



Exploring assets of people with memory problems and dementia in public space: A qualitative study

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ABSTRACT

Background: With more people with dementia living at home, neighborhoods and public spaces are being recognized as dementia care settings. Further, there is a shift from emphasizing the loss and decline of a person with dementia to a focus on strength and capacity. The aim of this paper is to identify assets that contribute to the well-being of people with memory problems and dementia living in a community context in the Netherlands.

Methods: A deductive content analysis, based on the Asset-Based Community Development (ABCD) framework, was used to analyze qualitative data collected through walking interviews and in-depth interviews with eight participants. The participants included six women and two men and ranged from 59 to 93 years of age.

Findings: We identified an inventory of physical, social and institutional assets that contribute to participants' well-being. These assets are divided into two categories that relate to well-being: a) assets to navigate public space, and b) assets to support social inclusion and encounters. We observed that it was not one isolated type of asset that contributed to well-being, but more a combination of different assets. Moreover, we found that participants used assets to gain a sense of relief, confidence and support their sense of belonging and inclusion.

Conclusion: These findings inform an asset-based perspective of people living with memory problems and dementia that can promote engagement to support dementia-informed community development, public space design, and healthcare innovations to improve the well-being of people with a range of memory problems who live at home.

1. Introduction

In several Western countries, increasing healthcare costs and the preference to stay at home have led to the deinstitutionalization of long-term care (Low et al., 2011). This shift in care policies and practices has resulted in more people living with dementia at home. The actual number of people with dementia is unknown, as many people, especially at the early stage, are not diagnosed (Prince et al., 2015; Van Den Dungen et al., 2012). Regardless if a person is living with a formal dementia-diagnosis or dementia-related symptoms, they can benefit from innovations in care such as memory clinics and technology (Clare et al., 2014; Hoel et al., 2021; Low et al., 2011). However, there is

limited evidence on the needs and effectiveness of community-based services supporting people with dementia who live at home (Dawson et al., 2015; Gabriel et al., 2015, 2014). People living at home with memory problems and dementia are at higher risk of withdrawal, isolation, social exclusion and difficulties getting lost compared to healthy older adults which can impact their well-being (Hadjri et al., 2015; Hung et al., 2020; Maki and Yamaguchi, 2014). The way dementia is understood by the general public and portrayed in media, primarily illustrating the end-stage symptoms, has resulted in dementia being the most feared disease in many countries next to cancer (Awang et al., 2018; Van Gorp and Vercausse, 2012). The stigma of dementia and a focus on deficits, loss and decline has led to an associated sense of

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hopelessness and a dehumanizing view of people with the disease (Behuniak, 2010; Vernooij-Dassen et al., 2021). Further, the limitations and barriers experienced by people with dementia have been well-documented through a focus on decline or dementia research represented by caregivers or stakeholders (Henriksen et al., 2020; Lin and Lewis, 2015; Montero-Odasso et al., 2018; Roland and Chappell, 2015; Soilemezi et al., 2017).

In recent years there has been a shift in discourse from loss and decline of a person with dementia to emphasizing their strength, capacity and contribution (Clarke et al., 2020; McParland et al., 2017; Swaffer, 2014; Vernooij-Dassen and Jeon, 2016). Further, some dementia studies identify participants with a range of dementia-related symptoms, not a formal diagnosis, as an approach to capture a range of experiences of individuals who are not diagnosed or choose not to disclose the type of dementia (Clark et al., 2020; Michalowsky et al., 2016; Odzakovic et al., 2019; E. 2018; Smith et al., 2016; Sturge et al., 2021a; Ward et al., 2021). Also, the dementia research setting has evolved from an institutional environment to exploring interactions within the community, referring to a local geographical area where people with dementia live at home (Blackman et al., 2003; Clark et al., 2020; Hung et al., 2020; Keady et al., 2012; Li et al., 2021; Odzakovic et al., 2019; E. 2018; Ward et al., 2021; R. 2018). It is in this context that the World Health Organization (WHO) has developed a global action plan to guide the public health response to dementia (Cahill, 2020). As a part of this plan, dementia-friendly community initiatives are being developed to support people living with dementia-related symptoms. In order for an environment to be considered dementia-friendly, both the social and built environments must have supportive features (Courtney-Pratt et al., 2018; Davis et al., 2009; Lin and Lewis, 2015). However, little is known about how community features contribute to well-being. Most guidelines used to measure dementia-friendly initiatives are based on research from institutional settings, resulting in few evidence-based initiatives that support the well-being of individuals living with dementia in a community context (Førsund et al., 2018; Hebert and Scales, 2017; Lin and Lewis, 2015; Seetharaman et al., 2020). As summarized in recent scoping reviews, features of the social and built environment can affect well-being and behavioral/ psychosocial outcomes for people with dementia (Gan et al., 2021; Sturge et al., 2021c). The Gan et al. (2021) review identified aspects of the built environment, such as safe crossings, distinct landmarks and public art, that are beneficial for people with dementia. This review found a limited number of studies regarding community participation of people with dementia that explored optimizing socio-environmental stimuli and minimizing physical barriers in dementia-friendly neighborhoods. The Sturge et al. (2021c) review demonstrated how people with dementia use features of the social and built environment to navigate, engage and maintain a sense of self, social health and well-being. Features such as friends, family and formalized professional support help connect people with dementia to society, while public space features such as natural environments, landmarks and signage allow people to interact with public space. In both scoping reviews, the majority of articles included are based on studies from the UK and Sweden.

1.1. An asset-approach to dementia

An asset-based approach has been identified by dementia advocates as a valuable means to create a more strength-based, optimistic narrative about dementia which highlights the capacities of people with dementia opposed to a narrow focus on needs, barriers and decline (Rahman and Swaffer, 2018). The asset-based approach to community development (ABCD) to health and well-being was first introduced by Kretzmann and McKnight (1993) to recognize the strengths and “assets” of individuals and communities rather than focus on deficiencies and problems. Morgan and Ziglio (2007: p.18) later positioned the asset model for public health by defining health-assets as “any factor (or resource), which enhances the ability of individuals, groups,

community, populations, social systems and/or institutions to maintain and sustain the health and well-being and help reduce health inequalities”. Assets can be broadly categorized as physical, human, social, financial, environmental and political (Green and Haines, 2017). Asset-based and action-research approaches to health promotion are becoming increasingly popular to address health inequalities by empowering communities to take more control of their health in a variety of global contexts (Cassetti et al., 2020; Den Broeder et al., 2017; Foot and Hopkins, 2010; Harrison et al., 2019; Henry, 2013; O’Cathain et al., 2008; Roy, 2017; Taliep et al., 2020; Van Bortel et al., 2019). However, the asset-approach is new to promoting healthy aging and dementia care (Chadborn and van der Marck, 2019; Clarke et al., 2020; Kobayashi et al., 2020).

The aim of this paper is to identify assets in public space and conceptualize how such assets support the well-being of people with memory problems and dementia. Well-being, in the context of this paper, is defined as “when individuals have the psychological, social and physical resources they need to meet a particular psychological, social and physical challenge” (Dodge et al., 2012: p. 230). This definition of well-being reflects the asset definition of Morgan and Ziglio (2007: p.18) and captures what people with memory problems and dementia can do and how they can live well by relying upon resources. These concepts have recently been linked to develop an asset-based conceptual framework for the measurement of the well-being of people with dementia (Clare et al., 2019; Clarke et al., 2020).

2. Methods

2.1. Study context and design

2.1.1. Study context

The Netherlands is a small Western European country known for a flat landscape, cycling and innovation. The country’s healthcare system has characteristics of both conservative and social-democratic regimes and social health insurance system (Böhm et al., 2013; Esping-Andersen, 2003). Relying on slow transportation is common and unique to the Netherlands, where planning policy can discourage car use and promote cycling and walking. Further, spatial retail planning allows more people, of various abilities, to easily walk and cycle for shopping where other European countries rely on car transportation for shopping (Schwanen et al., 2004). Of the 17 million people who live in the Netherlands, 19.5 percent of the population are over the age of 65 (CBS, 2020). It is estimated that 6.9 percent of the total population in the Netherlands has dementia (World Health Organization, 2017) with more than half living at home (Alzheimer Europe, 2021). People who live at home with dementia in the Netherlands are often provided care by a combination of informal care (e.g., family members) and formal care provided by professional home care support. Some neighborhoods have been designated as Integrated Service Areas (ISAs) with community-based healthcare and social support made available to those with relatively high care needs who live at home. Most of these services are allocated within a 400 meter walking distance from an older person’s home (Jansen et al., 2018).

2.1.2. Study design

This study is embedded in the COORDINATES project, a larger, multi-prong, international interdisciplinary research initiative. A detailed description of the project, including the research methods, can be found in the published protocol (Sturge et al., 2021b). The overarching aim of the project is to understand the mobility patterns and mobility experiences of older adults with memory problems and dementia living at home, and how this data can inform shared decision-making. This paper is based on data collected in the Netherlands between November 2018 and July 2019. Ethical approval for this data collection phase was obtained from the Research Ethics Committee of the Faculty of Spatial Sciences, University of Groningen.

Participants were recruited through referrals from dementia case managers, community outreach, flyers and media based on the following criteria: i) being over the age of 65 years, ii) living at home independently with a partner, family member or alone, and iii) experiencing memory problems. For this study, the term “memory problems” was used to recruit and refer participants to this study. The term is considered less contentious than dementia, where people, especially at the early-stage of the disease, may not have a diagnosis or may feel stigmatized by the word (Hellström et al., 2007; Novek and Wilkinson, 2017). Dementia case managers in the Netherlands also advised not to use the term “dementia” where some of their clients were in the process of getting a diagnosis (e.g., not yet formally diagnosed), nor would they openly disclose their diagnosis to a researcher. This broader, inclusive approach allowed for the recruitment of participants with a variety of experiences related to memory problems. The term “dementia” is only used in circumstances where participants, or the caregiver, used the term. Caregivers, such as significant others or relatives, were not the target population for this research, however, in some cases they supported the participation of the participant.

Data were collected through (1) a sociodemographic survey, (2) a walking interview, (3) GPS tracking, (4) travel diary entries, and (5) an in-depth interview. The combination of data provided a comprehensive overview of mobility. A detailed description of the data collection is described in a separate publication (Sturge et al., 2021b). For this paper, we analyzed data collected from the socio-demographic survey and the qualitative data collected through walking interviews and in-depth interviews. These interviews were conducted by an experienced research team inclusive of a research assistant, PhD student and post-doc researchers. The walking interview provided contextual information on how participants’ movements relate to the social and built environment by asking questions related to their attitudes and feelings when “in place” (Carpiano, 2009; Jungers, 2010). Referring to a list of topics and probing questions, the walking interviews explored typical experiences including the preferred route and encounters along their way. Participants were able to point out features in the neighborhood which provided the researcher opportunities to ask in the moment questions (Klaassens and Meijering, 2021). The purpose of the in-depth interview was to discuss activities and experiences the participants had over a two week period. Both the walking interviews and in-depth interviews typically lasted between 45 and 60 min. It should be noted that one participant (Netty) did not do a physical walking interview. The research team modified this interview by using the walking interview guide to gain a hypothetical sense of the participant’s typical experiences outside the home, which worked well. These interviews were held in Dutch, audio-recorded and transcribed verbatim in Dutch.

2.2. Analysis

A secondary analysis was conducted on data from eight participants. Participants were selected based on participation in both the walking and in-depth interviews. Three of the participants were referred to the project by a dementia case manager while others self-referred based on information presented at a community meeting ($n = 3$), a flyer ($n = 1$) and the project website ($n = 1$). Two of the participants openly spoke about having dementia, while others described challenges associated with experiencing memory problems. The framework that guided the data collection did not use the asset-based framework; however, we were able to identify assets that appeared to support day-to-day mobility practices. To analyze the data, a deductive content analysis (Elo and Kyngäs, 2008; Green and Thorogood, 2004) was used to content code the interview transcripts referring to a categorization matrix based on the descriptions of assets described in the ABCD framework (Table 1).

The software packages Microsoft Word and ATLAS.ti 8.4 were used to code the pseudonymized transcripts. Two authors coded the data to ensure the interpretative validity of the data. MK coded the original Dutch transcripts while JS translated the transcripts into English, using

Table 1
Sample Codes, Definitions and Examples.

Code	Asset description based on Kretzman and McKnight (1993)	Examples identified in transcripts
Physical assets	Including land, natural resources, and built environment	Pathways for walking and biking, benches, roadways
Social assets	Connections or relationships formed between individuals Individuals who live in the community and their unique skills and contributions	Friends, neighbors, family
Institutional assets	Associations of groups of people who come together around a common purpose Institutions including businesses, schools, and other private or government entities	Community centers, grocery stores, nursing homes

Google Translate, and coded the transcripts. The coders compared codes and participant statements to ensure the credibility of the coding process and to develop a shared understanding of the data (Baxter and Eyles, 1997; Tong et al., 2007). Issues with the cross-language nature of this research were expected, such as interpreting and representing the meaning of text translated from Dutch into English (Squires, 2009; Van Nes et al., 2010). To validate the text, a native Dutch speaker MK checked the context and comprehensibility of the translated quotes. This process led to an inventory of assets based on the coding scheme (Table 1). Further, an inductive approach was used to identify and validate new codes (e.g., animals). As a next step in the coding process, JS and MK refined the inventory of codes by independently identifying and categorizing assets that appeared to off-set challenges associated with memory problems and dementia and support well-being. This process led to assets being coded into two categories; assets that off-set challenges with getting lost and supported social inclusion. These categories correspond to earlier dementia studies that describe common challenges with navigating public space (Bartlett and Brannely, 2019; Brittain et al., 2010; Brorsson et al., 2011; Clarke and Bailey, 2016; Duggan et al., 2008; Mitchell and Burton, 2006; Öhman et al., 2008; Sandberg et al., 2017; Sheehan et al., 2006; R. Ward et al., 2018) and maintaining social connections (Clarke and Bailey, 2016; Odzakovic et al., 2019; Tranvåg et al., 2015). The two categories were finalized through discussion with two additional authors GW and LM.

3. Findings

3.1. Participant characteristics

The eight participants were born and raised in the Netherlands and ranged from 59 to 93 years of age with most being over 70. Six women and two men with a range of severity of memory problems and dementia progression were included. Of the eight participants, there was a dyad of three individuals and their caregivers (Table 2).

Six of the participants lived in the neighborhood for an extended period and the other two participants (Netty and Bea) recently moved back to the neighborhood where they once lived. The participants’ sense of familiarity with their neighborhoods is relevant where it can influence their ability to identify and use assets to support their well-being. Marie, for example, expressed a strong sense of belonging to their neighborhood: *I feel connected because I’ve always lived here. I belong here. This is part of me. [...] You know where everything is.* Similarly, other participants frequently engaged in formal and informal activities outside of their home. Based on a primary analysis of this dataset, and detailed in an earlier publication (Sturge et al., 2021a), all participants were within walking distance to community amenities such as grocery stores, community centers and health services from their homes.

Table 2
Characteristics of participants.

Pseudonymized Participant Name	Gender	Age Range	Household composition	Length of Time in the Neighborhood
Marie	Female	80 – 89 years	Living alone	26 years
Annie	Female	90 – 99 years	Living alone	60 years
Harold	Male	60 – 69 years	Living alone	32 years
Netty	Female	70 – 79 years	Living alone	4 years
Bea	Female	70 – 79 years	Living with partner	5 years
Helena	Female	70 – 79 years	Living alone	41 years
Vera	Female	90 – 99 years	Living alone	51 years
Warren*	Male	50 – 59 years	Living with partner	18 years

* A case manager referred this participant to the study. Although they were younger than our age limit for recruitment, it was decided to include them where their experiences were similar to the other participants.

3.2. Assets to offset challenges with memory problems and dementia

Our findings identify three types of assets: physical, social, and institutional assets that support the well-being of people living with memory problems and dementia on a day-to-day basis. The assets are divided into two categories: a) navigating public space, and b) supporting social inclusion and encounters (Table 3).

3.2.1. Navigating public space

3.2.1.1. Physical assets: landmarks and designated pathways. Participants described using a variety of physical assets to orientate themselves in public space. For instance, Netty described independently navigating the way to the hospital: *I know that I am going to turn left here at the traffic light, cross the bridge and all the way back, then left and then I am already on the path to go to the hospital.* Netty’s story shows how traffic lights and a bridge are used for orientation, which provides her with the confidence that she is on the right route. It is easier for her to remember one or two long streets with clear orientation points, like traffic lights. Other participants used similar strategies to navigate public space, where

Table 3
Summary of findings.

Theme	Identified assets
<i>Navigating public space</i>	Physical assets: <ul style="list-style-type: none"> • Traffic lights • Roads • Buildings • Designated pathways in parks Social assets: <ul style="list-style-type: none"> • Family • Friends • Neighbors • Strangers
<i>Supporting social inclusion and encounters</i>	Social assets: <ul style="list-style-type: none"> • Family • Friends • Neighbors • Strangers • Animals Physical assets: <ul style="list-style-type: none"> • Benches • Parks Institutional assets: <ul style="list-style-type: none"> • Community centers • Care homes • Shops

familiarity with the assets, such as buildings, roads, traffic lights, and churches was key for being used. Often, identifying physical assets provided participants with a prompt to pause and regain their sense of orientation to continue on.

Designated pathways are a beneficial asset to navigate outdoors independently and as a safety strategy if something happens. Relying on a pathway as a physical asset was not talked about often but for Marie, a set route and routine for her daily walk in the park were very important. When asked if she sometimes takes a different route Marie explains: *I have a fixed route these days in case something happens. [...] I just go where I can easily walk. This is my round (the walk taken during the walking interview) that I take every afternoon around half past one.* This statement indicates that taking the same route at the same time of the day provides Marie with a sense of security. If something were to go wrong, she could manage or someone (her caregiver) would know where to find her. Although other participants described using designated pathways on their well-being, they did describe using familiar routes as an asset that provided a sense of security and strategy that prevented them from getting lost.

3.2.1.2. Social assets: friends, neighbors and strangers. Participants also talked about relying on others to navigate their way home, whether calling family members for help or asking strangers to help orientate when they got lost. Three participants used their bike as a mode of transportation. Netty and Bea described difficulties when biking, such as remembering routes and experiences of getting lost. To manage these risks when biking, they follow behind someone else on their bike before going on their own. Netty practices a route by following a friend so that she can later navigate the route independently with confidence: *If I have done the route a few times, it is okay.* By relying on her neighbor as a social asset, Netty can overcome the fear of getting lost when she is cycling through public space. This is not always a straightforward process though, since sometimes the neighbor takes a route that Netty does not like, for instance if there are many small streets and turns to take. However, Netty can negotiate with her neighbor what a comfortable route looks like for her. When cycling, the need to be familiar with and confident about a route is higher than when walking, due to the higher pace. Overall, feeling confident not to get lost when in public space or knowing what to do when one gets lost allows participants to navigate in public space independently.

3.2.2. Supporting social inclusion and encounters

3.2.2.1. Social assets: family, friends, neighbors, strangers and animals. The majority of the participants had frequent contact with their family who provided social interaction but also practical support, such as meals and transportation. Several participants also spoke of long-time friendships with people they have known since grade school. These long-standing friendships provided a sense of familiarity for participants and opportunities to have spontaneous social interactions on the streets or by paying a visit. Furthermore, the majority of the participants had frequent contact with their neighbors whether it is to have a regular coffee or playing games. Neighbors also provided help and support. For Warren, he talked about relying on several neighbors for help when he had trouble with his mobility scooter: *Then the neighbors all came to help. [...] If you ask, they will come and help you.* Similar to Warren, most other participants had positive relationships with their neighbors and they would look out for each other and help where needed. Warren’s case was distinct though, as his wife explained that they had informed their neighbors about Warren’s dementia at an early stage: *We stated clearly in the beginning that this (dementia diagnosis) is what is going on, so don’t be weird about that. Suppose that, you never know [what happens]. But this is what’s going on. They know, yes.* Informing the neighbors of Warren’s diagnosis is a strategy to allow the surrounding community to provide more constructive support in circumstances where Warren requires help

related to symptoms of his condition. Although other participants were not as open about their condition, they did rely on their neighbors for practical and social support where needed.

It is not only humans that provide valuable social encounters; animals can also play a unique social role. For some participants, animals provide meaningful interactions. For instance, Harold fondly describes how he feeds the ducks and cats in his neighborhood for twenty-five years. *I just enjoy doing it and it's also a distraction. I haven't had any fights with the bosses (the owners) yet, so I think they're actually happy with it. [...] The animals always come in nicely satisfied, lie down comfortably in the basket and fall asleep.* Harold's story illustrates how he feels good about his gesture that provides a positive interaction and meanwhile, the animals show their appreciation through their behavior. Caring for ducks and cats instills him with a sense of responsibility and being needed. It should be noted that Harold was a unique case in the sense that he described challenges interacting with humans, which make his valued interactions with animals most important to him. However, other participants also talked about their meaningful engagement with animals. Thus, our data illustrate how interactions with animals can provide a sense of connection and meaningful interactions in light of challenges faced when living with memory problems and dementia.

3.2.2.2. Physical assets: benches and parks

Several participants describe spontaneous social encounters with others while sitting on a familiar bench nearby their home. These encounters can be with friends, familiar strangers or with others varying in age and ethnicity. For Annie and Vera, grocery stores with benches are a good place for spontaneous encounters with others. Annie describes a bench outside a grocery store as a place for a repeated social encounter with a particular young man who is a familiar: *A young man like this always comes to [the supermarket]. I often meet him and then we sit down on a bench for a while, but I cannot think of his name anymore.* While Vera described an encounter with a friend she had not seen for a while: *So we sat down on the bench over there, we caught up.* Vera also described how she meets a friend on a bench close to the supermarket, to sit and chat for a while. Other participants also spoke about the social role of benches. Marie, for instance, identified a bench in a park as a place also to have informal encounters and observe the people living in her community such as families from the nearby refugee and migrant center: *I can sit there for an hour. Every now and then someone is walking by, you talk a little, and then the afternoon is passing by very nicely. [...] Refugees come here and they lay down here in the grass and let their children play. [...] So you have little chat with them. [...] They are always very friendly to me. Also when I am sitting here on the bench, the boys (children) are also very friendly".*

For Marie, the bench is a comfortable and quiet place, where she enjoys observing and participating in everyday life. Benches, whether they are near grocery stores or in parks, are a physical asset that provide a place for social encounters with both familiar and unfamiliar people, thus showing how a physical asset can facilitate social inclusion.

3.2.2.3. Institutional settings

Organized social activities were mentioned by several participants. Participants described going regularly to community centers for meals, choir and games. Three participants talked about the social function of care homes in their neighborhood. Annie and Marie visit friends who live in the nearby care home. They both regularly attend the organized activities at this care home where the activities are for everyone, not just the residents. Warren goes to a care home for people with dementia twice a week for a customized activity program. Together with his wife and case manager, they developed a care plan for Warren based on his age and his desire to continue to live at home: *Yes, I want to go back and forth a bit. I can't take that long, yes. Have a chat here, have a chat there.* Despite not living there, Warren still interacts with the other residents and participates in some of the social activities. Two other participants also went to similar care facilities to participate in organized activities which enabled them to maintain a structured daily life and to continue

to live at home.

All participants mentioned shops as a place that they go, especially grocery stores. Going to the shops is part of a ritual, which provides the participants with a daily structure and motivation to go out. For some participants, going to a specific shop is something they have done for many years. Some participants refer to a particular grocery store as 'their' shop, highlighting the importance of a familiar institution. Shopping also has a social function and supports spontaneous interactions with familiar and unfamiliar people. Helena, for instance, said that she enjoys going to the grocery store, not for the products necessarily, but for social interaction with the staff and the spontaneous nature of meeting people there. Vera described a similar positive interaction with the staff from the nearby glasses shop: *They are very nice people. I told them that they will not see me walking by because I am going on vacation. [...] The staff said that they liked that I told them that I will be away. Then when we came back on Saturday, at the door waving. Well that is wonderful.*

Vera is not only a customer at the glasses shop, she has built a social connection with the people who work there. They have the habit of greeting one another when she walks past the shop on her regular walk. This connection has resulted in a social encounter in her routine and a sense of security that people are looking out for her. The staff waving at her is a gesture that reaffirms her sense of belonging and a warm welcome home.

Institutional settings, including community centres, care homes or shops, can provide valuable, predictable, social interactions for people with memory problems and dementia. The staff, in particular, provide spontaneous and warm interactions that provide a sense of belonging.

4. Discussion

Using an asset-based approach, we used a deductive content analysis to identify physical, social and institutional assets that contribute to the well-being of people living with memory problems and dementia living in a community context in the Netherlands. The study identified two categories of different types of assets to support well-being: assets to navigate public space and assets to support social inclusion and encounters. We observed that it was not one isolated type of asset (e.g., social asset) that contributed to well-being, but more a combination of different assets. Moreover, we found that participants used assets to gain a sense of relief, confidence and supported their sense of belonging and inclusion. These findings contribute to research promoting the social health and well-being of people living with dementia by exploring how individuals use assets to manage, adapt and cope with the consequences of dementia (Clarke et al., 2020; Dröes et al., 2017; Hoel et al., 2021; Vernooij-Dassen and Jeon, 2016).

Our findings provide insight into the role social and built environment features play in supporting the well-being of people with memory problems and dementia living in the Netherlands, a noted gap in the literature (Gan et al., 2021; Sturge et al., 2021c). In comparison to other community-level dementia research in other countries, the Dutch context of this study is distinct. In the Netherlands, it is relevant to consider the Dutch bicycling culture and infrastructure planning and how this context can relate to familiarity especially for people with dementia. For instance, in contrast to Ward et al. (2021: pp 14), who found that losing the ability to drive "led to reorienting to a different relationship with the neighborhood", participants in our study are less likely to experience interruptions in their familiarities where they are accustomed, and can continue to bike and walk to nearby destinations. People who rely on biking and walking as a mode of transportation are likely more familiar with their surroundings, and therefore more likely to mobilize physical, social and institutional assets to offset challenges associated with memory problems. Other dementia studies have linked familiarity with participation in community activities, the use of distinct physical assets for wayfinding, and accessing institutional assets, such as shops, when they are familiar (Blackman et al., 2007; Chaudhury et al.,

2020; Margot-Cattin et al., 2021; Mitchell and Burton, 2006; Seetharaman and Chaudhury, 2020; Shannon et al., 2019; Ward et al., 2021). However, as demonstrated in our findings and other studies, even in familiar environments individuals may rely on a combination of physical and social assets to avoid from risky situations within public spaces, which illustrates the importance of intersections between assets once more (Olsson et al., 2013; Sandberg et al., 2017). In this study, practicing a biking route with a friend protects participants from getting lost and ensures safer, predictable interactions within public space which contributes to well-being.

The findings of this study are similar to other dementia studies, which demonstrate the value of certain places that provide opportunities for spontaneous social encounters with both familiar and unfamiliar people in influencing well-being (Clark et al., 2020; Duggan et al., 2008; Lloyd and Stirling, 2015; E. Odzakovic et al., 2018; Öhman et al., 2008; R. Ward et al., 2018). Shops are an institutional asset that contribute to a sense of well-being in this study. Similarly, shops have been identified in other studies as a space for social connection opportunities for people with dementia (Blackman et al., 2007; Clark et al., 2020; de Witt et al., 2010; Mitchell and Burton, 2006; R. Ward et al., 2018). We found that our participants welcomed encounters with familiar or unfamiliar people, which can happen during a walk, at a shop, or a bench. Positive interactions with strangers have been noted to support well-being in other dementia studies (Brittain et al., 2010; Clark et al., 2020; R. Ward et al., 2018). Our study illustrates how benches are a physical asset that provides a place for people to build a sense of cohesion and connection through chance encounters with different generations and cultures. Although benches in public space have been identified in other dementia studies as a place for older adults to rest and have social interaction with others, including fellow pensioners (Biglieri, 2018; Odzakovic et al., 2019; Ottoni et al., 2016; Ward et al., 2021), our study highlights the social potential of benches, which underlines that benches have more than just a physical function. In a similar context to our study, Huizinga and van Hoven (2018) explored the geographies of encounters among Syrian refugees living in the Northern Netherlands. The authors identified similar spatial structures, such as parks and grocery stores, as places providing social inclusion and a sense of belonging for Syrian men. Places that provide positive intercultural interactions, especially when repeated over time, have been found in other studies to provide a sense of inclusion and belonging (Radford, 2017; Wessendorf, 2013).

A unique institutional asset that supports wellbeing as identified in this study are care homes for non-residents. Unique to the Dutch context, care homes operate and offer services to the broader community, not only the residents. These institutional assets provide services such as meals, social activities and adult day services which allow the facility to integrate into the community as a support hub for both the residents of the facility and those living at home in the broader community (Glass, 2014). Other institutions and countries should consider opening their services beyond residents to better support the social needs of people with memory problems and dementia who live at home. Further, our study also suggests that it is not only humans who provide meaningful encounters. Repeated encounters with animals, such as ducks and cats, in public spaces provide meaningful interactions. These findings are supported by previous work suggesting that interactions with animals can provide a therapeutic encounter with place (Gorman, 2017).

Overall, our findings suggest that social interactions do not have to be formal to be meaningful or inclusive; chance encounters with strangers from a variety of ages and ethnicities, plus animals, can also provide a sense of belonging, inclusion and wellbeing for people with memory problems and dementia. Future research should explore the socio-spatial practices of people with varying abilities, ages and cultures to identify common public space assets that support frequent, positive encounters and therefore social inclusion.

4.1. Policy and planning implications

This study provides insight into a variety of assets that can support varying dynamics and encounters of people with memory problems and dementia. An asset-based approach highlights how assets can enhance an individual's abilities which can contribute and enhance person-centered care planning (Wolverson et al., 2016). For example, identifying the assets that people use on a day-to-day basis can further inform the development of decision-making tools and care plans based on choices people make to live well on a daily basis. An asset-approach can also inform the development of inclusive, dementia-friendly services and communities (Hung et al., 2020). Developing programs, policy and public space based on the perspective of a person with memory problems and dementia is a best practice to ensure dementia-friendly communities are accessible (Courtney-Pratt et al., 2018; Han et al., 2016; Wiersma and Denton, 2016). Focusing on the strengths and abilities of people with memory problems can be the basis to creating a dementia-informed public space that moves away from the term "dementia-friendly", which others have criticized as emphasizing an individual's deficits (Rahman and Swaffer, 2018). A dementia-informed understanding of how assets encourage mobility, social interaction and well-being of people with memory problems and dementia can guide planners, public health practitioners and architects to create more accessible social and built environments.

Design principles, such as familiarity and legibility, were first recommended to make outdoor environments dementia-friendly (Mitchell et al., 2003). However, there remains minimal research on making public spaces more accessible for people with cognitive disabilities in general (Brorsson et al., 2011). An asset-based approach is a valuable framework to provide insight into the resources/assets people actually use to support psychological, social or physical challenges. We suggest further research, planning and evaluation to inform the placement, construction and design of interventions that can address cognitive challenges and shape encounters for all people, including people with dementia, resulting in more socially cohesive communities for all citizens in public spaces (Biglieri, 2018; Daly, 2020; Gan et al., 2021).

4.2. Strengths and limitations

The approach of this study was to use an asset-based approach to provide insight into how assets can enhance and sustain well-being. The data were not collected specifically to identify assets. However, the walking interviews and in-depth interviews provided unique insight into the physical, social and institutional assets in public spaces that support the wellbeing of people living with memory problems and dementia at home. Although both positive and negative experiences can be considered assets (Harrison et al., 2019), we have taken the opportunity to focus on what people with memory problems and dementia *can do* where arguably, the limitations and barriers experienced by people with dementia have been well-documented (Lin and Lewis, 2015). This paper is based on a mixed sample, which is a strength, as it may enhance transferability of the findings to people with memory problems and dementia in other contexts. On the other hand, the diversity of the sample, especially the variation in memory problems experiences, could also be seen as a limitation. Memory problems and dementia in this study were self-reported, and the authors did not assess the severity of the memory problems. Although the experiences of older adults with memory problems can differ from those with a dementia diagnosis, the risk of developing dementia is double in those with subjective memory complaints compared to those without (Mitchell et al., 2014). Therefore, dementia strategies, such as the National Dementia Strategy for England (Department of Health, 2009), tend to identify people with memory problems as a priority group, where only a third of people with dementia receive a diagnosis due to the absence of routine screening. To inform dementia strategies, further investigation is needed to explore how individuals with different levels of cognitive impairment use assets to

overcome negative experiences in public spaces and evaluate if they have access to the proper assets to support their well-being. It is also noted that the authors did make interpretations and assumptions based on quotes that certain assets appeared to contribute to wellbeing by off-setting challenges related to memory problems.

Although the general findings of the research have been shared with the participants, ideally, the results and interpretation related to well-being would have been verified by the research participants. Interactively verifying the results was not possible due to COVID-19 lockdown restrictions. Future research could use a mixed-method approach to explore the individual assets (e.g., a sense of connectedness, trust, reciprocity) that support well-being and explore barriers to mobilizing physical assets, which are a noted gap in the asset-based approach for health research (Cassetti et al., 2020; Van Bortel et al., 2019). In addition, community-based participatory methods would be beneficial to explore the strengths and assets of people with dementia to challenge stigma, address health disparities, and develop partnerships to improve public health policy (Cacari-Stone et al., 2014; Minkler et al., 2003; Page-Reeves, 2019; Wallerstein, 2020). Such methods or community workshops, based on an asset-based approach, could also identify the assets of other ethnicities and cultures and in other geographical settings.

5. Conclusion

More people are living with dementia and reside at home. As a result, there is a need for the design of public space, neighborhoods and communities to be informed by the experiences of people with memory problems and dementia. Dementia advocates have identified an asset-based approach as a valuable framework to develop communities which are sustainable, accessible and inclusive for all (Rahman and Swaffer, 2018). Although the ABCD framework was not used to collect the data, this exploratory study based on an asset framework has provided an inclusive, broad understanding of the dynamic nature of assets. A strength-based approach to focus on what people with memory problems and dementia *can do*, and how they use assets to off-set consequences of memory problems, provides new insight into the well-being of people with memory problems and dementia in a community context. Further, our study provides a perspective to inform the development of supportive, accessible environments that enable people with dementia to live longer in their homes and engage with families, friends, neighbors and overall society. Dementia-informed public spaces with accessible physical, social and institutional assets can provide valuable opportunities for continued societal participation and generate social inclusion for all citizens.

Declaration of competing interest

None declared.

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