

# Urban Living Environment and Mental Health of Older People: A Photovoice Study

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## Research article

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# Abstract

## Background

Living environment has long been considered an important determinant of health. The aim of this study was to explore older people's experiences with their living environment, their definition of, and their view on its possible impact on mental health and well-being.

## Methods

This qualitative study was conducted in Amsterdam among 20 participants, 11 males and 9 females aged 55 to 70 years. We used photovoice as a visual tool to explore older persons' unique experiences with, and perceptions of their living environment.

## Results

Our findings show that social environment plays an important role in defining and shaping the living environment of older people. Older people's living environment is a place where they feel safe and comfortable, have social contact with others, and stay active and involved.

## Conclusion

Photovoice was an effective method for documenting visual representation of salient aspects of older people's living environment and capturing their experiences.

## Background

More than a century of research has documented a relationship between urban environment and mental health (1–5). Older people living in disadvantaged neighborhoods with poor infrastructure and few support services have more difficulties in building and sustaining supportive social relationships, and have increased susceptibility to mental illness compared to people who live in wealthier neighborhoods (6–8). For example, adequate public transportation and age-friendly urban design help to strengthen community life and contribute to people's physical functioning, mental health and well-being (9, 10). Moreover, comfort in the living environment helps to foster autonomy and a psychological sense of control for older persons, as well as contribute to their mental health (11, 12).

Scholars highlight the importance of both social and physical environments for older persons. There is evidence that social environment, as indicated by social capital, is related to physical and mental health of the older adults, including overall well-being, happiness and self-rated health (13–15). A high exposure to built and natural environment in communities was associated with fewer mental disorders among older people (16, 17). However more research needs to be performed to examine the effect that environment has on mental health among older adults (13, 15).

Living environment has also been considered one of the key determinants of population health in general, both physical and mental (18–20). It also affects quality of life and longevity (21, 22). However, there continues to be a lack of studies that address older people's definitions of, experiences and relationship with their living environment, and the possible influence of different aspects of them on mental health and well-being.

Our aim was to investigate the lived experiences and perceptions of older adults regarding their living environment. Our approach was phenomenological, focusing on the essence of the experiences of people in their living environment, the stories and meanings they attach to them (23, 24). We refrained from explicitly defining what a 'living environment' should be, only referring to it as the place where older people live and spend time, and containing its physical and social characteristics. Our interest was in those aspects that older adults believe to be of influence on their mental health and well-being.

Research on the experience of older people regarding their living environment might benefit from using visual data. Photos can provide additional information to participant observation or interviewing (25, 26). Therefore, we applied photovoice methodology, which is a visual method that refers to photographs taken by the participants and their reflections upon them, to explore older people's experiences with their environment and as a means of eliciting phenomenological meaning, i.e. meaning of their lived experience (9, 27, 28).

Despite a few exceptions, there is currently only a small amount of photovoice studies addressing older people's experiences with their living environment and its impact on their mental health. These studies explored places that were important for ageing-in-place, perceptions of cities and age-friendly communities, physical and social aspects of neighborhoods that can facilitate or hinder physical activity or community perceptions of built and social environment (9, 25, 29, 30). Participants contributed to this study by taking photographs of aspects of their living environment that were important to them and that impact their well-being. In subsequent interviews about their photos and experiences we delved into the meaning that older persons attach to their living environment, and in particular to the social aspects of it.

## Methods

We performed a qualitative study among a purposive sample of participants from an ongoing prospective cohort study, the Longitudinal Ageing Study Amsterdam (LASA). We selected participants residing in neighborhoods with different socioeconomic status. We invited men and women, striving for a balanced gender distribution. We selected participants with and without evidence of mental health or social problems, such as possessing high loneliness and high depression symptom scores. Participants with visual or motor impairments were excluded from the study, as these could interfere with taking photos.

A first selection of N = 40 LASA participants was made on the basis of these principles, of which N = 36 were invited to participate in the current study (four participants had already participated in other ancillary LASA studies and were not contacted for this study so as not to overburden them). Of these, N = 12

agreed to participate. A second selection of participants was made on the basis of the guiding principles (N = 37), of which N = 23 were invited to participate. A final selection was made, consisting of N = 15, of which N = 7 were approached and N = 4 agreed to participate. The reasons for not participating in the current study were: having no time, not willing to participate, having health problems or going on holidays. Some of the participants (four participants) could not be contacted during the period of the study.

In total N = 20 participants took part in the study (11 males and nine females) ranging in age from 55 to 70 years. We selected this relatively young group of older participants because these could be expected to be relatively engaged and active, moreover a part of the study was taking photos and this was easier for younger older adults (also based on the results our pilot interviews). The study took place between November 2017 and April 2018. Five participants were from low socioeconomic neighborhoods and the other 15 from high socioeconomic neighborhoods. For NSES we have used status scores calculated by the Social Cultural Bureau. Every status score corresponds to the status of the neighborhood (low; middle; and high correspondingly). The number of years having resided in the particular neighborhood ranged from 1 year to 45 years (Insert Table 1).

## Photovoice

Photovoice is a qualitative visual research method in which photographs taken by the participants are used to explore and address their lived experiences (9, 27, 28, 31). Photovoice engages participants to take photographs as a method of documentation and communication of a phenomenon, to offer new insights and convey the 'feel' of specific events or locations, which is often lost with research methods relying on oral or written data only (32).

Potential participants were invited to take part in the study by invitation letter and then contacted by phone. If they were interested in participating, they received a participant package by post including an invitation letter, instructions for taking photos, informed consent forms and a photo logbook. Digital cameras with instructions for camera use were provided to those participants who needed a camera, while others used their own mobile phones or tablets to take pictures. The participants were asked to fill in a photo logbook. They were asked to answer the following questions: What is on the photo? What does the photo mean to you? Why did you take it? Also they were asked to give titles to their photos (see example Fig. 1).

All the participants were instructed how to use their personal devices for taking photos for the study. All the photos were kept and saved in a separate folder on the device. After that they were copied to the laptop of the researcher and later transferred to a secure server and deleted from the individual laptop. No other personally identifiable data was stored together with the data. All participants gave written informed consent.

General information on how to take photos was provided in the invitation letter. Instructions were provided without specifying what type of photos participants should take; only emphasizing that they

should capture their living environment. This gave more freedom to the participants who, as photographers of their living environment, became co-researchers, and later during the discussion of the photos this allowed us to explore what they considered to be their living environment, what made them feel good about it and what not, and what aspects were important for them. Participants were asked to take a maximum of 20 photos in ten days. Consent was obtained from all individuals depicted in the photos used in this paper.

## **In-depth interviews**

We considered in-depth interviews to be the best additional mode of data collection, for eliciting views, perceptions, and experiences. The individual nature of in-depth interviews and the way informants are free to express themselves takes into account the sensitivity of discussing components of their social environment and mental health (33).

In-depth semi-structured interviews began with a discussion of the photographs taken by the participant, which were shown to the researcher. Participants were invited to reflect on the meaning of the photos and were asked why these particular photos were taken to define their living environment. Because we were interested in a broad range of experiences and did not want to impose limitations on the experiences that participants would relate, we asked participants about what aspects of the living environment made them feel 'good' or 'bad' or were important to them. Lastly, other topics were raised while referring to their photos. These topics were: social cohesion, safety and trust, social contacts and networks, social support, social participation, stressful situations, and evaluation of life, ageing and mental health. We developed the topics and questions of the interview guide (please see Additional file 1) based on existing literature on different aspects of physical and social environments, perceptions on and experiences with living environment, and relations between mental health, well-being and the living environment of older people (1, 3, 34–36). The interview guide was pilot-tested with five participants. Subsequently, some of the questions were modified and adjusted. The interviews lasted from one and a half to two and a half hours.

Prior to the interview, informed consent was obtained and permission for recording was given by all interviewees. All the interviews took place at home of the participants. There was no one else present during the interviews besides the participants and researcher. The field notes were taken directly after the interviews. Participants also gave permission for using their photos in the analysis. Participants received a small present as a token of gratitude for their participation in the study.

## **Analysis**

We adopted an interpretative phenomenological approach. Photographs, logbooks, field notes and verbatim transcripts of the interviews were comprehensively and systematically analyzed using the qualitative data analysis software Atlas.ti 7. This software enables researchers to content code and retrieve not just textual data but also elements of visual data, such as those provided by the photos. Transcripts of the interviews were returned to the participants for comments and corrections. There were two coders.

First, photos were sorted and organized. Photos' visual content was analyzed based upon the visual images captured on the photos (eg people, outdoors and indoors, pets, volunteering) to generate broad categories. The categories also included material from the logbooks such as titles and descriptions. The categories were grouped and larger themes emerged. Second, interview data were coded. Again, categories were generated, and clustered into larger themes. We used inductive and primarily "open" coding that enables emergence of understanding from the close study and constant comparison of the data. After coding of all data, a list of codes was developed. The relations between these codes were studied and after these codes were grouped into categories (sub-themes) from which main themes were derived that served as the basis for analyzing and discussing the views of the participants. It is also important to note that themes emerged after the analysis of interviews and photos differed, the main themes were shared but there were also distinct themes in the photos that were not present in the interviews (see more in the Results).

## Results

### Photographs

A total of 227 photos were analyzed. The titles of the photos used in this section are the ones given by the respondents.

The analysis of the photos resulted in the following themes: social contacts, living environment, pets, social participation, green spaces, important landmarks in the environment, facilities and services, and stressors.

The theme "social contacts" includes photos of family and friends, ex-colleagues and neighbors, shared moments and activities (eg holidays, celebrations, visiting museums or exhibitions). Most photos pictured family and friends, emphasizing their crucial role in participants' living environment. Some photos, titles and logbook comments illustrated close relationship with neighbors, trust of and reliance on them

Photos of the house, spaces around the house, streets, neighborhood (including shops, pharmacy, bakery, GP practice), multiple environments and the city represented the "living environment" of the participants (Fig. 2–8). The photos highlight differences between participants in the geographical scale of the living environment. For some it was their house, for others their street or the entire city.

"Pets" were a separate and important theme. Respondents photographed their cats and dogs and showed that they have a special place in their life and living environment (Fig. 9). They were photographed inside and outside of the house, in the garden, walking on the street or park.

"Social participation" included photos depicting volunteer activities, informal caregiving, participation in clubs, and being involved in cultural activities (Fig. 10–12). Since many photos depicted works of art, music and festivals, indicating cultural activities play a special role in the living environment.

Photos of parks, gardens and playgrounds were part of the “green spaces” theme (Fig. 13). Logbooks provided additional information on the potential importance of the green spaces for our participants. They were considered as facilitating relaxation and good mood, providing routes for walking with pets and cycling, meeting neighbors and at the same time being a refuge from noise and source of beauty.

“Important landmarks” in the environment were covered by the photos of bridges, monuments, and other buildings and sites (eg library, municipality) (Fig. 14). They had significance for the respondents as they were also related to emotional experiences, historical or cultural importance and aesthetics of the living environment.

“Facilities and services” included public transportation, community centers, sport and cultural centers (Fig. 15). The titles of these photos showed that their importance for comfortable living and freedom, and showed a connection with the family or with other people. Moreover they also seemed to have a positive impact on physical health and quality of life.

The “stressors” theme included photos of waste on the street, evidence of vandalism and business on the street that created a lot of noise according to our respondents (Fig. 16, 17). The participants mentioned in their logbooks that these issues caused them stress and made them feel nervous.

## Interviews

All the names of the participants used in this section are pseudonymous.

## Definitions of living environment

Living environment was often defined by participants as the physical environment, although social aspects were also mentioned. For example, living environment was often perceived as a house or area around the house, street, neighborhood, but at the same time family, friends, people whom you meet on the street, neighbors, pets and social activities were mentioned as essential parts of the living environment. These different definitions of participants’ living environment were explored during the interviews.

Some participants defined their living environment as their house and immediate space around the house, such as the garden. One of the participants mentioned the staircase that reflected for him the importance of independence and staying mobile to be able to enjoy the living environment. *“As long as I am able to climb those stairs, I feel independent and independence is important for me...as it also helps to enjoy my environment fully”*(Mr D, 68 years).

For other participants the living environment was their neighborhood, with shops, the pharmacy, their general practitioner’s practice, and cafes. Some saw it as the whole of Amsterdam.

*“...that is Amsterdam. I am really attached to Amsterdam. It’s my living environment. I cannot imagine living somewhere else...My family and my friends live here...” (Mr F, 67 years).*

Others had multiple living environments, describing that they live half of the time in Amsterdam and the other half in another city or country where they have another house. One of the participants pointed out that *“your living environment is the place where you live and it is important how it is organized, what facilities are available, how you behave with your neighbors and how you feel about it, but especially family and friends are important”* (Mrs E, 62 years).

Multiple participants mentioned pets as an important part of their living environment. Several participants also took photographs of their pets to show that they consider pets as an inseparable part of their environment and family. Pets create a nice and pleasant atmosphere and “give the feeling of good and vibrant environment”.

## **Mental health and living environment**

All participants believed that different social and physical aspects of the living environment influence their mental health and well-being. These aspects included: social contacts and networks, feeling safe, social participation, stressful situations in the environment, and social cohesion. Social contacts and networks, safety and social participation were considered by our participants as the most crucial. Physical activity, accessibility of facilities and services, convenient public transportation, green spaces, loneliness and social isolation were also mentioned during the interviews, but less often. Notions such as social isolation and loneliness, meaning of life, feeling of involvement and engagement in the community, stress, irritation and negative emotions were more often mentioned by the participants than “mental health” and “well-being” as such.

## **Social contacts and networks**

Among social contacts and networks mentioned by our participants were family, friends, neighbors, former colleagues, groups of interest, alumni and sport groups.

*“The more social contacts you have, the more involved you feel. It influences your health and well-being” (Mr B, 67 years).*

Despite the fact that family members did not always live close by, participants mentioned that family and friends formed their living environment, gathering together and sharing important moments in their lives. One of the participants said: *“My son and his partner, my daughter and her partner... my family is very important and friends are also very important. It is the core”* (Mr J, 65 years).

Neighbors were generally considered to be less important than family. Nevertheless, most participants mentioned that they have good and close contacts with the neighbors, they help and trust each another. One of the participants used a Dutch proverb to describe the importance of good neighbors. *“Better a*

*good neighbor, than a distant friend; I think it is really true"* (Mr L, 70 years). However, other participants pointed out that their contacts with the neighbors were more superficial.

Diversity in their networks appeared to be beneficial. *"My social networks consist of men and women, people from different countries and of different ages. Very diverse. I think they make my life better, more meaningful"* (Mrs H, 65 years).

## Feeling safe

Most of the participants consider their living environments as pleasant and safe. Feeling protected allows participants to enjoy their environment and, has a direct impact on their quality of life and well-being. Feeling safe was a recurring theme in the stories of the respondents. *"I feel very safe here. I can walk everywhere. Also as a single woman I felt always safe in this neighborhood...and of course it has influence on my quality of life and well-being"* (Mrs A, 65 years).

Some participants felt unsafe in their living environment, due to past events or negative experiences with burglary and robbery, or street violence. Needless to say, they had a bearing on the well-being of participants. A few participants mentioned the existence of so called "neighborhood directors" who are protecting the neighborhood, observing people's behavior and trying to keep the neighborhood clean and safe. Participants also mentioned "neighborhood surveillance apps", used for looking after each other's house or pets. These measures helped them to feel safer and feel support from the neighbors.

Sometimes, the combination of various aspects of the environment was perceived as crucial. For example, the combination of social contacts and safety in the living environment, influenced participants' well-being. *"It is important that you have social contacts in your environment. Also that there are good and accessible facilities and places, where I can easily go to and talk to people...and where I feel safe and comfortable"* (Mr T, 64 years).

## Social participation

Social participation included a broad range of activities. These were related to informal caregiving, volunteering, and participating in various organizations, clubs and activities for older persons. Firstly, many participants offer informal care to their family members, friends or neighbors. Participants helped with various household chores such as grocery shopping, finances, cooking, and cleaning. Caregiving activities were thought to influence well-being.

Participants also work as volunteers at community centers, residents' committees, parks, as the board members of organizations, and helping other older persons with administration. Helping people in their community give participants the feeling of being a part of their community, being engaged in the neighborhood, and these communities often defined the social fabric of their living environment. It also made their lives more meaningful, and made them to feel involved, active and busy: *"to be active, have interests, keep your mind and body busy and keep contacts with people in the neighborhood"* (Mrs A, 70 years). Participants talked about their volunteering experiences with enthusiasm: *"At the moment I am*

*one of the volunteers at the community center, I am cooking there once per month. It helps to feel connected with the community and environment”, and “I am volunteering in the park, helping in the rosary which is a part of my living environment”.*

Almost all participants were members of specific organizations, often in their living environments. Being a member was associated with staying active and involved, and thus also had an influence on their well-being.

## **Stressful situations in the living environment**

Situations in the living environments such as excessive noise, bustle/rush (many people around, a lot of traffic and careless cyclists), waste on the street, and quarrels or problems with neighbors were mentioned as stressful. For some participants, neighbors were causing constant stress and irritation by being noisy or unwilling to compromise or to discuss problems. *“I have very nasty neighbors. They are the biggest source of misery and stress for me, they are not able to communicate in a proper way”* (Mrs G, 69 years). Household waste, garbage and junk on the streets were also regarded as causing discomfort and unpleasant feelings.

## **Social cohesion**

Social cohesion includes themes as: trusting people and specifically neighbors; help and support from neighbors; and sharing norms and values with neighbors. Trusting neighbors was reflected in behaviors like leaving the neighbors the key while being away, collecting the post or watering their plants. For the participants it was essential to be able to trust others, especially people living in the same neighborhood. One of the participants pointed out: *“I would like to have people in my environment whom I trust and who trust me”* (Mrs L, 65 years).

In terms of informal social, mostly emotional, support, participants mentioned the support of family, friends and neighbors. One of the participants stated: *“I receive support from my husband. Really incredible. He is great. And of course I have support from the cleaning lady. And I have support from my children and neighbors”* (Mrs L, 69 years). Participants stated that they share personal things, problems, norms and values with their neighbors. One of them noted: *“Yes, sure, we do share norms and values with neighbors, it goes much deeper than just a simple contact”* (Mr L, 70 years). Others mentioned that they do not share personal issues or discuss problems with their neighbors. They had other people for sharing their personal experiences, norms and values.

Comparing the analysis of the photos and the interviews, it appeared that several themes are prominent in both, for instance the themes of social contacts and networks, social participation, living environment and pets, and stressors in the environment. Some themes in the photos and the interviews do not match. Photos of green spaces (eg parks, gardens) and cultural activities suggest that these are important for the respondents. Green spaces were presented as reflecting the aesthetics of the neighborhood, or places to relax. However, green spaces and cultural activities were not mentioned often during the interviews as aspects of the environment that could influence mental health.

## Discussion

In this photovoice study we explored older people's experiences with their living environment and their views on its impact on their mental health and well-being. Older people's individual perceptions of the living environment encompassed physical and social aspects. Our findings show that the social environment plays a crucial role in defining and shaping the living environment of older people. Often, social contacts transcended the geographical boundaries of people's neighborhoods. Aspects such as social contacts and networks, feeling safe, and social participation were recurring themes in photos and interviews of participants. We introduce the following definition of living environment that is a synthesis of the experiences of our respondents and aspects of their environment they consider important; a place where older people feel safe and comfortable, where they have social contacts with others and where they stay active and involved. However older adults have also mentioned stressful situations in their environment that cannot be neglected while talking about their experiences of living environment.

Social contacts and networks were mentioned by our participants as an aspect of the living environment that is essential for mental health and well-being. Family members, friends and neighbors were considered to be crucial for health and well-being. Having social contacts gave participants the feeling of being needed, valuable and socially included. Having multiple different social contacts was also perceived as a protective factor against social isolation and loneliness. This is in line with what has been shown in empirical studies before. Many studies have demonstrated the important role of social contacts in social capital and the well-being of older adults and as resources for receiving support, providing a sense of security and counteracting loneliness (36–43).

Our participants identified aspects of their living environment that have been considered as components of social capital (14, 41, 43, 45–47). There is evidence to suggest that the importance of social capital, including social networks, social support, and social participation tends to increase with age as they become key mental health resources for older persons, in particular when their functional level decreases (48–50). It should be noted however, that most participants had few functional limitations, so that receiving support for daily activities to counterbalance such limitations is unlikely to be the main reason for why they valued these aspects so highly.

Social participation was perceived by the participants as a means for involvement in the local community and staying active and engaged and, consequently, for giving meaning. Social participation seemed to play a role in the mental health and well-being of older persons, which is in line with the findings from other studies (51–54). Social participation may contribute to health by helping to maintain social contacts, providing a sense of meaning in older persons' lives and a sense of belonging to a social group and context, as well as increasing access to social support (43, 51, 52, 55).

The participants considered safety as one of the aspects that could influence older persons' mental health and well-being. Similarly, other studies pointed out that neighborhoods and communities with high social capital may promote feelings of safety, security and active engagement. Studies also found associations between neighborhood safety and older adults' well-being (56–60).

The photovoice method used in the current study enabled us to gain understanding of how older persons experience their environment. It helped participants to visualize salient aspects of their living environment and illustrate their experiences. Similar to the study of Ronzi et al. (2016), photovoice brought to the surface older people's perceptions and knowledge about things that were important for them. As is also demonstrated by other studies (27, 61–70), our participants enjoyed taking photos and being a part of the process of data collection. They found photovoice interesting and inspiring and felt that their photos and experiences were important. Photos also served as an aid for memories and thoughts during interviews, which was an added benefit of combining photovoice data collection with in-depth interviews.

Overall, the analyses of the photos and the interviews confirmed each other. As it was also shown in previous photovoice studies (30, 71) photos provided additional information that did not come up during the interviews. From the photos, it seemed that green spaces were part of the aesthetics of the participants' living environment and played a supportive role for facilitating their social activities. In the photos, art and culture were regarded as an important element of the living environment. However, the participants did not mention green space or art as aspects of the living environment that influences mental health in the interviews. It might be that the supportive role of green spaces and art was overlooked when the participants focused more on the primary characteristics of social contacts and activities. Thus, the photos provided relevant data in addition to data from the interviews.

A strength of the study was the use of photovoice, combining analysis of photos with in-depth interviews (data triangulation). Several limitations should be considered when interpreting our results. We included mostly young-old adults who were relatively mobile and in good functional health. Future research should consider focusing on the experiences of vulnerable older persons. This may include experiences from those who feel socially isolated, or from older adults with special needs or mobility issues. This limitation has to do partly with the use of the photovoice method, which required recruiting participants who were able to take photos and operate the cameras. Another possible limitation of the study is the imbalance in NSES. We had more participants with high NSES. Obtaining informed consent forms from people who were in the photos appeared at times to be challenging, as the participants did not always request permission while taking the photos, and sometimes had to ask for consent retrospectively. This is a commonly encountered challenge in photovoice studies (Anonymous, 2019) and future studies may be advised to prioritize discussing the importance of consent with researchers and participants.

## Implications

We recommend taking into account older people's voices and experiences when planning or developing programs to improve neighborhoods and make cities more age-friendly. When designing policies or interventions, policy-makers should invest in exploring the lived experiences of older adult residents. On the one hand, this may help planners to prioritize interventions that impact aspects that older people believe to be important and that are central components of their living environment. On the other hand, this may help to legitimize such actions. Using specific methods to involve older people, such as asking

them to make photos and discuss their views, may be a good way to foster their participation and make their voice heard.

## **Conclusion**

In conclusion, our findings provide insight into how older persons experience their living environment. According to our respondents, the living environment of older persons is a place where older people feel safe and comfortable, have social contacts with others and where they stay active and involved. Our participants are convinced that this living environment plays a crucial role in fostering their mental health and well-being, as it helps them to feel needed, engaged and protected. It is important to highlight that the emphasis is often on the built and natural environment in public health literature, whereas social aspects of the environment are less often captured. However this focus can be salient in its possible effects on health.

## **Abbreviations**

Longitudinal Ageing Study Amsterdam (LASA)

Neighborhood Socioeconomic Status (NSES)

## **Declarations**

### **Ethics approval and consent to participate**

Ethical approval for the study was obtained from the Medical Ethical Research Committee NL41346.029.12. All participants gave written informed consent.

### **Consent for publication**

All participants gave informed consent for using their photos and publication. People who were captured on the photos gave additional consent for using their photos.

### **Availability of data and materials**

All the data used in this study is confidential.

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### **Competing interests**

The authors declare that they have no competing interests.

## Authors' contributions

YM analyzed the data and wrote the manuscript. GW revised the manuscript and provided advice and meaningful input. MH provided insightful input and revised the manuscript. All authors have read and approved the manuscript.

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## Table

Table 1.  
Demographics of the participants

General SES demographics		Neighborhood	
Gender		Neighborhood SES	
Male	11	Low	5 participants
Female	9	High	15 participants
		Years lived in neighborhood	
		Range	1–45 years
Age		Average	19 years
Age range	55–70		
55–59	2		
60–64	7		
65–70	11		
Marital status			
Single	3		
Married/Have a partner	15		
Separated/Divorced	1		
Widowed	1		
Education			
Elementary education (6 years)	1		
Secondary education (12 years)	6		
Lower vocational education (9 years)	1		
Higher vocational education (15 years)	3		
Higher education (college, university) (16–18 years)	8		

## Figures

Fotodagboek		Foto 1	Foto 2
Datum en tijdstip	11-1-'18	Datum en tijdstip	15-1-'18
Wat staat er op de foto?	keent roos	Wat staat er op de foto?	mezelf + desktop als werk vanuit werk hier, eet hier Luister, praat met vriend + vrienden
Wat betekent de foto voor u?	Roos - me (keent, vriendin - me)	Wat betekent de foto voor u?	zit hier - thuis - het meest.
Waarom heeft u deze foto genomen?	zit 'm 't meest sympolisch de natuur	Waarom heeft u deze foto genomen?	
Fotodagboek		Foto 3	Foto 4
Datum en tijdstip	11-1-'18	Datum en tijdstip	15-1-'18
Wat staat er op de foto?	tafel met van alles	Wat staat er op de foto?	mezelf + desktop + tafel
Wat betekent de foto voor u?	werk hier, eet hier Luister hier, praat met vriend + vrienden	Wat betekent de foto voor u?	werk, eet, Luister, praat (communicer) met vriend, vrienden etc.
Waarom heeft u deze foto genomen?	zit hier het meest met dit uitzicht	Waarom heeft u deze foto genomen?	zit hier 't meest

Figure 1

Example of photo logbook

Fotodagboek		Foto 1	Foto 2
Datum en tijdstip	11-1-'18	Datum en tijdstip	15-1-'18
Wat staat er op de foto?	keent roos	Wat staat er op de foto?	mezelf + desktop als werk vanuit werk hier, eet hier Luister, praat met vriend + vrienden
Wat betekent de foto voor u?	Roos - me (keent, vriendin - me)	Wat betekent de foto voor u?	zit hier - thuis - het meest.
Waarom heeft u deze foto genomen?	zit 'm 't meest sympolisch de natuur	Waarom heeft u deze foto genomen?	
Fotodagboek		Foto 3	Foto 4
Datum en tijdstip	11-1-'18	Datum en tijdstip	15-1-'18
Wat staat er op de foto?	tafel met van alles	Wat staat er op de foto?	mezelf + desktop + tafel
Wat betekent de foto voor u?	werk hier, eet hier Luister hier, praat met vriend + vrienden	Wat betekent de foto voor u?	werk, eet, Luister, praat (communicer) met vriend, vrienden etc.
Waarom heeft u deze foto genomen?	zit hier het meest met dit uitzicht	Waarom heeft u deze foto genomen?	zit hier 't meest

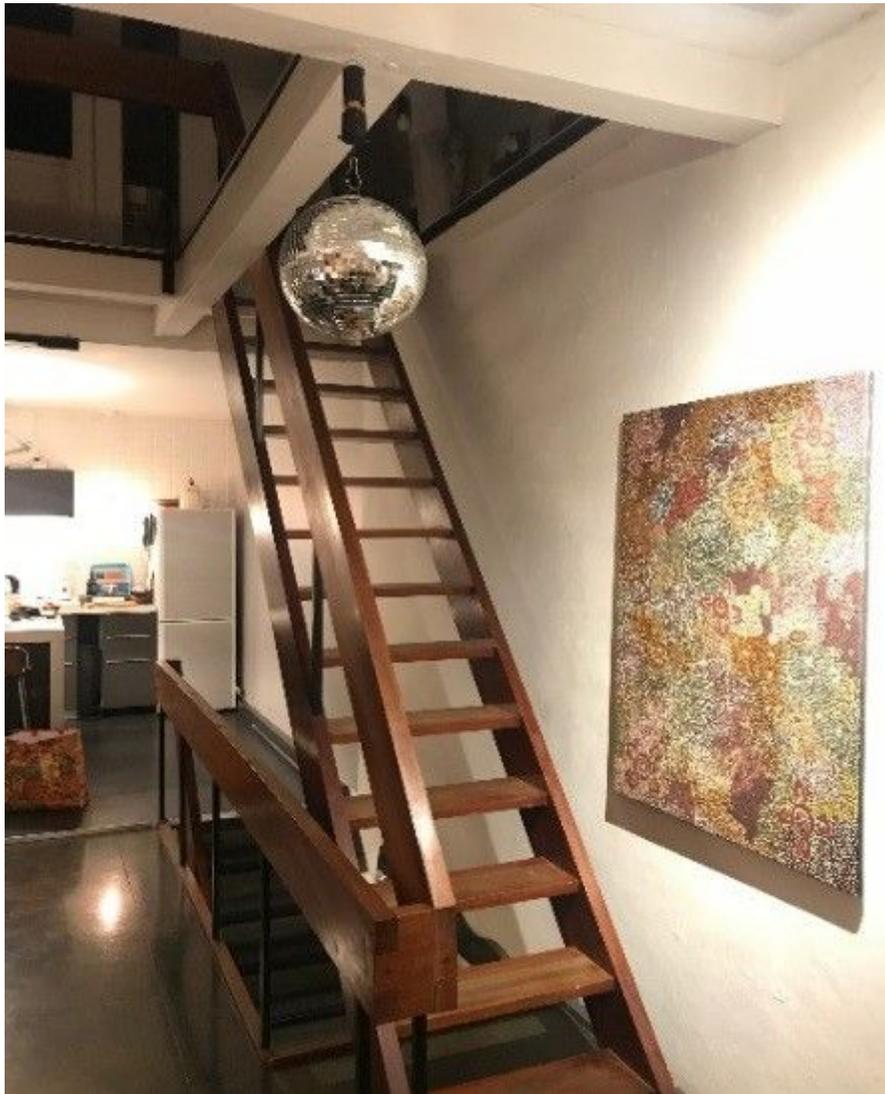
Figure 1

Example of photo logbook

Fotodagboek		Foto 1	Foto 2
Datum en tijdstip	11-1-'18	Datum en tijdstip	15-1-'18
Wat staat er op de foto?	keent roos	Wat staat er op de foto?	mezelf + desktop als werk nauw bij werk hier. eet hier luister, praat met vrouw + verleden
Wat betekent de foto voor u?	Ricoi - me (keent, vrouwe - me)	Wat betekent de foto voor u?	zit hier - thuis - het meest.
Waarom heeft u deze foto genomen?	zag 'm / 't meest sympolisch de natuur	Waarom heeft u deze foto genomen?	
		Foto 3	Foto 4
Datum en tijdstip	11-1-'18	Datum en tijdstip	16-1-'18
Wat staat er op de foto?	tafel met van alles	Wat staat er op de foto?	mezelf + desktop + tafel
Wat betekent de foto voor u?	werk hier, eet hier luister hier, praat met vrouw + verleden	Wat betekent de foto voor u?	werk, eet, luister, praat (communicer) met vrouw, verleden, etc.
Waarom heeft u deze foto genomen?	zit hier het meest met dit uitzicht	Waarom heeft u deze foto genomen?	zit hier 't meest

Figure 1

Example of photo logbook



**Figure 2**

My house and staircase



**Figure 2**

My house and staircase



**Figure 2**

My house and staircase



**Figure 3**

My current living environment



**Figure 3**

My current living environment



**Figure 3**

My current living environment



**Figure 4**

Our neighborhood



**Figure 4**

Our neighborhood



**Figure 4**

Our neighborhood



**Figure 5**

Pharmacy in the neighborhood café Poesiat and Kater



**Figure 5**

Pharmacy in the neighborhood café Poesiat and Kater



**Figure 5**

Pharmacy in the neighborhood café Poesiat and Kater



**Figure 6**

My living environment



**Figure 6**

My living environment



**Figure 6**

My living environment



Figure 7

City of Amsterdam



Figure 7

City of Amsterdam



Figure 7

City of Amsterdam



**Figure 8**

Different living environments



**Figure 8**

Different living environments



Figure 8

Different living environments



Figure 9

My cat



**Figure 9**

My cat



**Figure 9**

My cat



**Figure 10**

Volunteering at Vondelpark



**Figure 10**

Volunteering at Vondelpark



**Figure 10**

Volunteering at Vondelpark



**Figure 11**

Volunteering at the community center



**Figure 11**

Volunteering at the community center



**Figure 11**

Volunteering at the community center



Figure 12

Visiting Rijksmuseum



**Figure 12**

Visiting Rijksmuseum



**Figure 12**

Visiting Rijksmuseum



**Figure 13**

Park and walking



**Figure 13**

Park and walking



**Figure 13**

Park and walking



Figure 14

Monument-boat



Figure 14

Monument-boat



Figure 14

Monument-boat



**Figure 15**

Easy public transportation



**Figure 15**

Easy public transportation



**Figure 15**

Easy public transportation



Figure 16

Trash outside



Figure 16

Trash outside



Figure 16

Trash outside



Figure 17

Bustle in the neighborhood



Figure 17

Bustle in the neighborhood



**Figure 17**

Bustle in the neighborhood

## Supplementary Files

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