying in the hall ... At a certain point you think: I wouldn't step aside for an immigrant ... We sometimes consider moving to Zeeland or Drenthe [rural Dutch communities associated with friendliness]'. Although participants appreciated good social ties among neighbours, they did not desire excessive neighbour contact: 'It's good to be friendly and help one another when necessary, but it shouldn't be too intrusive'. As 80 per cent of these participants lived with partners, they had access to support and affection that other (mostly single) older people lacked and drew from the neighbourhood (16; −3, 18; −2**, 19; −3*).

Participants explained that they tried to distance themselves from older people who perceived the neighbourhood as a primary source of entertainment and information exchange (20; −2**), which they associated with social control and gossiping: 'That's what their life revolves around, what happens at someone else's place. That's their television, their entertainment. Because they know an awful lot about everybody'.

NF2: A calm neighbourhood with good facilities. Participants with this viewpoint prefer to live an independent and calm (5; +2) life, demonstrating low neighbourhood attachment (10; −3*, 17; −2, 18; −3*). They mainly perceived the neighbourhood as a place to fulfil basic needs (*e.g.* eating, sleeping), relying on their own resources to satisfy social needs: 'I'm better served by my own environment, my own friends and my own club, than joining social activities in the neighbourhood'. Accordingly, participants valued a safe neighbourhood (4; 3**) accessible by car and public transport (6; +3, 7; 0*). Unlike other participants, who often mentioned pragmatic reasons for using public transport (*e.g.* going to the doctor or shops), these people regularly provided social reasons (*e.g.* going to the theatre or visiting grandchildren). Moreover, they commonly used the internet (+1*; +1) for social contact and information: 'I can't live without it. Then I would be forced to handle my business elsewhere and I wouldn't be able to establish contacts'. These people, who appeared more resourceful and in better physical condition than other participants, often expressed aversion towards 'older' people: 'Older people . . . it won't bring you much. They don't have a future, that's the thing', preferring to surround themselves with younger people: 'I just prefer to hang around with younger people . . . you always end up in the past with the oldies, how good those days were. But I don't live in the past, I live in the present'. However, these people were aware of their relatively good physical condition, and mentioned that they might rank social (10; −3*) and physical (2; −1*, 3; −1*) statements differently when they became frail and more reliant on the neighbourhood.

NF3: A lively and engaged neighbourhood. People with this viewpoint clearly perceived a good social dynamic, rather than the appearance of outdoor spaces (1; −2*, 4; 0*, 5; −3*), as the most essential part of an ideal neighbourhood (13; +2**, 15; +2*, 10; 0**). They particularly appreciated close ties and mutual assistance among neighbours (13; +2**, 15; +2*) ('That's what you do'), mentioning 'doing the groceries, repairing a broken radio, installing the television or accompanying someone to the doctor'. Participants remarked that mutual support among neighbours may be particularly crucial for older people, especially those without (nearby) family, who increasingly face cognitive and physical impairments: 'I found it

very important. It's your first line of aid right?' Moreover, they favoured a dynamic, lively neighbourhood atmosphere (5; −3*): 'I like the neighbourhood to be dynamic. I'm already quite old myself … So I don't want the neighbourhood to be calm as well', best achieved by an age mix: 'it's what makes the neighbourhood cheerful and interesting'. Among non-frail participants, they attached most value to neighbourhood social activities (10; 0**), believing that being active benefits one's health: 'I think it's important, people should remain active … I do have geraniums, but I'm not sitting behind them [a Dutch expression for inactive (often older) people]. That's what I noticed during my voluntary work in the nursing home. The way people sat in their chair, they looked paralysed. But when I joined them and talked to them, they literally came up in their chair'. Accordingly, these people stated that the proximity of care facilities (23; +3) and availability of accessible public buildings (3; +3*) are important preconditions enabling older (disabled) people's participation in society: 'Of course these [public buildings] should be accessible. They should allow you to go anywhere with them. They may be disabled, but that doesn't mean you should write them off'.

Consensus statements

Good public transport (6), enabling continued visitation of favourite people and places, was a common preference among non-frail participants. Many appreciated public transport within walking distance of their homes. The proximity of shops and other facilities (26) was also important, as buying one's own groceries contributes to a sense of independence. Like frail participants, they valued readily available home care (21). They did not value engagement in civic activities (16, 17), perceiving voluntary work (16, 25) as a way to reduce public spending and commenting on volunteers' heavy burdens. They remarked that only flexible and – truly – voluntary work would be successful for older people. Non-frail participants agreed on the relative unimportance of a neighbourhood where people are involved in neighbourhood decisions (17), mentioning that they often got involved too late, felt unheard and considered neighbourhood decision making a matter for younger people.

Comparison of frail and non-frail older people's viewpoints

Some patterns of consensus in frail and non-frail participants' viewpoints emerged. Viewpoints F1 and NF1 were highly correlated (0.86), due mainly to the common desire for a safe neighbourhood with abundant facilities (Table 2). However, post-Q-sort interviews revealed distinct considerations

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TABLE 2. *Correlations between viewpoints*

	F2	F3	NF1	NF2	NF3
F1	0.13	0.59	0.86	0.54	0.61
F2		0.04	0.16	−0.06	0.15
F3			0.41	0.58	0.55
NF1				0.57	0.32
NF2					0.10

Note: See Table 1 for details of viewpoints.

underlying the rankings; frail participants referred mainly to safety at home, whereas non-frail participants referred to outdoor safety. Furthermore, viewpoints F3 and NF3 were correlated (0.55), primarily based on the importance of remaining active through one's social network (F3) or the neighbourhood (NF3). Moreover, participants with viewpoints F3 and NF2 (0.58) did not rely on the neighbourhood to fulfil social needs, but on their own social networks and the internet. Viewpoint F2 was distinctive, demonstrating no strong correlation with any other statement.

Discussion and conclusion

With increasing numbers of community-dwelling older people, interest in supportive neighbourhoods that allow (frail) older people to age in place is growing. Although previous research has already identified a large number of important neighbourhood characteristics (WHO 2007), we lack insight into the *relative* importance of these characteristics. In this Q-methodological study, we asked frail and non-frail older people to rank neighbourhood characteristics according to their view of the ideal neighbourhood for ageing in place. We thereby respond to the previously highlighted need to identify 'leverage points' that are particularly relevant in enabling older people to age in place (Menec *et al.* 2011; Stokols 1996).

We identified three viewpoints in each group. Although participants' perceptions of the ideal neighbourhood differed, all emphasised the importance of maintaining independence. In line with previous research (Peace, Holland and Kellaher 2011), older people seem to evaluate important neighbourhood characteristics in terms of the extent to which they contribute to retaining a sense of control and autonomy, taking account of both past experiences and future expectations. Frail participants often expressed preferences reflecting their conditions, whereas non-frail participants were influenced more by previous experiences with physical and/or mental impairment (*e.g.* due to a fall, ailing partner) or imagined

future impairments. The 'outdoor spaces and buildings', 'transportation', 'housing' and 'community support and health services' domains of the WHO's 'Global Age-friendly Cities' framework (2007) appeared to be most essential to older people. Participants indicated that living in close proximity to services enabled them to meet necessities, such as buying groceries and visiting the doctor. In the same way, an accessible neighbourhood, public transport and safety were perceived as prerequisites for independence.

Safety is an important meta-goal to avoid older people's (further) loss of social and physical wellbeing (Nieboer, Koolman and Stolk 2010; van Bruggen 2004). Being caught in a so-called loss frame is particularly damaging for wellbeing (Nieboer 1997). Feelings of insecurity affect older people's willingness to take risks: 'if something goes wrong, is there someone who can help us? But when you're young, you don't reflect upon those matters . . . But now we do . . . a safe neighbourhood, that's what you care for . . . previously, if someone harassed you, you could run, but that's not the case anymore'.

In line with previous research (Menec *et al.* 2011; Novek and Menec 2013; Walker and Hiller 2007), physical and social neighbourhood aspects were closely related. For example, participants associated a safe neighbourhood with close ties among neighbours and a sense of familiarity. When commenting on the importance of nearby grocery stores, participants concurrently mentioned that these facilities connected them with neighbours: 'When I'm buying my groceries, I always encounter someone I chat with. If you're able to talk with someone – albeit superficial – it benefits your day'. Such – seemingly – small everyday interactions often underpin strong senses of support and belonging; one participant proudly commented on the importance of being noticed: 'When I'm walking in the town, you should see how many people wave at me'. All participants valued neighbour contact (in relation to their needs), although the desired degree of such contact ranged from low-level everyday interactions to strong social and emotional bonds. Many participants, however, controlled the amount of neighbour contact to safeguard their privacy, which was also reflected by moderate rankings of statements in the 'respect and social approval' domain. Thus, participants highlighted the critical tension between appreciating neighbour contact as a key source of support and preventing it from becoming too constricting. Likewise, most participants did not desire active social or civic participation, perceiving it as (relatively) unimportant for wellbeing, despite policy makers' promotion of such participation among older people. Whereas frail participants often indicated that they were consumed with daily activities and the challenges of ageing, non-frail participants (excepting those with viewpoint NF3) preferred to rely on their own social networks,

which had formerly met their social needs. Moreover, participants regularly associated civic engagement with the shifting of responsibilities to the community, mainly to enable cutbacks in health and social care (*see also* Martinson and Minkler 2006).

This Q-study provided insight into older people's preferences for ageing in place. Participants appreciated the opportunity to express their views concretely about a relevant and vital theme. *Face-to-face* Q-interviews, rather than self-administered Q-sorts, were highly beneficial in this group because we could further clarify the procedure during ranking. Moreover, the interviews allowed us to gain impressions of older people's living situations and insights into motives underlying rankings. For example, consistent with previous findings (Peace, Holland and Kellaher 2011), frail and non-frail participants repeatedly highlighted their wish to age in place and displayed deep attachment to their ability to make decisions about where to live. Some participants felt ignored by others (*e.g.* family members, doctors) who tried to convince them to move to a nursing home, as they perceived their homes as ideal for ageing in place. This finding stresses the need to enable (frail) older people to reside continuously in their 'own' neighbourhoods and support them in their capability of finding ways to maintain their routines and manage themselves in their own homes (Peace, Holland and Kellaher 2011). Another recurrent theme in interviews was the presence of immigrants in the neighbourhood. Although some participants objected to an immigrant-majority neighbourhood in interviews, arguing that immigrants' habits and values impeded on their sense of 'home', they simultaneously felt uncomfortable about explicitly ranking the corresponding statement (14) as 'important', possibly resulting in socially desirable responses. Because only this statement was affected in this way and we extracted participants' views on this theme in interviews, we do not believe that our results were affected considerably.

Some other methodological issues merit further discussion. First, although this study provides insight into older people's main views about their ideal neighbourhood for ageing in place, surveys are needed to examine the prevalence of these views in a wider population. Second, although participants were instructed to rank statements according to their views of the *ideal* neighbourhood, (unsatisfactory aspects of) their own neighbourhoods may have influenced preferences. However, we repeatedly emphasised our search for the *ideal* neighbourhood in face-to-face interviews.

As in previous research, frail and non-frail older people strongly desired a neighbourhood enabling them to age in place; however, we identified divergent views on such a neighbourhood. This study demonstrated that older people's dependence on the neighbourhood is not static, but affected by changing social and physical conditions and levels of frailty. In line with

previous research (Peace, Holland and Kellaher 2011), the 'fit' between the needs and resources of older people and environmental conditions thus should be considered as a dynamic process, incorporating changes over time in both neighbourhoods and people. Although frail and non-frail participants highlighted similar themes, such as their common desires for independence, security and belonging, the meanings of these themes differed (*e.g.* Wiles *et al.* 2011). Both groups, for example, were attached to a safe neighbourhood, but whereas frail older people mainly referred to safety within the house, non-frail older people mentioned examples of outdoor safety. Likewise, frail older people may feel independent through the support of a home help, whereas non-frail older people may derive independence from their ability to clean their house by themselves. Moreover, this study provided evidence for the argument that different neighbourhood characteristics often interact with each other, which highlights the need to consider physical and social neighbourhood characteristics simultaneously.

In building neighbourhoods that support independent living, the dynamic interplay between the varying needs of frail and non-frail older people and environmental conditions must be recognised. Supportive neighbourhoods may play a crucial role in providing older people with resources to compensate social and physical losses as they age, and to live independently and age in place as long as possible.

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