UTS ePRESS

Gateways: International Journal of Community Research and Engagement

Vol. 15, No. 1
June 2022



**Citation:** Rooks, R. N., McCarthy, S., Graybeal, B., and Griffin, S. 2022. Community-Engaged Research on Social Capital and Older Adults' Health: Lessons Learned. *Gateways: International Journal of Community Research and Engagement*, 15:1, 1–16. https://doi.org/10.5130/ijcre.v15i1.7832

ISSN 1836-3393 | Published by UTS ePRESS | http://ijcre.epress.lib.uts.edu.au

PRACTICE-BASED ARTICLE

# Community-Engaged Research on Social Capital and Older Adults' Health: Lessons Learned

**Ronica N. Rooks[1], Sarah McCarthy[2], Britanie Graybeal[3] and Stephen Griffin[4]**

[1] Associate Professor and College of Liberal Arts and Sciences' Director of Online Education, Department of Health and Behavioral Sciences, University of Colorado, Denver, Colorado, USA
[2] Independent Consultant, Fairhill & Company, Denver, Colorado, USA
[3] Director of Quality and Risk Management, Encompass Health Rehabilitation Hospital of Littleton, Littleton, Colorado, USA
[4] Research Analyst and Owner, Strategic Policy Advising LLC, and Elementary Special Education Paraprofessional, Denver Public Schools, Denver, Colorado, USA

**Corresponding author:** Ronica N. Rooks, Associate Professor and College of Liberal Arts and Sciences' Director of Online Education, Department of Health and Behavioral Sciences, University of Colorado, Denver, Colorado, USA, ronica.rooks@ucdenver.edu

**DOI:** https://doi.org/10.5130/ijcre.v15i1.7832
**Article History:** Received 24/07/2021; Revised 05/11/2021; Accepted 07/03/2022; Published 06/2022

## Abstract

Most adults in the United States prefer to age in their own homes and communities. However, many ageing-in-place models rely on expensive external services, negatively affecting access by lower socioeconomic status (SES) and other vulnerable groups. This article documents two pilot projects conducted by a community-academic partnership that examined associations between social capital, ageing in community, and health among older adults. The first project explored the association between social capital and health across community SES levels. The second project explored one type of social capital, timebanking, and its association with health. We highlight here our lessons learned from these community-engaged research (CER) projects: (1) Our partnership needed to improve our study design and data collection by enhancing our recruitment strategies, community site partnerships, survey instrument and data matching, and research team workload allocation issues. (2) We should have validated our instruments for use with older adults who had mild cognitive and visual impairments, acknowledged how community SES differences influenced our data collection, and included more research assistant support



**DECLARATION OF CONFLICTING INTEREST** The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. **FUNDING** This work was supported by a Colorado Clinical and Translational Sciences Partnership Development and Joint Pilot grants.

during our community meetings. (3) We would have benefited from protocol development for recording and responding to issues raised by participants. Our projects also led us to relational insights, such as reinforcing the need to foster clear communication across team members, involving community advisory boards earlier in the CER process, seeking network input on research strategies to meet older adults' needs, and developing plans to sustain long-term relationships. We hope these lessons learned are useful to other community-engaged researchers.

## Keywords

**Social Capital; Ageing in Community; Community-Engaged Research; Timebanking, Older Adults; Socioeconomic Status**

## Introduction

Most models for ageing-in-place in the United States of America (USA), such as village models, are unaffordable for lower income older adults. Village models are community-based, nonprofit organisations offering health and social services to increase community-dwelling older adults' ability to age-in-place (Village to Village Network 2022). The authors of this article, an academic gerontologist and a community organiser and activist in Colorado, partnered as co-Principal Investigators (co-PIs) to examine alternatives to fee-based village models. We wanted to learn if reciprocity, i.e. neighbours helping neighbours at no cost, as part of ageing in community (AIC) grassroot efforts to help people remain in their homes and communities as they age, could minimise older adults' health challenges (Thomas & Blanchard 2009).

This article documents our community-based research on two pilot projects and examines other models for engaging older adults in their communities. The academic partner was an Assistant Professor at the University of Colorado Denver and the community partner was the Executive Director at the Neighborhood Resource Center of Colorado (NRC). Prior to its closure, NRC's mission as a statewide nonprofit organisation was to build the capacity of others to build community. Based on our interest in ageing, communities and health, we connected with the Colorado Clinical and Translational Sciences Institute (CCTSI) and statewide community groups working with older adults to secure funding and partnership support.

Our first project focused on AIC strategies associated with older adults' health across community socioeconomic status (SES) levels. It included a social science and ethnographic researcher, a former Area Agency on Aging worker, a doctoral student in interdisciplinary Health and Behavioral Sciences, and two Masters in Public Health students as research assistants (RAs). The research team worked with older adults during community meetings and assisted the co-PIs with data collection and analysis. Our second project examined the suitability and sustainability of timebanking as one method to build social capital, or community capacity, for older adults. We examined associations between timebanking participation and older adults' health. The research team included an undergraduate in public health and a post-graduate RA working with the co-PIs on data analyses, presentations and writing. Our goals for these projects were to leverage AIC models and build social capital through partnerships with Colorado's older adult service organisations.

This article describes our research team's challenges and lessons learned from our two pilot projects. We critically examine our methods and older adults' assets and needs using AIC models. We provide insight to the importance of developing strong community-academic partnerships through clear role assignment, duties expected of team leaders, strategies for developing a Community Advisory Board (CAB) and site partnerships, and tactics to ensure useful data collection and analysis for those new to community-engaged research (CER). The lessons learned may be beneficial to academic researchers interested in CER in supporting older adults' health across community SES levels.

# Background

## SOCIAL CAPITAL AND AGEING IN COMMUNITY

Most Americans prefer to age-in-place, i.e. continue to live at home with support services, as an alternative to nursing homes (Binette & Vasold 2018; Rosenwohl-Mack et al. 2020). However, some researchers express concern as to whether the ability to age-in-place is universal, particularly amongst socially vulnerable groups such as lesbian, gay, bisexual, transgender, queer, African American and Latino older adults (Blanchard 2013; Golant 2008; Thomas & Blanchard 2009). Ageing-in-place programs frequently fail to consider how unequal access to assisted external services, due to lower SES, fewer family and social networks, and/or greater health disparities or chronic conditions may affect some older adults and their quality of life (Thomas & Blanchard 2009; Vanleerberghe et al. 2017). Additionally, social isolation and co-morbidity rates among all older adults show clear differences in individual SES (Finlay & Kobayashi 2018; Nicholson 2012). Thus, we assessed the value of building social capital as a health-promoting strategy for older adults.

We used Bourdieu's (1986) definition of social capital, which to paraphrase is the aggregate of actual or potential resources linked to a network of institutionalised relationships. In other words, social capital implies group membership, providing each member with '… collectively-owned capital, a "credential" which entitles them [members in a group] to credit in the various senses of the word' (Bourdieu 1986). Building on Bourdieu's definition, Carpiano (2006) asserts that social capital consists of actual or potential resources within social networks that can be drawn on by community members and is aligned with a community's socioeconomic conditions. We explore Carpiano's assertion below.

Social capital is widely shown to influence individual and community health outcomes (Coll-Planas et al. 2017; Pérez et al. 2020). This may be particularly important for older adults in later stages of the life course (Norstrand & Chan 2014; Nyqvist et al. 2013) or in social isolation due to declining health and/or mobility (Siette et al. 2021; Yiengprugsawan, Welsh & Kendig 2018). Moreover, social capital may help older adults with limited literacy and access to the Internet or social media stay connected to family and friends (Barbosa Neves et al. 2018; Litchman & Edelman 2019; Zhu et al. 2021).

Ample evidence connects lower SES to lower social capital, both relating to greater social inequalities in health and healthcare (Kim et al. 2021; Uphoff et al. 2013). However, few empirical studies explore differences in social capital by community SES or the pathways relating social capital to health (Browne-Yung, Ziersch & Baum 2013; Child et al. 2020). Browne-Yung, Ziersch & Baume (2013) found that the resources needed to develop social capital, such as social networking ability, differed by community SES, while Child et al. (2020) found access to neighbourhood and network social capital varied by individual SES. Information on the variation in social capital across community SES levels could inform the types of community development programs implemented to address older adults' increased need for healthcare and long-term care costs.

Social capital is a key component of successful AIC initiatives (Greenfield 2014; Hou & Cao 2021; Thomas & Blanchard 2009). AIC requires coordinated support services, tutoring and volunteering (Chou & Kroger 2014; Hunter, Neiger & West 2011) to keep older adults in their homes and connected to their communities. AIC eliminates a major barrier to ageing-in-place for lower SES older adults, offering an alternative to paying for external services. Our research used an AIC framework to reduce the need for external health and social services for older adults.

One proposed community building strategy, timebanking, facilitates social capital building. Timebanking is a concept created by Cahn and Rowe (1992). Timebank members volunteer their service time to help others in exchange for earning One Time dollar, a unit of 'service-oriented barter currency', for each hour

spent performing a service, regardless of the type of service (Cahn & Rowe 1992; Dakin 2007). Time dollars can be used to meet a timebank member's own service needs later. The transactional nature of timebanking as an intervention focuses on maintaining or improving older adults' community capacity, sense of belonging and health, as well as reducing societal-level healthcare costs. Timebanking is associated with increased emotional and physical wellbeing, decreased social isolation and depressive symptoms, improved independence, and reduced medications and hospitalisations among older adults (Collom 2008; Dakin 2007; Lasker et al. 2011; Lee et al. 2020). We believe the reciprocity and equality of participant services associated with timebanking make it an advantageous social capital building strategy (Spinelli et al. 2019). Our research focused on testing the timebanking model with older adults to improve or maintain their health.

### COMMUNITY-ENGAGED RESEARCH WITH OLDER ADULTS

We conducted two projects using mixed methods with funding from CCTSI (see the Appendix). This institute is funded by the National Institutes of Health's Community and Translational Sciences Award programs in the USA, established to improve the translation of basic and clinical findings to benefit health (Blachman-Demner, Wiley & Chambers 2017). Our CER projects used a community-academic partnership, based on the partners' complementary skills.

We used CER principles in both research projects. CER is a conceptual and methodological framework which values community partner and stakeholder engagement at any phase of the research process (Bishop et al. 2020; Blachman-Demner, Wiley & Chambers 2017; Pasick et al. 2010). Community participation can range from minimal engagement to full participation in, or collaboration on research such as community-based participatory research (CBPR). Community partners may include community-based institutions, advocacy or grassroots groups, or community members from these groups. CER encourages community stakeholders' perspectives on refining study questions, implementing strategies and data collection plans, identifying results that may be applied to practice and shaping how results can be used in future research. Thus, CER is essential to the translation of research into meaningful health improvements for the community. The purpose of this article was to describe how we engaged communities to evaluate whether older adults' health could be improved through social capital building activities, and then to share the lessons learned in the hope they may benefit academic researchers and community partnerships.

## Method

### COMMUNITY-ACADEMIC PARTNERSHIP DEVELOPMENT TRAINING

CCTSI's community engagement core provided training for new co-PIs to develop community-academic partnerships, including three sessions during the partnership development pilot and one session during the joint pilot grants. Our training involved exercises for the partners to learn about each other, explore CBPR principles and examine communication styles. We discussed how to leverage our similarities and differences when developing our partnership and agreed to use the Community Capacity Building Tool, an instrument designed to support consensus-based partner discussions. We also engaged with a CBPR coach, who facilitated future discussion sessions to advance our project. Our joint pilot grant training for established community-academic partnerships refreshed our understanding of CBPR through mentorship. We received support on conducting research, capacity building and disseminating results. All four trainings appraised available resources for our projects, such as community engagement consultations, ethics, participant recruitment, etc. (see https://cctsi.cuanschutz.edu/community).

## COMMUNITY ADVISORY BOARD

Previous research shows CABs assist in accurately representing their community's interests, particularly when attention is given to socio-demographic and healthcare experiences within these communities, and they are influential in study design and implementation (Goris et al. 2015; Stewart et al. 2019). While most Clinical and Translational Sciences Awards currently have CABs (Stewart et al. 2019), our first project on social capital and AIC did not create a CAB. We did not realise the value of a formal CAB for input, nor did we have knowledge of its use with pilot projects at the time. However, based on our funder's suggestion, we created a CAB to assist with our second project.

Our CAB was composed of five active older adult members from the communities examined. CAB members represented their region's socio-demographic characteristics (e.g. low SES and race, ethnicity and geographic location diversity) and had knowledge about their communities' assets and needs. We recruited CAB members from NRC's networks. CAB members joined our project to learn about community resources to help maintain older adults' health, which they could use personally, as well as in their advocacy organisations.

Our CAB was involved in each stage of the data collection, analysis, interpretation and dissemination process (Main et al. 2012). Their mission included assisting the co-PIs with community interactions and decision making throughout the research process, and giving feedback on planned research materials and meetings. They helped us determine which products to create and how to inform and distribute our results to participants through older adult service organisations or neighbourhood association newsletters, websites and/or community meetings. Finally, our CAB served a dispute resolution role for airing and resolving difficulties if they occurred. We asked our CAB for feedback on our proposed activities, including creating a pros and cons list about timebanking and determining if timebanking was suitable or sustainable, as represented by our interactions with international, national and Colorado timebanks. If our CAB did not think timebanking was suitable or sustainable in Colorado, we asked them to suggest alternative social capital building strategies. We also asked our CAB for feedback on interview questions for local Colorado timebank leaders and if there were other concerns they would like us to address during or in follow-up to our timebank interviews.

## SITE PARTNERSHIP DEVELOPMENT

Our community-academic partnership goal was to learn about existing grassroots efforts, where neighbours were helping neighbours within communities to address challenges faced by older adults. For our first project, we selected site partnerships from NRC's prior work on AIC. We identified potential Denver communities representing varied community SES levels and single to multi-family unit housing styles. We consulted with communities, local government and older adult service organisations that had an interest in learning more about how to assist and enable older adults to use community capacity building strategies or other social support efforts. From a map created by NRC, our community co-PI suggested community meeting locations in low, middle and high SES communities. We found meeting sites in two older adult housing complexes, a community centre and a church. We tried to secure another location with residents from a middle SES community; however, the site was not willing to participate at that time.

With our second project, we randomly sampled existing international and national timebanks listed in the Directory of TimeBanks (http://community.timebanks.org/) and hOurworld (http://www.hourworld.org/) to generate a broad array of timebanks to participate in our survey. We emailed invitations to 326 international and national timebank coordinators. Thirty-three timebank coordinators responded, with a 10 percent response rate. We reached out to all seven existing Colorado timebanks and received five positive responses to our collecting data from their members. Three Colorado timebanks were in urban communities and two were rural. Timebank leaders and participants joined our project to learn and share information

about how other timebanks were structured and financially sustained, maintained active exchanges among members and recruited new members.

### COMMUNITY PARTICIPATION

To attract participants for our first project, we held community meetings at locations easily accessible by older adults and where lunch could be served. As compensation, participants were served lunch and given US$4 vouchers for public transportation. To increase participation, we altered our study design for our last two meetings. We shortened our presentation by replacing lunch with snacks. We also shifted the timing of our community meetings to coincide with the sites' schedule preferences and gave participants US$5 grocery cards instead of transportation vouchers, based on site leaders' and participants' suggestions.

For our second project, we held meetings to learn about Colorado timebanks and their members in members' homes, a public library and community centres. When convenient for the timebank, we attended the group's usual meeting, or scheduled a separate meeting. We kept meetings to one hour with snacks served, solicited input on a list of the pros and cons of timebanking, and discussed our survey findings from the national and international timebanks sampled. Each of the five Colorado timebank leaders who attended our meetings received US$50 gift cards, and older adult participants received US$10 grocery cards.

## Lessons Learned

### IMPROVEMENT IN OUR STUDY DESIGN

Despite our best efforts, more intentional project planning would have improved our study design and data collection. Reviewing the literature, integrating CCTSI's advice, incorporating a CAB in our second project and other improvements were insufficient.

**Sample size and data collection issues:** In our first project we had a small sample size and most participants were women. Our sample size may have been attributed to using a convenient sample rather than a representative one. We also had fewer older adult participants from high SES communities. We likely had more low SES community attendance because our selected sites were older adult housing facilities and participants did not need transportation to participate in our research. In the future, we could obtain more SES variation through systematic searches of older adult centres, housing developments and advocacy organisations in order to gauge their interest in participating in our study. However, a drawback to this strategy would be not having pre-existing relationships with leaders from these communities to invest in our research. An alternative participant suggestion was to 'piggyback' on an existing organisation's meeting to secure older adults for our research. We could visit their meeting to discuss our upcoming community meeting and then hold our meeting afterwards. With Institutional Review Board (IRB) approval, we had a chance to act on this suggestion later.

The quality and usability of our data were compromised in part by community meeting barriers. Outreach to participants, including telephone calls to organisational leaders and site flyers, did not effectively advertise or communicate a clear understanding of our research to community members. Thus, many older adults did not comprehend the meaning of social capital, for example, resulting in unclear information from them. Across our two projects we learned and used improved recruitment suggestions. For example, our community co-PI made a few visits to our site partners prior to our community meetings to build trust and relationships with the leaders and participants. We improved our community meeting flexibility by reiterating points to accommodate entrants who arrived late, shortened the duration of our

meetings to maintain participant interest, and later ensured our community meetings did not conflict with other previously scheduled events at the site.

Other community meeting challenges included a lengthy data collection timeframe and unanticipated events, which hindered our research momentum. During our first project, meetings occurred two to four months apart, over 18 months, due to scheduling conflicts and the need to add two meetings to increase our sample size with IRB approval. We experienced research team changes and needed to hire new RAs, and we did not have Spanish interpreters at one meeting due to miscoordination between the site leader and community co-PI. Thus, we learned to send reminder emails or make calls to site leaders about our upcoming community meetings.

**The importance of location:** We learned that there were advantages and disadvantages in holding community meetings at older adult housing facilities compared to other sites, as the former impacted our sample size and data variability. Housing facilities were communities in themselves, where we had greater participant numbers, more group interaction, ease in group discussion and community cohesion. Housing facilities also allowed for collecting more in-depth rich data from older adults. However, a disadvantage was that these older adults had fewer neighbourhood experiences outside their housing facilities. Relocation to age-restricted communities often represent older adults' first transition out of their homes and into supportive environments that may not have communities similar to those where they had lived previously (Hertz et al. 2016). Relocation and distance could initially limit older adults' social and physical environment interactions. Other environmental barriers included acoustic difficulties within the housing centre's gym, creating difficulties in hearing our presentation and instructions for completing the surveys. We therefore used a local church as it was a free site; however, some participants suggested that it may have turned away potential participants because it was not seen as a neutral location. In response, we scheduled meetings in a public library and considered recreation centres.

**Pre-meeting tips:** We ran out of information packets at one large community meeting. This difficulty delayed our start and distracted us as presenters. Additionally, it prompted some participants to start their surveys prior to our presentation. Solutions to these difficulties included asking the site for a head count of participants the day before our community meeting and refraining from handing out our information packets until we finished presenting.

We had difficulty also in analysing our data, as we could not link each survey to the correct participant. While we had anonymous number codes on our survey packages, we did not include a number code on each survey within those packages for each research project. A part-time project manager may have helped to avoid this problem by reviewing all things needed for the success of the research.

**Role and workload clarity:** Despite training discussing the different roles and strengths the co-PIs brought to the community-academic partnership, workload allocation difficulties led to challenges. The academic co-PI focused on hiring and managing our RAs, IRB submissions and revisions, data collection, presentation creation, article writing, and finding future funding sources. The community co-PI focused on partnership building and networking, working with our CAB, identifying other innovative groups focused on neighbours helping neighbours, meeting planning and facilitation, and keeping our partners informed of our progress via emails. We learnt from each other and built trust but neglected discussing workload distribution for the writing of publications and grant proposals to support future research. Workload tensions may have been exacerbated by not having a project manager, leaving the co-PIs overwhelmed with managing all aspects of networking, scheduling, study design, data analysis, writing, and unexpected difficulties.

## INFLUENCE OF COGNITIVE AND VISUAL IMPAIRMENTS AND COMMUNITY SES DIFFERENCES ON DATA COLLECTION

We found that cognitive and visual impairments limited many low and middle community SES older adults' understanding of our social capital instruments, whereas these difficulties were not as prevalent among high community SES older adults. Some participants needed help with cognitively processing the information in our Asset-Based Community Development Individual Capacity Inventory (Kretzmann & McKnight 1993) and Sense of Community Index-2 survey (Chavis, Lee & Acosta 2008), including assistance with talking through the questions, clarifying the meaning of terms used and providing examples, and needed time for reflection. Some participants wanted to give a yes or no response instead of the four-item Likert scale response to questions, while many surveys were not completed. We realised later that these instruments were not validated for use with older adults, which may explain our lower response rates and large amounts of missing data. However, we noticed that older adults were more likely to participate in discussions about the World Bank's qualitative Social Capital Assessment Tool (Grootaert & van Bastelaer 2002). In the future, we need to use validated instruments for older adults or pilot test them with older adults at varying income, literacy and cognitive levels.

While our first project examined strategies for older adults from different community SES levels to age in community, we were surprised by how much community SES impacted participants' ability to fully engage in research. While the community co-PI had previously done CER, this was the academic co-PIs first CER project. Based on existing literature, we expected to see relationships between community SES (a pre-existing confounding factor) and older adults' social capital and health. But there is a difference between theoretically reading about a topic and observing the pathways to how community SES relates to participants' cognitive functioning, mobility, social connections and community engagement. We believed that what constituted participants' communities was dependent on their mobility, which was driven by their community SES level. Therefore, low SES older adults might limit their community environment interactions. We were unprepared to deal with these factors in our research, as this required a larger research team at community meetings and longer meeting times to provide participants one-on-one assistance. Moreover, longer meetings seemed unfeasible as our initial meetings were two hours with lunch, and we realised we were not maintaining participants' attention over this lengthy time. Another explanation was that SES may be associated with older adults' perceptions of 'hot button' issues. Our research topic of building social capital among older adults and its association with health may not have been as important or as likely to contribute to discussion across all SES groups.

Our second project's timebanking surveys were better received by participants, which may have been due to our CAB's input on survey creation. We learned, after scanning the room for any confused looks, to ask participants if they needed assistance in filling out the surveys and offered help. All research team members participated in individual assistance as needed, but in the future we would increase the number of RAs attending community meetings to assist participants with completing their surveys.

Some participants believed they had nothing to contribute to their communities. Their reluctance may be in part attributed to their cognitive and physical functioning difficulties, as some participants mentioned needing help with their transportation from children living nearby. Their reluctance could be attributed to community SES differences, as low and middle versus high SES participants had different understanding of our instruments, definitions of community, involvement in their communities and perceived geographical boundaries of their communities, which likely influenced our data collection. High SES participants had better self-rated physical health and a broader perception of what they considered as their geographic community. Thus, we needed to acknowledge the many pathways involved in the relationship between SES and older adults' health. SES differences existed in older adults' community views, sense of belonging and time available for community involvement. These differences warrant offering varied participation incentives that may attract more high SES participants.

### ADDRESSING ISSUES RAISED BY PARTICIPANTS

During our community meetings, participants raised concerns about their housing and surrounding area related to, but outside the scope of, our research questions. For example, at one site participants mentioned speaking out about elevator issues within their housing facility, parks and recreation service problems, and street hazards, but they were not heard by an 'absentee' management company run from another state. We recorded their comments, as this input made us more aware of how participants viewed and interacted with their local communities. We considered connecting people to Housing and Urban Development or inviting a City Council member to future meetings, but we did not have a protocol to address these problems besides conveying their concerns to our site contacts.

After our first community meeting, we considered adding a short multiple-choice evaluation to gain meeting feedback from participants' perspectives. However, we did not include this additional survey because our meetings were already long and needed shortening to maintain participant engagement. On reflection, our decision would be to add a short multiple-choice evaluation with an open-ended question or oral feedback evaluation at the end of our community meetings, allowing participants to quickly voice their opinions. We needed a protocol and/or toolkit of community capacity building for capturing, resolving or making referrals, and following up with participants about issues they raised, even if they were outside our research project focus. These efforts will continue to build participant relationships and trust in our ongoing research.

## Discussion

A common element in AIC programs is the promotion of social capital and community reciprocity to supplement or replace professional fee-for-service assistance often needed by older adults to stay in their homes. These grassroots efforts coincide with a national policy shift towards consumer-directed healthcare and nursing home diversion programs, emphasising livable community initiatives underscoring social and physical environment changes (Blanchard 2013; Spinelli et al. 2019; Thomas & Blanchard 2009). We found that AIC strategies, such as timebanking, can reduce older adults' need for external health and social services and increase their sense of belonging, promoting positive mental, physical and social health. Our lessons learned focused on three areas: improving our study design, acknowledging cognitive and visual impairments and community SES differences, which influenced our data collection more than we expected, and creating a protocol on how to address issues raised by participants.

These projects reinforced the importance of clear communication in maintaining equitable partnerships. The academic co-PI acquired a better understanding of the assets and needs of Denver communities and made valuable organisational networks involving older adults. The community co-PI realised her community knowledge could become research and influence our RAs' professional development and interest in serving older adults. But we had to confront two language barriers in our projects. We needed time to develop a common language between the academic and community partners, and to resolve definitional differences 'in community' between older adults and us. In anthropology this refers to the difference between our outsiders' meaning and interpretation (etic) and our participants' insider cultural perspective (emic) when thinking about community and its impact on older adults' health (Scrimshaw & Lane 2020).

We also want to emphasise the importance of CAB involvement at each stage of research. Despite CCTSI training in partnership development and CBPR, a knowledge gap remained between our theoretical preparation and our actual experience in implementing CER. This gap highlighted the value of having a CAB, as did our difficulties with sample recruitment and data collection in our first project. A CAB's insights could have alerted us to CER challenges we encountered and offered solutions from their organisation, other networks, or literature. Instead, we searched for resources to address these problems. For example, we needed specific CER methods that effectively worked with older adults. *Better Together*

(Government of South Australia 2016) discussed effective engagement practices and strengths and weaknesses of different data collection methods with older adults. Liljas et al. (2017) discussed facilitators and barriers to engaging older adults, particularly those aged 80+, and underrepresented racial/ethnic minorities and low SES groups. Wright-Bevans, Walker & Vosper (2020) discussed the World Café method, a series of timed round table discussions focused on pre-set questions or topics adapted for use with older adults.

We needed training in CER best practices, such as research examples on the steps to take when creating a community-academic partnership and points for discussion in developing sustainable, long-term relationships (Centre for Studies on Poverty & Social Citizenship 2019). Cramer et al. (2018) mention CAB members' perspectives on the challenges and opportunities for community–academic research collaboration. Moreover, Sargent et al. (2022) mention conducting community-academic partnership assessments to improve and sustain transdisciplinary team science partnerships. For example, we needed advice on how best to involve the research team and community members in writing for publication and grant proposals (see Stampfer et al. 2019, discussing pitfalls in CER, particularly project sustainability and funding mechanism responsiveness). While our community co-PI has more than 30+ years of community organising participation, she had no academic research experience. One of her goals in working with an academic partner was to gain research expertise in measuring the possible impacts of community-building strategies among older adults. Further discussions early in our relationship about the methodological steps involved in doing research and assigning work tasks would have been time saving in disseminating our results.

There are a few limitations to our lessons learned. Our lessons learned were derived from a small number of participants, drawn from a convenience sample in a limited geographic area in Colorado, making generalisations difficult. We had few high SES community participants. We assessed information from our meeting notes, including verbally shared participant comments, but we did not include external or participants' assessments in our data collection. In our first project, we received feedback from some site leaders to improve our meetings by shortening the meeting length and changing our incentive from transportation to grocery cards to benefit participants. We hoped that our association with site leaders, who could vouch for our community PI and connect us to participants' concerns, would be an additional incentive for participation. In our second project, older adults informally shared stories about their timebanking activities, wanting to positively spread the word about timebanks. Thus, while some literature mentions participant concerns about CER not always benefiting a community and power imbalances between researchers and CABs (Safo et al. 2016), our site leaders, older adults and CABs, did not express these concerns with our two studies. In the future, we should conduct participant and CAB evaluations as part of our data collection, as recommended by Cramer et al. (2018).

We hope to focus future longitudinal research on the health of older adults participating in timebanks. We could compare timebank participants to those in other community capacity building groups and those who are not members of any groups to assess timebank's health benefits for older adults. With this knowledge we may be able to establish a timebank referral system for older adults, perhaps where timebanks are included with clinically recommended support groups as an intervention for older adults' health.

## Conclusion

As we move forward with our CER on social capital and older adults' health, we believe our lessons learned can be useful to other researchers conducting CER with older adults. We plan to take several steps based on our lessons learned, such as identifying better instruments to measure social capital qualitatively and quantitatively in association with older adults' health. We will spend more time with leaders and subject matter experts in our targeted communities to improve participant recruitment methods and data collection.

We will be more attuned to collecting and reacting to narratives about older adults' community issues and assisting participants with discovering solutions to their concerns.

## Acknowledgements

We wish to thank Ms Charlene Barrientos Ortiz for her input on the CCTSI training for this article and the many sites and participants in our research.

## References

Barbosa Neves, B, Fonseca, J, Amaro, F & Pasqualotti, A 2018, 'Social capital and internet use in an age-comparative perspective with a focus on later life', *PLoS One*, vol. 13, no. 2, p. e0192119. https://doi.org/10.1371/journal.pone.0192119

Binette, J & Vasold, K 2018, '2018 Home and Community Preferences: A National Survey of Adults Age 18-Plus. AARP Research, Washington, DC. https://doi.org/10.26419/res.00231.001

Bishop, L, Darcy, S, Sinnott, R, Avery, S, Pendergast, A & Duggan, N 2020, 'Engaging a community for youth mental health and wellness: Reflections and lessons learned', *Gateways: International Journal of Community Research and Engagement*, vol. 13, no. 1. https://doi.org/10.5130/ijcre.v13i1.6862

Blachman-Demner, D, Wiley, T & Chambers, D 2017, 'Fostering integrated approaches to dissemination and implementation and community engaged research', *Translational Behavioral Medicine*, vol. 7, no. 3, pp. 543–46. https://doi.org/10.1007/s13142-017-0527-8

Blanchard, J 2013, 'Aging in community: The communitarian alternative to aging in place, alone', *Generations*, vol. 37, no. 4, pp. 6–13.

Bourdieu, P 1986, 'The forms of capital', in J Richardson (ed.), *Handbook of theory and research for the Sociology of Education*, Greenwood Press, Westport, CT, pp. 241–58.

Browne-Yung, K, Ziersch, A & Baum, F 2013, 'Faking til you make it': Social capital accumulation of individuals on low incomes living in contrasting socio-economic neighbourhoods and its implications for health and wellbeing', *Social Science & Medicine*, vol. 85, pp. 9–17. https://doi.org/10.1016/j.socscimed.2013.02.026

Cahn, E & Rowe, J 1992, Time dollars: The new currency that enables Americans to turn their hidden resource-time into personal security & community renewal, Rodale Press, Emmaus, PA.

Carpiano, R 2006, 'Toward a neighborhood resource-based theory of social capital for health: Can Bourdieu and sociology help?', *Social Science & Medicine*, vol. 62, no. 1, pp. 165–75. https://doi.org/10.1016/j.socscimed.2005.05.020

Centre for Studies on Poverty and Social Citizenship 2019, Community-based research toolkit: A project development checklist, Carleton University, Ottawa, Canada. Viewed 28 October 2021, https://carleton.ca/cspsc/wp-content/uploads/19-159-Poverty-Community-based-research-toolkit-english-SEPT-3-2019.pdf

Chavis, D, Lee, K & Acosta, J 2008, The sense of community (SCI) revised: The reliability and validity of the SCI-2, Paper presented at the 2nd International Community Psychology Conference, Lisboa, Portugal, viewed 1 November 2021, https://dl.icdst.org/pdfs/files/f458f0f15016819295377e5a979b1893.pdf

Child, S, Kaczynski, A, Walsemann, K, Fleischer, N, McLain, A & Moore, S 2020, 'Socioeconomic differences in access to neighborhood and network social capital and associations with body mass index among Black Americans', *American Journal of Health Promotion*, vol. 34, no. 2, pp. 150–60. https://doi.org/10.1177/0890117119883583

Chou, Y & Kroger, T 2014, 'Reconciliation of work and care among lone mothers of adults with intellectual disabilities: The role and limits of care capital', *Health & Social Care in the Community*, vol. 22, no. 4, pp. 439-48. https://doi.org/10.1111/hsc.12100

Coll-Planas, L, Nyqvist, F, Puig, T, Urrutia, G, Sola, I & Monteserin, R 2017, 'Social capital interventions targeting older people and their impact on health: A systematic review', *Journal of Epidemiology & Community Health*, vol. 71, no. 7, pp. 663–72. https://doi.org/10.1136/jech-2016-208131

Collom, E 2008, Engagement of the elderly in timebanking: The potential for social capital generation in an aging society', *Journal of Aging & Social Policy*, vol. 20, no. 4, pp. 414–36. https://doi.org/10.1080/08959420802186282

Cramer, M, Lazoritz, S, Shaffer, K, Palm, D & Ford, A 2018, 'Community advisory board members' perspectives regarding opportunities and challenges of research collaboration', *Western Journal of Nursing Research*, vol. 40, no. 7, pp. 103248. https://doi.org/10.1177/0193945917697229

Dakin, K 2007, 'Timebanking and co-production: Timely tools for older adult learners', *LLI Review*, vol. 2, pp. 25–33.

Finlay, J & Kobayashi, L 2018, 'Social isolation and loneliness in later life: A parallel convergent mixed-methods case study of older adults and their residential contexts in the Minneapolis metropolitan area, USA', *Social Science & Medicine*, vol. 208, pp. 25–33. https://doi.org/10.1016/j.socscimed.2018.05.010

Golant, S 2008, 'Commentary: Irrational exuberance for the aging in place of vulnerable low-income older homeowners', *Journal of Aging & Social Policy*, vol. 20, no. 4, pp. 379–97. https://doi.org/10.1080/08959420802131437

Goris, E, Schutte, D, Rivard, J & Schutte, B 2015, 'Community leader perceptions of the health needs of older adults', *Western Journal of Nursing Research*, vol. 37, no. 5, pp. 599–618. https://doi.org/10.1177/0193945914530046

Government of South Australia 2016, *Better together: A practical guide to effective engagement with older people*, South Australia. Viewed 1 November 2021, https://www.sahealth.sa.gov.au/wps/wcm/connect/efc56a004efc69f1b7ccf79ea2e2f365/Better+Together+-+A+Practical+Guide+to+Effective+Engagement+with+Older+People.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-efc56a004efc69f1b7ccf79ea2e2f365-nwLmRMW

Greenfield, E 2014, 'Community aging initiatives and social capital: Developing theories of change in the context of NORC Supportive Service Programs', *Journal of Applied Gerontology*, vol. 33, no. 2, pp. 227–50. https://doi.org/10.1177/0733464813497994

Grootaert, C & van Bastelaer, T 2002, 'Understanding and measuring social capital: A multidisciplinary tool for practitioners', *Directions in Development*, The World Bank, Washington DC:, viewed 1 November 2021. https://openknowledge.worldbank.org/handle/10986/14098 https://doi.org/10.1596/0-8213-5068-4

Hertz, J, Koren, M, Rossetti, J, Tibbits, K & Butcher, H 2016, 'Management of relocation in cognitively intact older adults', *Journal of Gerontological Nursing*, vol. 42, no. 11, pp. 14–23. https://doi.org/10.3928/00989134-20160901-05

Hou, S & Cao, X 2021, 'Promising aging in community models in the U.S.: Village, Naturally Occurring Retirement Community (NORC), cohousing, and University-Based Retirement Community (UBRC)', *Gerontology & Geriatric Medicine*, vol. 7, p. 23337214211015451. https://doi.org/10.1177/23337214211015451

Hunter, B, Neiger, B & West, J 2011, 'The importance of addressing social determinants of health at the local level: The case for social capital', *Health & Social Care in the Community*, vol. 19, no. 5, pp. 522–30. https://doi.org/10.1111/j.1365-2524.2011.00999.x

Kim, Y, Schneider, T, Faß, E & Lochbaum, M 2021, 'Personal social capital and self-rated health among middle-aged and older adults: A cross-sectional study exploring the roles of leisure-time physical activity and socioeconomic status', *BMC Public Health*, vol. 21, no. 1, p. 48. https://doi.org/10.1186/s12889-020-10043-6

Kretzmann, J & McKnight, J 1993, *Building communities from the inside out: A path toward finding and mobilizing a community's assets*, The Asset-Based Community Development Institute, Institute for Policy Research, Northwestern University, Evanston, IL.

Lasker, J, Collom, E, Bealer, T, Niclaus, E, Young Keefe, J, Kratzer, Z, Baldasari, L, Kramer, E, Mandeville, R, Schulman, J, Suchow, D, Letcher, A, Rogers, A & Perlow, K 2011, 'Timebanking and health: The role of a community currency organization in enhancing well-being', *Health Promotion Practice*, vol. 12, no. 1, pp. 102–15. https://doi.org/10.1177/1524839909353022

Lee, C, Burgess, G, Kuhn, I, Cowan, A & Lafortune, L 2020, 'Community exchange and time currencies: A systematic and in-depth thematic review of impact on public health outcomes', *Public Health*, vol. 180, pp. 117–28. https://doi.org/10.1016/j.puhe.2019.11.011

Liljas, A, Walters, K, Jovicic, A, Iliffe, S, Manthorpe, J, Goodman, C & Kharicha, K 2017, 'Strategies to improve engagement of 'hard to reach' older people in research on health promotion: A systematic review', *BMC Public Health*, vol. 17, no. 1, p. 349. https://doi.org/10.1186/s12889-017-4241-8

Litchman, M & Edelman, L 2019, 'Perceptions of the diabetes online community's credibility, social capital, and help and harm: Cross-sectional comparison between baby boomers and younger adults', *JMIR Aging*, vol. 2, no. 2, p. e10857. https://doi.org/10.2196/10857

Main, D, Ware, G, Iwasaki, P, Burry, M, Steiner, E, Fedde, K & Haverhals, L 2012, 'Taking Neighborhood Health to Heart (TNH2H): Building a community-based participatory data system', *Preventing Chronic Disease*, vol. 9, p. E41. https://doi.org/10.5888/pcd9.110058

Nicholson, N 2012, 'A review of social isolation: An important but underassessed condition in older adults', *Journal of Primary Prevention*, vol. 33, nos. 2–3, pp. 137–152. https://doi.org/10.1007/s10935-012-0271-2

Norstrand, J & Chan, KT 2014, 'The relationship between health and community across aging cohorts', *Journal of Aging Research*, vol. 2014, p. 626097. https://doi.org/10.1155/2014/626097

Nyqvist, F, Cattan, M, Andersson, L, Forsman, A & Gustafson, Y 2013, 'Social capital and loneliness among the very old living at home and in institutional settings: A comparative study', *Journal of Aging & Health*, vol. 25, no. 6, pp. 1013–35. https://doi.org/10.1177/0898264313497508

Pasick, R, Oliva, G, Goldstein, E & Nguyen, T 2010, Community-engaged research with community-based organizations: A resource manual for UCSF researchers, San Francisco, CA. Viewed 1 November 2021, https://accelerate.ucsf.edu/files/CE/manual_for_researchers_agencies.pdf

Pérez, E, Braën, C, Boyer, G, Mercille, G, Rehany, É, Deslauriers, V, Bilodeau, A & Potvin, L 2020, 'Neighbourhood community life and health: A systematic review of reviews', *Health & Place*, vol. 61, p. 102238. https://doi.org/10.1016/j.healthplace.2019.102238

Rosenwohl-Mack, A, Schumacher, K, Fang, M-L & Fukuoka, Y 2020, 'A new conceptual model of experiences of aging in place in the United States: Results of a systematic review and meta-ethnography of qualitative studies', *International Journal of Nursing Studies*, vol. 103, p. 103496. https://doi.org/10.1016/j.ijnurstu.2019.103496

Safo, S, Cunningham, C, Beckman, A, Haughton, L & Starrels, J 2016, 'A place at the table': 'A qualitative analysis of community board members' experiences with academic HIV/AIDS research', *BMC Medical Research Methodology*, vol. 16, p. 80. https://doi.org/10.1186/s12874-016-0181-8

Sargent, L, Slattum, P, Brooks, M, Gendron, T, Mackiewicz, M, Diallo, A, Waters, L, Winship, J, Battle, K, Ford, G, Falls, K, Chung, J, Zanjani, F, Pretzer-Aboff, I, Price, E, Prom-Worley, E & Parsons, P 2022, 'Bringing transdisciplinary aging research from theory to practice', *Gerontologist*, vol. 62, no. 2, pp. 159-68. https://doi.org/10.1093/geront/gnaa214

Scrimshaw, S & Lane, S 2020, 'Culture, behavior, and health', in M Merson, R Black & A Mills (ed.), *Global health: Diseases, programs, systems, and policies*, 4th edn, Jones & Bartlett, Burlington, MA, pp. 43-74.

Siette, J, Jorgensen, M, Nguyen, A, Knaggs, G, Miller, S & Westbrook, J 2021, 'A mixed-methods study evaluating the impact of an excursion-based social group on quality of life of older adults', *BMC Geriatrics*, vol. 21, no. 1, p. 356. https://doi.org/10.1186/s12877-021-02295-7

Spinelli, G, Weaver, P, Marks, M & Victor, C 2019, 'Making a case for creating living labs for aging-in-place: Enabling socially innovative models for experimentation and complementary economies', *Frontiers in Sociology*, vol. 4, p. 19. https://doi.org/10.3389/fsoc.2019.00019

Stampfer, O, Mittelstaedt, G, Vásquez, V & Karr, C 2019, 'Guidance for genuine collaboration: Insights from academic, tribal, and community partner interviews on a new research partnership', *International Journal of Environmental Research and Public Health*, vol. 16, no. 24. https://doi.org/10.3390/ijerph16245132

Stewart, M, Boateng, B, Joosten, Y, Burshell, D, Broughton, H, Calhoun, K, Huff Davis, A, Hale, R, Spencer, N, Piechowski, P & James, L 2019, 'Community advisory boards: Experiences and common practices of clinical and translational science award programs', *Journal of Clinical and Translational Science*, vol. 3, no. 5, pp. 218–26. https://doi.org/10.1017/cts.2019.389

Thomas, W & Blanchard, J 2009, 'Moving beyond place: Aging in community', *Generations: Journal of the American Society on Aging*, vol. 33, no. 2, pp. 12–17.

Uphoff, E, Pickett, K, Cabieses, B, Small, N & Wright, J 2013, 'A systematic review of the relationships between social capital and socioeconomic inequalities in health: A contribution to understanding the psychosocial pathway of health inequalities', *International Journal for Equity in Health*, vol. 12, p. 54. https://doi.org/10.1186/1475-9276-12-54

Vanleerberghe, P, De Witte, N, Claes, C, Schalock, R & Verté, D 2017, 'The quality of life of older people aging in place: A literature review', *Quality of Life Research*, vol. 26, no. 11, pp. 2899-907. https://doi.org/10.1007/s11136-017-1651-0

Village to Village Network 2022, *Village Model*, viewed 3 January 2022. https://www.vtvnetwork.org/content.aspx?page_id=22&club_id=691012&module_id=248578

Wright-Bevans, K, Walker, A & Vosper, E 2020, 'Why disadvantaged older adults engage in community consultation: A world café study', *Journal of Community & Applied Social Psychology*, vol. 30, no. 6, pp. 593–602. https://doi.org/10.1002/casp.2467

Yiengprugsawan, V, Welsh, J & Kendig, H 2018, 'Social capital dynamics and health in mid to later life: Findings from Australia', *Quality of Life Research*, vol. 27, no. 5, pp. 1277–82. https://doi.org/10.1007/s11136-017-1655-9

Zhu, Y, Zhou, Y, Long, C & Yi, C 2021, 'The relationship between internet use and health among older adults in China: The mediating role of social capital', *Healthcare* (Basel), vol. 9, no. 5. https://doi.org/10.3390/healthcare9050559

# Appendix 1

Summary of two pilot projects funded by CCTSI

| Characteristics | First Project | Second Project |
|---|---|---|
| Brief Description | Aims:<br>• Examine if there is a positive association between social capital and health among older adults, as well as if this association varies by community SES.<br>• Determine if and how ageing in community programs promotes social capital among older adults in their communities.<br>• Identify and adapt instruments to measure social capital among older adults and its impact on their health. | Aims:<br>• Understand the sustainability (i.e. perceived assets and barriers) of timebanking among older adults.<br>• Evaluate the suitability (i.e. socio-demographic characteristics and perceived benefits associated with health) of timebanking among older adults.<br>• Disseminate and discuss our findings during a combined meeting with our community organisations. |
| CAB Input | • No | • Yes, as well as feedback from seven older adult service organisation partners |
| Sample/ Participants/ Incentives | • Older adults aged 55+ in the Denver, Colorado metropolitan area<br>• n=47, across four communities<br>• Provided lunch (later snacks to shorten our meetings)<br>• Provided $4 USD public transportation voucher (later $5 USD grocery cards) | • Randomly sampled national and international timebanks from TimeBanks USA (http://community.timebanks.org/) and hOur World Exchange (http://www.hourworld.org/) directories, using timebank coordinator surveys (n=33)<br>• Provided Colorado site leaders $50 USD gift cards<br>• Older adults aged 55+ participating in three urban and two rural Colorado timebanks (n=54)<br>• Provided older adult participants $10 USD grocery cards |

| Characteristics | First Project | Second Project |
|---|---|---|
| Data Collected | • We collected qualitative community meeting and quantitative survey data from four sites across low, middle and high community SES levels to assess associations between social capital and health among older adults.<br>• We collected quantitative and qualitative data from:<br>  • A socio-demographic and health survey<br>  • Sense of Community Index-II (SCI-2) survey (Chavis, Lee & Acosta 2008)<br>  • A modified World Bank's Social Capital Assessment Tool (SOCAT); (Grootaert & Bastelaer 2002)<br>  • A modified Asset Based Community Development (ABCD) Individual Capacity Inventory (McKnight & Kretzmann 1993). | • We collected qualitative data from national and international timebank coordinators on:<br>  • Year the timebank was founded<br>  • Recruitment strategies<br>  • Financial resources<br>  • Perceived factors relating to the assets and barriers of sustaining timebanks<br>  • Perceived benefits provided to members.<br>• We collected quantitative data from Colorado participants from:<br>  • A socio-demographic and health survey<br>  • The Geriatric Depression Scale (GDS-15) survey (Sheikh & Yesavage 1986)<br>  • The Lubben Social Network Scale (LSNS-6) survey (Lubben et al. 2006)<br>  • Sense of Community Index-II (SCI-2) survey (Chavis, Lee & Acosta 2008). |
| Outcomes | • Self-reported health<br>• Health service use | • Self-reported health<br>• Health service use<br>• Depressive symptoms (GDS-15)<br>• Social isolation (LSNS-6) |
| Analysis | • We analysed data using descriptive statistics and content analyses. | • We assessed qualitative characteristics by old vs. new and Colorado vs. National and International timebanks.<br>• We analysed quantitative data using chi-square and ANOVA tests to compare urban vs. rural and SCI-2 by our health measures for timebank members. |

CCTSI (The Colorado Clinical and Translational Sciences Institute, a National Institutes of Health Clinical and Translational Sciences Awards program)