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Abstract

An ageing society brings with it increased health costs due to the prevalence of long term conditions increasing with age. It is therefore vital to support good health in older people, both to improve their quality of life and to reduce the financial implications of an ageing society. Isolation and loneliness can put people at risk of dying early, and increasing opportunities for social interaction and engagement could mitigate some of the health effects of ageing. However, this requires society to create the conditions that enable older people to participate fully. The World Health Organization's Age-Friendly Cities programme has identified factors that make urban areas Age-Friendly, but research shows that older rural dwellers have unique unmet needs preventing full engagement in their communities. This article describes a pilot project which adapted photo-elicitation to explore the age-friendliness of a rural area in Calderdale, Northern England. It shows that photo-elicitation is a successful method for identifying what older people think is important in making their community age-friendly and it reveals differences between ageing in a city and in a rural setting. This rich data can be used to inform the development of policy in rural areas which is more closely aligned to the needs, preferences and interests of the growing population of older residents. The project also demonstrates the engagement potential of this methodology. Participants continued as co-researchers, learning new skills and taking responsibility for a variety of dissemination activities such as photographic exhibitions, a public report and presentations. This suggests that adapted photo-elicitation is a useful tool for engaging older people in research.

Introduction

The global population is ageing. The UN estimates that the worldwide population of people over 65 will grow from 9% in 2019 to 12% in 2030 and by 2050 will have reached 16% (United Nations, 2019b). In the UK, the proportion of people over 60 is considerably higher, with estimates for 2020 reaching 24.4%, (United Nations, 2017) and projected to rise from 15.6 million to 23.3 million by 2050 (Office for National Statistics, 2017). This shift in population distribution has many implications. The UN identifies the impact of an increasingly ageing population to include issues for labour and financial markets, the demand for goods and services, family structures and intergenerational ties (United Nations, 2019a) and as long ago as 1982, recognised the need for specific action to support older people, producing the Vienna International Plan of Action on Ageing (UNDESA, 1982).

In the UK and other OECD countries, a larger proportion of older people in the population leads to a lower GDP growth, particularly in countries where the population growth is slower (Papapetrou & Tsalaporta, 2020). In the UK the cost of NHS healthcare increases with age due to the greater prevalence of long term health conditions (UK Parliament, 2015), with the average health spending for an 85 year old being five times greater than that for a 30 year old (Stoye, 2017). The 2019 Health Survey for England found that over the previous 12 months, 78% of females aged 16-24 and 87% of females over 75 had visited their General Practice doctors. For men, the difference was even more pronounced with 57% of males aged 16-24 and 85% of males over 75 visiting their doctor in the previous 12 months (NHS Digital, 2020). It is therefore important to find ways to support good health in older people to improve their quality of life and reduce health care costs.

Though it is difficult to show a causal link between health, wellbeing, social isolation and loneliness (Courtin & Knapp, 2017), studies suggest that social isolation and loneliness are associated with Coronary Heart Disease (CHD) and stroke (Valtorta et al., 2016), and an increased risk of early

mortality (Holt-Lunstad et al., 2015). A systematic review of loneliness and health care consumption showed that among the frail older population, lonely respondents reported a higher number of health complaints and used more outpatient services including more acute visits at the emergency department, compared to “not lonely” respondents (Taube et al., 2015).

Encouraging social interaction and engagement could be one way of improving the health of older people and reducing the health burden, however, in order for this to happen, communities need to make appropriate infrastructure provisions to enable participation. Following the 1991 adoption by the UN General Assembly of the United Nations Principles for Older Persons (United Nations, 1991), in 2002 the World Health Organization (WHO) produced a Framework for Active Ageing which led in 2005 to the WHO Global Age-Friendly Cities (AFC) project (World Health Organization, 2005). The project drew on research with older people in the US (World Health Organization, 2007), and set out 8 domains that are important in making cities age-friendly.

The AFC project explored these domains with older people in 35 cities around the world and developed checklists to allow cities to assess their age-friendliness in each area (World Health Organization, 2007) thus providing tools to support cities in becoming more age-friendly (World Health Organization, 2005). This is a tacit acknowledgement that the active involvement of older people in society is more than an individual choice but also depends on the way that society is organised. It was anticipated that cities, having the resources to make age-friendly changes, would model new ways of organising and lead the way for other communities within their countries to become age-friendly (World Health Organization, 2005).

Findings from rural research show that while some needs of older people are similar to those in cities, others are unique to rural areas (Lui et al., 2009) and their governance structures often have difficulty accessing resources (Lin & Huang, 2016; Winterton, 2016). Rural areas therefore need support to become age-friendly (Menec et al., 2015).

Surveys of a range of age-friendly domains with municipal officials and residents show that municipal officials over-estimated the age-friendliness of the communities, so it is important to involve older residents in research on the age-friendliness of rural areas (Menec et al., 2016). Other projects have successfully involved older people as co-researchers to investigate the age-friendliness of communities (Buffel, 2018). We therefore initiated the Age-Friendly Rural Areas project which aimed to capture the views of older people about the age-friendliness of their rural communities.

Engaging the public in research is often difficult. Creative methods have been used previously to enhance engagement with older people, for example, Photovoice has been used successfully in age-friendliness research (Novek & Menec, 2014; Ronzi et al., 2016). Photovoice is an action research methodology (Wang & Burris, 1997) involving participants taking photographs and working with facilitators to identify community priorities. However, this methodology requires a long term commitment to working with the community and has a focus on community empowerment leading to social change (Glaw et al., 2017). Photo-elicitation refers to the use of photographs in research interviews to generate discussion (Harper, 2002). Photographs can be provided by the researcher or taken by the participant. It uncovers attitudes and experiences, and elicits more information than a standard interview (Glaw, et al., 2017). The authors argue that by allowing participants to take the photographs, photo-elicitation also gives the participants “the freedom to choose what they want to talk about in the interview” (Glaw et al., 2017, p3). Rose (2016) goes further and suggests that this allows participants to become the expert in the interview. Photo-elicitation has been used in healthy lifestyle research, where it has been found to be an effective method for engaging a wide variety of participants in different settings (Joy et al., 2014).

The aim of this pilot project was to assess the feasibility and acceptability of using adapted photo-elicitation to encourage participation and involvement of rural-dwelling older people in research to improve its quality and relevance (INVOLVE, 2012) and to investigate what people over 60 thought made rural areas age-friendly. We mapped these findings to AFC domains and used the creative outputs in the dissemination of the research findings.

Methods

Ethics

Following use of The University of Manchester online ethics decision tool, this project was not deemed to require ethical approval as it was not asking upsetting, distressing or controversial questions of the public and no identifiable data were collected from participants. Participants were required to gain consent for photographs to be taken and used in the research project from any individuals photographed during the project. Participants also gave consent for their photographs to be used in the research project and dissemination activities.

Research setting and participants

The study was conducted in Calderdale, West Yorkshire, UK. Calderdale is classed as a urban local authority with major conurbations, but has a large proportion of rural dwellers (24.98%) (Office for National Statistics, 2011). The Upper Calder Valley (UCV) is located to the west of Halifax, which is the main urban area in Calderdale. UCV is exclusively rural, consisting of three small towns in the valley bottom and a large number of villages, hamlets and scattered individual dwellings (Calderdale Council, 2018). Residents over 65 years old made up 16% of the population of Calderdale in 2011 (Calderdale Council, 2018), but projected growth for 2016-2026 in Calderdale estimates a 7.7% increase in the 65-74 age group and a 47% increase in 75-84 age group compared to a 3.5% increase in all ages (Calderdale Council, 2018). UCV was chosen because of its proximity to the research team base, good public transport connections making it relatively easy for researchers and participants to reach the sessions, and because of existing links between a research team member and arts and community organisations in the area. Participants needed to be over 60 years old and resident in the UCV to be eligible to take part.

Recruitment

The project aimed to recruit a minimum of 10 and maximum of 15 people over 60 years old, to populate two participant groups of a manageable size. This was deemed to be an achievable target in the 6-month time frame of the project from recruitment to completion of initial dissemination.

Partnerships with community and voluntary sector organisations can be effective in recruiting people from hard to reach groups (Harrison et al., 2017). A scoping exercise was performed to find local groups and organisations that could assist with recruitment. Organisations were targeted if they were exclusively for older people, were likely to attract older people (such as historical societies) or had members who might be interested in the methods used (such as photographic groups and arts organisations). The organisations that agreed were invited to distribute a poster and leaflet about the project. The advertising material included the lead researcher's mobile number and email address and interested people were asked to contact the research team directly. The recruitment material was sent to organisations one month before the date of the first meeting.

Organisations can also act as gatekeepers and block researcher access to potential participants (Williams, 2020). Therefore, posters and leaflets were also displayed throughout the area at local shops, cafés and community venues to ensure that it was publicised as widely as possible.

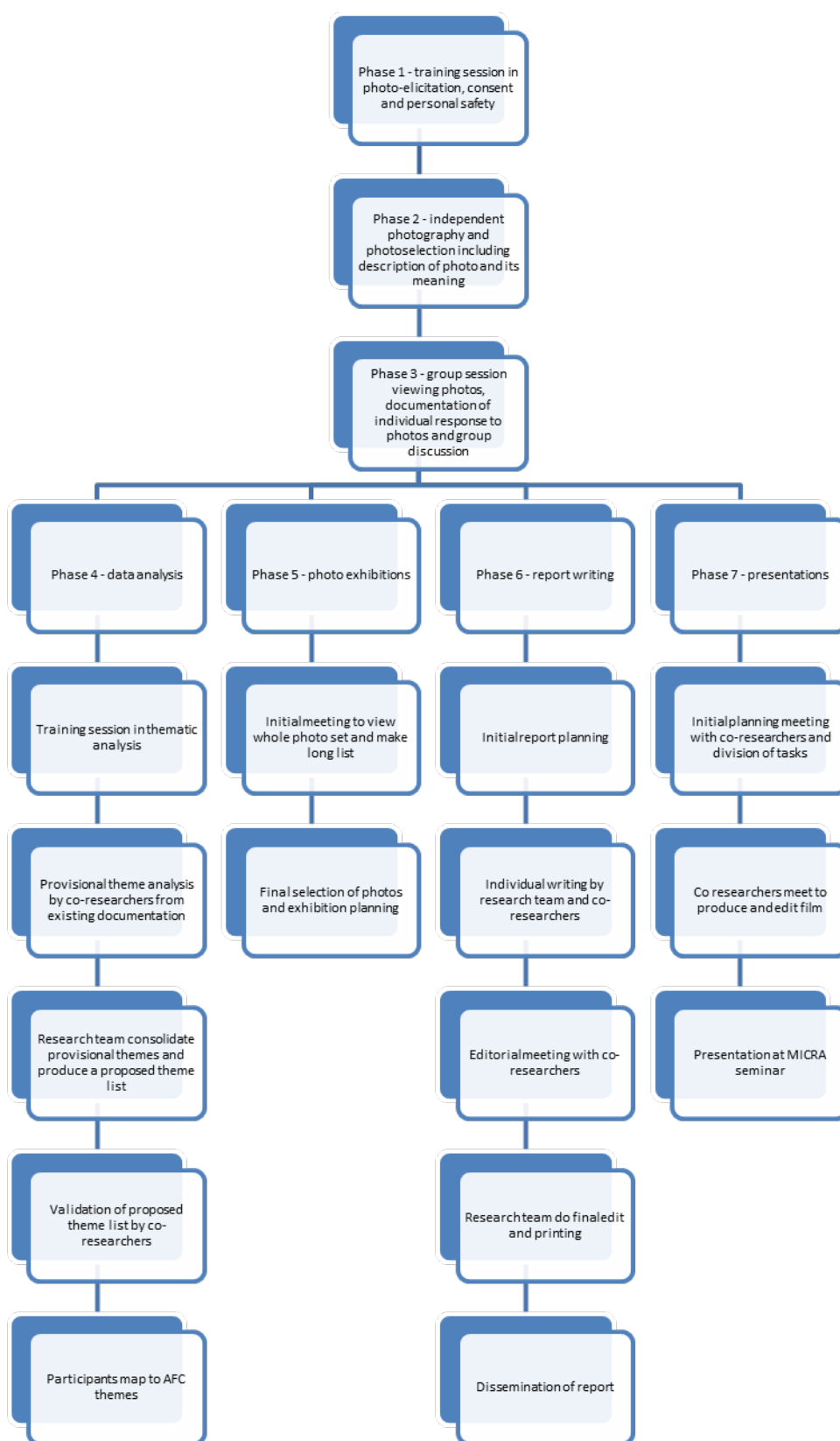
Seventeen organisations were identified to aid recruitment, 11 agreed to distribute information to their networks, one said no and five did not reply. Posters advertising the project were displayed in 24 shops, cafes and community venues across the UCV. Twenty-four enquiries resulted in 13 participants being recruited for the project. Six enquiries were received too late to participate, five received information about the project but either did not confirm that they intended to participate or did not attend the initial session. Three quarters of the participants were female with the majority of the participants being under 70 years old (Table 1) and the mode age group was 65-70. Over half the participants came from Mytholmroyd, which was the location of the local arts organisation who were a partner in the research project, and where one of the researchers was a resident. Some demographic information is missing for one participant.

Table 1: Participant characteristics for Age Friendly Rural Areas project

| | | N (%) |
|--------------------|------------------------|-----------------|
| Sex | Male | 3 (23.1) |
| | Female | 10 (76.9) |
| Total | | 13 (100) |
| Age (years) | 60-64 | 4 (30.8) |
| | 65-69 | 5 (38.4) |
| | 70-74 | 2 (15.4) |
| | 75-79 | 1 (7.7) |
| | Data missing | 1 (7.7) |
| | Total | 13 (100) |
| Where do you live? | Heptonstall | 2 (15.4) |
| | Hebden Bridge | 1 (7.7) |
| | Mytholmroyd | 7 (53.8) |
| | Midgley surroundings | 1 (7.7) |
| | Sowerby Bridge/Halifax | 1 (7.7) |
| | Data missing | 1 (7.7) |
| Total | | 13 (100) |

In order to maximise access for the participants, two participant groups were run in different locations and times and respondents were asked to select the most convenient group. Both groups followed the same process. Participants' travel expenses were paid. The study was conducted between February 2018 and July 2018. Figure 1 provides an overview of the different phases of the research. Appendix 1 shows how many participants were involved in the different phases.

150 *Figure 1: A flowchart representing project activity including participant co-researcher activity in Age-friendly Rural Areas*
 151 *project*



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154 **Photo-elicitation as a research tool**

In her book 'Visual Methodologies', Rose (2016) defines some strengths of photo-elicitation which have been exploited in this project. Accordingly, photographs uncover 'unknown unknowns' in the researcher's knowledge, raising new issues and novel opinions. This allows participants to introduce new ideas which may not have been anticipated. Rose says that photographs allow the articulation of every-day activities, giving participants an opportunity to observe their experiences from a distance. Participants are therefore able to reflect on their experience and to highlight routine activities important in determining age-friendliness. Harper (2002) argues that photo-elicitation generates different sorts of information, as it taps into areas of the brain that are "evolutionarily older than the parts that process visual information" (p13). This might encourage deeper reflection on the subject than a standard interview.

Photo-elicitation is normally conducted using interviews. However, in this project we adapted the methodology and used focus groups, which creates the opportunity for interaction between participants and can lead to them "generating their own questions and pursuing their own priorities" (Kitzinger, 2000, p21). We felt this was a valuable change to the methodology, encouraging the participants to explore the issues together and inform the researchers about our 'unknown unknowns' on ageing in a rural area.

This study used photographs generated by participants. Participants attended two sessions. The initial session was an information and training session during which participants were trained in photo-elicitation as a method for collecting data about age-friendliness in rural areas. Following an introduction to photo-elicitation methods and information about the project, participants generated ideas through discussion and brainstorming about what 'age-friendliness' might mean in the UCV. They then received information about consent and safety, and were given suggestions about how to approach a photo-elicitation exploration of age-friendliness. These suggestions were intended to give parameters to assist participants in recording their responses to the research question, and included: recording all their activities on a specific day; picking a theme or area to photograph in detail; comparing the activity of an older person with the activity of a different age group; and taking photographs as information for an older person new to the area.

Participants were free to choose other parameters for their photos. Participants were asked in advance if they had a smartphone or camera, as disposable cameras could be provided. After the session, participants had 7-10 days to take their photographs responding to the question "What makes the Upper Calder Valley age-friendly or not age-friendly?" Since digital photography allows people to take an unlimited number of photos, we made the pragmatic decision to ask participants to submit in advance of the next session 10 photographs accompanied by a description of their intended meaning. They were told they could use any criteria to select their submissions, for example, the photographs they liked best, those that best represented the theme, or the photographs that had the best composition. They sent their selected photos to the research team who produced a PowerPoint presentation for each participant group, which included all the submitted photos from that group.

At the second session, the photographs from each of the group participants were viewed in the pre-prepared PowerPoint presentation. Participants commented informally as they looked at the photos, identifying familiar locations and discussing the subject matter. Participants were asked to choose 15 photographs from the presentation. This number was chosen as it gave the opportunity for a wide range of additional comments but was not overly-burdensome for the participants. Using a form with thumbnail photos, they wrote down their own response to the photograph based on the following topic guide as prompts:

- 200 • What do you see in the photo?
- 201 • What is the meaning of the photo for you?
- 202 • What does it say about age-friendliness in this area?

203 The focus group structure, therefore, combined two photo-elicitation methodologies, allowing
 204 participants to discuss the meaning in their own photographs, and using photographs taken by
 205 someone else to elicit discussion (Harper, 2002). In this case, the photographs were provided by the
 206 other participants rather than the research team. This facilitated further elicitation from
 207 participants. Viewing other people's photos either affirmed or contradicted their own ideas or
 208 triggered additional unexpressed or hitherto unconscious thoughts, about the experience of being
 209 an older person in the Calder Valley. As Harper argues "photographs may lead an individual to a
 210 new view of their social existence" (p21). In this way, the photographs appeared to prompt ideas
 211 about age-friendliness from other group members which may not have been the original intention of
 212 the photographer. For example, a participant took a photograph of a woman battling through a
 213 blizzard to illustrate community spirit, [photo 1 'Blizzard'] but other participants interpreted it as
 214 representing the isolation and difficulty of rural life for older people.

215
 216 Participants then had the opportunity to ask questions about any other participants' photographs.
 217 They were also asked whether there were additional aspects of age-friendliness not captured in the
 218 photographs. Notes of the discussion were taken by a second research team member.

219 220 **Co-researcher participation**

221 At the end of the sessions, participants were invited to continue in the project as co-researchers to
 222 work on data analysis and a range of dissemination tasks and 12 of the 13 original participants
 223 accepted this invitation (Appendix 1). The tasks were described and participants could sign up on
 224 sheets that were circulated in the group. An hourly fee was paid to co-researchers.

225 Participant co-researchers interested in data analysis were invited to four further sessions. The first
 226 was a training session where they were introduced to quantitative and qualitative research. In the
 227 second session they were introduced to inductive thematic analysis (Braun & Clarke, 2006), shown
 228 an example and practiced the technique using a worksheet. During the third session, they identified
 229 themes in the data collected from all sources: individual descriptions of photographs; comments on
 230 other people's photographs; notes from the discussion; and recorded them individually on a form.

231 Two members of the research team examined the themes identified by the participant co-
 232 researchers and using principles of grounded theory (Harry et al., 2005), categorised the themes in
 233 an inductive, iterative process, and then mapped them to an a priori framework and identified gaps
 234 leading to a set of high-level themes with subthemes nested within them.

235 These were presented to the participant co-researchers for validation at a fourth session. Finally, the
 236 participant co-researchers were introduced to the AFC domains (World Health Organization, 2007),
 237 which are as follows:

- 238 • Domain 1 - Outdoor spaces and buildings
- 239 • Domain 2 - Transportation
- 240 • Domain 3 - Social participation
- 241 • Domain 4 – Respect and social inclusion
- 242 • Domain 5 – Civic participation and employment
- 243 • Domain 6 – Communication and information
- 244 • Domain 7 – Community support and health services

- Domain 8 – Housing

It was immediately clear that there was little direct transfer from the Age Friendly Rural Area themes to the AFC domains (World Health Organization, 2007). Therefore, the participant co-researchers focused on identifying where their subthemes fitted AFC domains.

Participants were all invited back to a celebration at the end of the project and gave feedback on their experience of participating in the project.

Dissemination methods

Dissemination activities were planned for different audiences including a report, a photographic exhibition and a presentation. Participant co-researchers were invited to contribute to these activities and details of the activities are shown in Appendix 1.

The photographs for the exhibition and the illustrated report were selected by the participant co-researcher photography group (Figure 1). At an initial meeting, the participant co-researchers were shown the complete set of photos from both groups. They agreed that individuals were initially free to choose any photos they wanted without needing to represent the final themes identified in the analysis. They made their individual choices from the full list and this became the long-list. The research team put the long-list into a PowerPoint presentation which was viewed at a second meeting where the participant co-researchers agreed that they would aim for a final selection of around 30 photos, which was felt to be an appropriate number for an exhibition. They then made the final photograph selection for the exhibitions.

An exhibition was planned as one of a series of public events and workshops to mark Dementia Friendly Week. The participant co-researcher photography group brought additional ideas of places to show the photos and decided by consensus on which additional venues to approach and took on responsibility for contacting the venues.

Following data analysis, a report was produced, illustrated with photographs from the project, to be sent to local policy-makers and politicians. The report outline was planned by the research team and participant co-researchers, who then split the writing and editing tasks, with the research team completing the editing, design and printing.

A seminar was arranged to engage academics and researchers. The seminar presentation was planned by the research team and participant co-researchers, with the preparation tasks and presentation divided between them.

Results

Participants

Of the 13 who attended the initial session, 12 completed the data collection and feedback phase. All participants had equipment that they could use to take digital photographs with no-one requiring disposable cameras. 11 people used smartphones and one used a digital camera. Two participants submitted photos that they had manipulated to better represent their concept, one digitally, and one who submitted photos of collages created from her photographs with images from magazines added to them. [photo 2 'I can see but am I seen?'] Nine participants submitted the maximum of 10 photos. A total of 111 photos were received. One participant dropped out at the end of the photo-elicitation sessions, and one who had dropped out after the initial session re-joined, giving a total of 12 participant co-researchers. Six participant co-researchers worked on data analysis, 10 worked on

photo exhibitions, two worked on the report and three were involved in presentations (Appendix 1). One participant co-researcher worked on all four work-streams, three participant co-researchers worked on three work-streams, three participant co-researchers worked on two work-streams and five participant co-researchers worked on one work-stream.

Data analysis

The research team identified 10 themes, which were presented to the participant co-researchers for validation. The participant co-researchers identified two further themes giving a total of 12 themes, and they re-allocated the subthemes where required (Appendix 2). The themes and subthemes were then compared with the domains from the AFC by the participant co-researchers.

This mapping process showed that the themes identified by this project did not map directly to the AFC domains, but that many of the subthemes could be mapped to AFC domains (Table 2). For example, the theme of 'Mobility' in our project, had subthemes which mapped to three AFC domains, those of 'Transport', 'Social Participation' and 'Outdoor spaces and buildings'.

Within the themes, 'Place and Identity', 'Local Services and Amenities – Businesses' and the 'Benefits of Ageing', participant co-researchers found no equivalent in the AFC domains (Table 3). Four themes had all or nearly all the subthemes mapping to AFC domains: 'Mobility'; 'Local services and amenities – Council services'; 'Local services and amenities – technology' (though this only had one subtheme); and 'Local Services – voluntary sector and charities', (though this had only two subthemes). Other themes were more mixed (Table 2).

Table 2: Themes and Subthemes of Age Friendly Rural Areas project and number of Subthemes that map to AFC domains.

| Theme number | Theme | Number of subthemes | Number of subthemes which map to AFC themes |
|--------------|---|---------------------|---|
| 1 | Place and identity | 6 | 0 |
| 2 | Challenges of ageing | 11 | 6 |
| 3 | Mobility | 11 | 10 |
| 4 | Health and wellbeing | 7 | 2 |
| 5 | Activities | 8 | 3 |
| 6 | Geographical environment | 5 | 2 |
| 7 | Local services and amenities – Businesses | 6 | 0 |
| 8 | Local services and amenities – Council services | 6 | 6 |
| 9 | Local services and amenities – technology | 1 | 1 |
| 10 | Social interaction | 12 | 4 |
| 11 | Local Services – voluntary sector and charities | 2 | 2 |
| 12 | Benefits of Ageing | 6 | 0 |

Table 3: Themes and Subthemes of Age Friendly Rural Areas which had no equivalence to AFC domains.

| Theme number | Theme | Subthemes |
|--------------|---|--|
| 1 | Place and identity | Tension between preserving historical features and accessibility |
| | | Tension between preserving the natural environment and accessibility |
| | | Knowing and preserving the history of the local area |
| | | Practicing and passing on skills, crafts and traditions |
| | | Appreciating the importance of places and personal histories and connections to them |
| | | Connection with the seasons |
| 7 | Local services and amenities - Businesses | Market, for social contact and buying small quantities |
| | | Milk delivery |
| | | Local shops |
| | | The loss of local banks |
| | | Cafés and restaurants |
| | | Post office |
| 12 | Benefits of Ageing | Opportunities to slow down and reflect |
| | | Growing confidence through age and experience |
| | | Living in the present |
| | | The freedom to be one's self |
| | | The acceptance of change |

Dissemination results

One photographic exhibition was included in the project plan. This took place at the Town Hall in Hebden Bridge during Dementia Friendly Week events (1-5 October 2018) and included a presentation by a member of the research team (2 October 2018). The enthusiasm of the participant co-researchers led to a further two local exhibitions. One was at the Mytholmroyd Gala (17 July 2018), a local summer fete. Participants invigilated at the exhibition and talked to local people about the project and its findings. The other was at the church at Heptonstall, a hilltop village with a small tourist industry, where some participants lived. A smaller selection of photographs were exhibited for three weeks in August and September 2018. A fourth exhibition was shown as part of the academic seminar presentation (19 December 2018). The seminar was advertised by the Manchester Institute for Collaborative Research on Ageing and attracted academics and members of the public. It included academic presentations and contributions by participant co-researchers including a film that they made independently about their experience of participating in the project. Reports were distributed to local organisations, local councillors, town councillors and Members of the UK Parliament. According to a Hebden Royd Town Councillor, the report "helped to persuade Hebden Royd Town Council to work towards becoming an Age Friendly Town Council." (V.S. 2020 Personal communication. 19 October 2020)

Eight of the 13 participants attended the final celebration. They were asked to put sticky notes on a chart on which they had written what they had most enjoyed, and five referenced meeting people

with similar interests, four said taking and looking at the photos, and three noted being part of a creative project.

Discussion

This pilot project explored the feasibility and acceptability of using adapted photo-elicitation to engage older rural participants in research and generate data to explore what makes rural areas age-friendly for people over 60. It also investigated whether AFC domains are directly transferable to rural areas. The creative outputs were disseminated widely and reached a variety of audiences.

Use of creative research methodology

Photo-elicitation appeared to be a feasible research method for this population. Arrangements had been made to provide disposable cameras for participants if required. These photographs would then have been developed and digitised by the research team. However, all participants had access to digital cameras or smartphones and appeared comfortable with use of these devices. Equally, the task of emailing their images to the research team was something that all participants were able to do without support. This suggests that digital photography is not a barrier to participation for older people in projects such as this and supports other findings which show that older people are increasingly familiar with smartphones, tablets and social media (OFCOM, 2017; Open Access Government, 2018).

Photo-elicitation also appeared to be an acceptable research method to use with older people in rural areas. Despite the short 6-month timeline for the project, it was possible through partnerships with local organisations and advertising in the local area, to recruit more than the minimum goal of 10 participants. However, this may indicate a limitation: the project may have only attracted people with an existing interest in photography or creative activities, which was highlighted in the feedback with many participants describing photographs and participation in a creative project as what they enjoyed about the project.

The involvement of a research team member who was a local resident may also have affected participation. Though many participants were recruited via the project publicity, the conversion from enquiry to participant may have been influenced by the researcher's local knowledge. The researcher was also able to talk to local people about the project and encourage participation. Both of these factors may have increased trust and confidence, leading some people to agree to participate who may otherwise not have done so and resulting in familiarity bias. However, it could also support the argument that researchers need to be sufficiently embedded with communities to be able to overcome participants' fear of the unfamiliar and thus increase participation, as previous studies have identified the psychosocial distance between researcher and subject as being a barrier to engaging participants (Sixsmith et al., 2003).

However, this project generated a highly motivated group who remained involved with the project after the photographic stage and completed four further work-streams. The ongoing engagement of participants in projects using photo-elicitation methodology is confirmed by previous research (Joy, et al., 2014).

Though the participants had initially been attracted by, and signed up to a two session photographic project, six participant co-researchers worked on data analysis which involved a further four sessions, twice as many sessions as they spent on the photography project (Appendix 1). Participant co-researchers were paid for their time, but this was not disclosed until after they had volunteered so was not a determining factor in deciding to continue as participant co-researchers. Their

commitment and interest in working with the data they produced led to the validation of 12 themes, including identification of an additional two themes which were not initially identified by the research team.

This suggests that photo-elicitation was not only a useful recruitment tool but could be used to enhance patient and public involvement and engagement (PPI/E), which is crucial to ensure research is relevant to the needs of the public (INVOLVE, 2012).

The Age-Friendliness of rural areas

This project provided insight into the views of older people about the age-friendliness of their local environment. This project started from the participant experience rather than using the existing WHO domains and hoped to capture aspects of age-friendliness that were specific to rural areas. Photo-elicitation was chosen as a methodology which could achieve this as prior studies suggest that photo-elicitation enables participants to be the expert in their lives and communities (Glover et al., 2008; Rose, 2016). In this project, participants were asked to use photo-elicitation to respond to a broad question – “What makes the Upper Calder Valley age-friendly or not age-friendly?” without further intervention or prompts from the research team. The methodology, therefore, avoided participants being overly influenced by any assumptions the research team may have had and prevented them from being led to particular responses through exposure to questions, which may have set the parameters within which participants could reflect. Other studies have used photo-elicitation to help researchers understand other experiences or cultures (Samuels, 2004) and to show the researcher what is important to participants (Stanczak, 2011). Stanczak describes the ‘a-ha’ moment when participants reveal something about their lives that the researcher does not know (Stanczak, 2011).

Therefore, it was to be expected that the themes identified in this project would be wide ranging, including aspects of the physical environment, local infrastructure, and aspects related to individual circumstances and opportunities. Harper’s (2002) argument that “images evoke deeper elements of human consciousness than do words,” (p13) leading to the collection of different kinds of information, may have led to some of the more philosophical reflections in the themes of the benefits of ageing and the relationship of place and identity that were not found in the WHO Age-Friendly City domains.

The methodology allowed participants time to consider the question of age-friendliness in rural areas, as they could spend between 7-10 days taking their photographs and also created distance through the use of the lens, which allowed them to observe their experience. Backman and colleagues (2012) describe a study on infection prevention where participants took part in photo-walks around the medical units and through the use of photo-elicitation, seemed able to observe and describe the systems in place and identify how they created barriers to effective infection control. Among our participants, there were many photographs related to their choice to live in a rural and sometimes, isolated, area as an older person, dealing with the environmental challenges such as steep valleys and hard winters, as well as the diminishing abilities related to ageing. Some of these photographs raised questions for participants about how this would affect them in the future. The methodology was adapted to include focus groups rather than individual interviews. This was to allow for interaction between participants in order to generate more data. However, it may have also contributed to the engagement of the participants as it created a social group in which participants made new friends and renewed old acquaintances.

This adapted methodology also included, in phase 3 of the project, the opportunity for participants to view each other's photos and to share any additional ideas about age-friendliness. These ideas may have been the same or different to the photographer's intention. Photo-elicitation usually involves either the use of existing photographs provided by the research team or photos produced by the participants. In this methodology both were utilised as participant photographs became 'existing photographs' for other participants.

Mapping the themes to AFC

In order to prevent participant bias towards existing AFC domains, a methodology was selected that allowed participants to identify individual priorities without prior influence. However, this relied on participants having no previous knowledge of AFC domains. In fact, the research team became aware that one participant did know about them and was asked not to discuss them with other participants. No other participant made any mention of them, however, this does not preclude them having an existing knowledge. In future studies, this could be investigated through the use of a pre-project survey.

The findings of the research showed similarities and differences to the AFC including gaps discussed above. Once the co-researchers had validated the themes from their data analysis in Phase 4 (Figure 1), they were introduced to the AFC domains and mapped their themes and subthemes to them. This method was also employed by Wang et al. when researchers mapped the age-friendly elements in the China Health and Retirement Longitudinal study (CHARLS) to the AFC domains (2017). However, in our study, the co-researchers identified the themes and subthemes with research team support and did their own mapping.

Despite most participants apparently having no prior knowledge of the AFC themes, there were several findings in common in the two sets of data suggesting commonalities between older people living in cities and rural areas; a finding noted by Lui et al. (2009). As they reported, mapping the themes to the AFC domains highlighted some significant differences between the two sets of data. The most striking were the themes of 'Place and identity', and 'Local services and amenities – businesses', and 'The benefits of ageing,' where the co-researchers did not find any equivalent in the AFC domains or their subthemes (Table 3).

'Place and identity' was a theme which generated lively discussion during the project. The participants appeared to have a strong sense of the value of their surroundings whether they had been born in the area or had moved there subsequently. Other participants talked about the importance of maintaining local traditions and photographed traditional crafts such as rag rug making [Photo 3 'Rag rug'], and traditional foods such as the dock pudding (a traditional dish only found in the Calder Valley). It may be that, as Harper (2002) suggests, the methodology employed allowed this deeper reflection on the relationship between age-friendliness and place and identity.

The subthemes appear to indicate that an awareness of the importance of the history and tradition of their surroundings matters to older people, and therefore, an acknowledgement and appreciation of this by the whole community is a crucial aspect of the age-friendliness of the community. If older people witness the destruction of historical features or natural environments, or a lack of respect for the history or traditions of the area, they may experience this as age-unfriendliness, even if local infrastructure serves the needs of older people.

'Local services and amenities – businesses' was another subject of much discussion. Participants took photographs of local shops and markets, suggesting their importance to older people. This may be an indication that older people would prefer to shop locally rather than make journeys which may

be difficult, expensive or time consuming. Participants talked about the importance of local shopping for regular social interaction. This contrasts with working age people, many of whom commute to larger conurbations and can access shops and other businesses while they are there. Working age people may also rely on internet shopping. The confidence with which the participants used their smartphones and email suggests that they may have the technological means to shop online, as reported elsewhere (OFCOM, 2017; Open Access Government, 2018), but still valued the opportunity to use local shops. The valuing of local businesses may relate to the subthemes in 'Social Interaction', which include such things as intergenerational contact, daily interaction with service providers and daily interaction with neighbours and the wider community, all of which can be achieved in a local shopping trip (Appendix 2).

The focus of participants on local businesses may reflect concern about the precariousness of rural shops which are reported to be closing at a rate of 400 per year (The Plunkett Foundation, 2019). Another possibility is that there is more intimacy in the relationship between customers and businesses in rural areas, [Photo 4 'Heptonstall Post Office'] where the small population means that there is less anonymity and the limited number of businesses mean that customers do not have a choice of businesses to use.

Participants discussed many benefits of ageing which was not a theme that appeared in the AFC domains. All participants were retired and appreciated having more time to themselves now that they had finished their working life. They described feeling more confident due to the accumulation of experience, and less concerned about other people's opinions. While they were aware of their increasing physical limitations, they also expressed satisfaction with the ways they overcame these challenges. [Photo 5 'Hairdressers'] These findings identify positive aspects of ageing which could be the subject of further research. The reflections by participants may have been made possible by the methodology, which allowed them to choose their own priorities, and take more time to think about the issue. However, the self-selection of the group may also have been a contributing factor, in that they were all active and mobile, and able and confident enough to participate in the project. Nevertheless, these views reflect the views of a selection of people over 60 and should be taken into account.

Participant engagement in dissemination

As part of the research project, a number of dissemination activities were planned to address different audiences. The generation of photographs created dissemination opportunities such as the photographic exhibition and illustrated report. The engagement and enthusiasm of the participants meant that more dissemination activities took place than anticipated such as the additional exhibitions.

The methodology employed the use of photographs and participant engagement, which led to the research having a wider impact than would otherwise have been possible, as the photographs created opportunities to create dissemination material which was attractive and visually interesting to the general public as well as material of interest to the academic community. The photographic exhibitions were accessible to local people at a community festival, tourists and parishioners visiting a local church, visitors to local Dementia Friendly Week events, academics and members of the public attending a University seminar. The exhibitions included an information board, which described the project and the main findings. An additional impact of the project was the decision of some of the participants to produce their own film about the project and show it at the academic seminar.

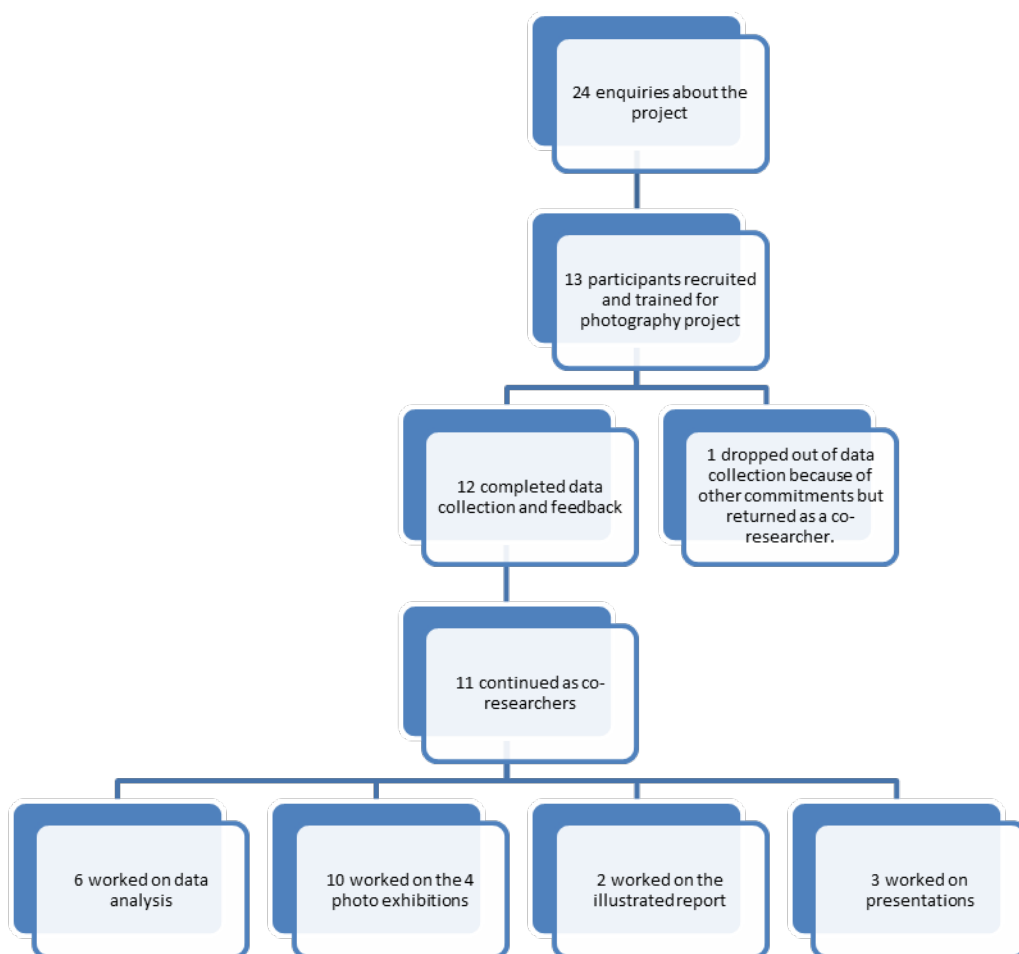
Limitations include the lack of representativeness of the participant group. Though there was a spread of ages, the group was self-selecting and not necessarily representative of people over 60 years of age. The participants were all active with few mobility problems, living independently and confident enough to initiate participation. They were also interested in participating in a photography project, which may not be representative of the population as a whole. Participants did not represent the geographic spread of the project as the majority came from one community. Data was not collected on social class. In a future project, it would be important to target a wider range of participants, with age, ethnic and socio-economic representation.

This research used a different methodology than the AFC so a direct comparison of the findings is not possible. In addition, though the thematic analysis of the data was an important engagement opportunity and an activity that the participants pursued with enthusiasm, their training in thematic analysis was brief and rudimentary and this may have skewed the results, as well as there being the risk of participants introducing bias by emphasising their own views.

However, this study showed that the adapted methodology was acceptable to this group and that it engaged participants, the majority of whom continued to work as co-researchers. It generated data that provided insight into the views of people over 60 about the age-friendliness of the Upper Calder Valley, including differences and similarities to the AFC domains. This information can inform the development of policy in rural areas to be more closely aligned to the needs, preferences and interests of the growing population of older people. Further research is needed into the acceptability of this methodology in a more representative sample, the use of creative methodology to promote engagement in research and in older people's perspectives on the benefits of ageing.

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| Theme number | Theme | Subthemes | AFC equivalent |
|--------------|--------------------|--|----------------|
| 1 | Place and identity | Tension between preserving historical features and accessibility | None |
| | | Tension between preserving the natural environment and accessibility | None |
| | | Knowing and preserving the history of the local area | None |
| | | Practicing and passing on skills, crafts and traditions | None |
| | | Appreciating the importance of places and personal histories and connections to them | None |
| | | Connection with the seasons | None |
| | | | |

| Theme number | Theme | Subthemes | AFC equivalent |
|--------------|----------------------|--|------------------------------|
| 2 | Challenges of ageing | Maintaining valued independence | Community Support & Health |
| | | The desire to maintain attachment to home and belongings | Community Support & Health |
| | | The importance of privacy | None |
| | | Feeling included | Respect and Social isolation |
| | | Awareness of mortality | Community Support & Health |
| | | Fear about the future and planning for the future | Housing |
| | | Need for courage and perseverance | None |
| | | Feeling safe | Respect and Social isolation |
| | | The fear of change | None |
| | | Continuing pride in appearance | None |
| | | The importance of questioning and maintaining critical faculties | None |
| | | | |
| 3 | Mobility | Bus routes | Transport |
| | | Accessible buses, trains and taxis | Transport |
| | | Wider public transport connections to beyond the local area | Transport |
| | | The transition from driving to not driving | None |
| | | Helpful bus drivers | Transport |
| | | Accessible public buildings and social spaces | Social participation |
| | | Road and pavement surfaces and steps | Outdoor spaces and buildings |
| | | Pavement obstacles | Outdoor spaces and buildings |
| | | Benches and resting places | Outdoor spaces and buildings |
| | | Access to public toilets | Outdoor spaces and buildings |
| | | Services for housebound people | Community Support & Health |

| Theme number | Theme | Subthemes | AFC equivalent |
|--------------|--------------------------|--|------------------------------|
| | | | |
| | | | |
| 4 | Health and wellbeing | Dementia | None |
| | | Sensory loss – hearing and sight | None |
| | | Access to health services | Community Support & Health |
| | | Access to alternative therapies | None |
| | | The burden of caring responsibilities | None |
| | | The impact of disability | None |
| | | Looking after your own health | Community Support & Health |
| | | | |
| 5 | Activities | Activities in the natural environment | None |
| | | Opportunities for physical activity | None |
| | | Social benefits of engaging in activities | Social participation |
| | | Life-long learning | None |
| | | The benefits of creativity and access to culture | None |
| | | Accessibility and location of venues | Social participation |
| | | Importance of relaxation | None |
| | | Preconceptions about what older people will want to do or are capable of doing | Social participation |
| | | | |
| 6 | Geographical environment | Access to open space and nature | Outdoor spaces and buildings |
| | | Climate and landscape | None |
| | | Flooding | Community Support & Health |
| | | Navigating the local environment | None |

| Theme number | Theme | Subthemes | AFC equivalent |
|--------------|---|--|-------------------------------|
| | | Benefits and disadvantages of being in a small community | None |
| | | | |
| 7 | Local services and amenities – Businesses | Market, for social contact and buying small quantities | None |
| | | Milk delivery | None |
| | | Local shops | None |
| | | The loss of local banks | None |
| | | Cafés and restaurants | None |
| | | Post office | None |
| | | | |
| 8 | Local services and amenities – Council services | Refuse collection and litter bins | Outdoor spaces and buildings |
| | | Highway maintenance and pavements | Transport |
| | | Buses and trains | Transport |
| | | Welfare support and benefits | Respect and Social isolation |
| | | Social care services and being able to stay in one's home | Community Support & Health |
| | | The impact of littering and poor maintenance of the area | Outdoor spaces and buildings |
| | | | |
| 9 | Local services and amenities – technology | Pace of change and innovation | Communication and information |
| | | | |
| 10 | Social interaction | Intergenerational contact including with children | Social participation |
| | | Daily interaction with service providers (shops, post office, buses) | None |
| | | Daily interaction with neighbours and the wider community | Housing |
| | | The opportunity to opt out of social interaction | None |

| Theme number | Theme | Subthemes | AFC equivalent |
|--------------|---|---|------------------------------------|
| | | Opportunities to socialise over food | None |
| | | Deeper friendships including family/spouse | None |
| | | Embracing diversity in social interaction | Social participation |
| | | Daily opportunities to socialise outside the home | None |
| | | Feeling visible and welcomed | None |
| | | Community hubs (post office, bus etc.) as location for informal interaction and information | Communication and information |
| | | The importance of fun and laughter | None |
| | | The importance of reciprocity | None |
| | | | |
| 11 | Local Services – voluntary sector and charities | Volunteering opportunities | Civic participation and employment |
| | | Organised social activities | Social participation |
| | | | |
| 12 | Benefits of Ageing | Opportunities to slow down and reflect | None |
| | | Growing confidence through age and experience | None |
| | | Living in the present | None |
| | | The freedom to be one's self | None |
| | | The acceptance of change | None |
| | | Overcoming physical limitations | None |

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