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Altered place engagement since COVID-19: A multi-method study of community participation and health among older americans

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Abstract

Little is known about longer-term changes to community participation since the COVID-19 pandemic onset and potential implications for health and wellbeing in later life. This multi-method investigation analyzes national data from the COVID-19 Coping Study. Statistical analyses of survey data (n = 1,630; mean age 67.9 years; data collected April/May 2022) identified that adults residing in the US still tended to stay inside their homes more often since the pandemic onset. Overall, participants decreased their engagement with amenities such as eateries, gyms, and arts and cultural sites. Reflexive thematic analysis of semi-structured in-depth interviews (n = 57; mean age 70.7 years; data collected May-July 2021) identified altered community participation with perceived long-term impacts on physical, mental, and social health and wellbeing. The results provide novel insights about the critical nature of 'third places' to support later life, and policy

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CRediT authorship contribution statement

Jessica Finlay: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. **Gabriella Meltzer:** Formal analysis, Investigation, Validation, Writing – original draft, Writing – review & editing. **Brendan O'Shea:** Data curation, Methodology, Investigation, Software, Formal analysis, Validation, Visualization, Writing – original draft, Writing – review & editing. **Lindsay Kobayashi:** Data curation, Funding acquisition, Project administration, Supervision, Validation, Writing – review & editing.

Declaration of competing interest

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Supplementary materials

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implications to strengthen community environments. Investment in outdoor, well-ventilated, and distanced third places may support wellbeing.

Keywords

Health geography; Aging; Place attachment; Social infrastructure; Third places; Wellbeing

1. Introduction

The COVID-19 pandemic disrupted civic life and upended daily routines. Many places that provide essential services and support socialization, care, activity, and interpersonal connection were temporarily or permanently closed, and/or operated under tight restrictions (Giebel et al., 2021; Gostin and Wiley 2020; Greenberg et al., 2020). Avoiding crowded and social places, isolating at home, and transitioning to online services and amenities profoundly impacted older adults (Piette et al., 2020; Adepoju et al., 2021; MacLeod et al., 2021; Lee et al., 2022; Hayden et al., 2022; Cannon et al., 2023; Finlay et al., 2022, 2023a,b). Studies have found differences in older adults' psychological wellbeing and quality of life during COVID-19 on the basis of age, gender, race/ethnicity, educational attainment, employment status, comorbidities, and level of urbanicity (e.g., Caycho-Rodriguez et al., 2021, 2022; Henning-Smith et al., 2023; Joseph et al., 2023; Webb and Chen, 2022). The pandemic reinforced and expanded aging inequalities based on intersecting structural axes of gender, race/ethnicity, class, ability, and sexuality. Furthermore, it exacerbated spatial inequalities whereby underserved urban and rural communities already affected by losses of key services, amenities, and other third places were disproportionately burdened by COVID-19 (Buffel et al., 2021).

Pre-pandemic qualitative research highlighted the importance of everyday 'third place' engagement among older adults such as frequenting cafes, bakeries, gyms, public parks, and grocery stores. Third places are public and commercial sites outside of home (first place) and work/school (second place) that support opportunities for physical activity, social support, community cohesion, purpose, self-identity, and access to essential services and care (Oldenburg, 1999; Klinenberg, 2018; Finlay et al., 2019). Third place engagement can enhance social participation and buffer against social isolation and loneliness (Gardner, 2011; Finlay et al., 2020; Torres, 2019). While quantitative literature on this topic is scarce, one US-based study by Zhong et al. (2020) identified supermarkets, restaurants, sidewalks, and pharmacies as the most common places for social interactions among older adults. Participants also socialized in gyms and recreation centers, post offices and banks, and community and senior centers. Community participation in social activities and the development of supportive social ties is linked to higher quality of life and better physical, mental, and cognitive health (Lane et al., 2020). Conversely, social isolation and loneliness are associated with increased risk for mortality, depression, dementia, loss of physical mobility, cancer, and cardiovascular disease (Donavan and Blazer, 2020; National Academies of Sciences, Engineering, and Medicine, 2020; Taylor, 2021; Office of the Surgeon General, 2023).

Place engagement at a basic level involves everyday experiences and emotions. It blends two situation-specific elements: *personal place identification* (the way in which we uniquely experience and react to environments shaped by multiple factors including physiology, life history, worldview, and personality) and the *identity of places* (how environments are designed, inhabited, and modified over time - such as a church that has a cultural meaning independent and transcendent of individuals Finlay and Rowles, 2021; Rowles, 2018). Over time, positive place engagement experiences and emotions can facilitate *place attachment* (rich cognitive and affective ties to a particular place) and *'being in place'* (a sense of belonging, purpose, and meaningful connection Hayden, 1995; Relph, 1976). 'Being in place' is always fluid and precarious. Feeling 'out of place' is linked to discomfort, alienation, hostility and isolation (Finlay and Rowles, 2021). While there is abundant literature on varying abilities to form place attachments and a sense of 'being in place', much less attention is paid to potential losses of place engagement and diminished place attachments. This knowledge gap is particularly acute given a widespread and rapid societal trauma like the COVID-19 pandemic (Finlay et al., 2023b).

There are persistent concerns about secondary impacts of the COVID-19 pandemic beyond immediate morbidity and mortality from the virus. These include reduced physical activity, diminished access to basic necessities, displaced non-COVID-19 healthcare, and increased social isolation (Douglas et al., 2020). During the pandemic, public health authorities advised older adults to stay at home except for essential activities and avoid social contact (MacLeod et al., 2021). The sudden withdrawal of community participation exacerbated concerns about social isolation and loneliness among older adults. Pre-pandemic, nearly one-quarter of community-dwelling US adults aged ≥65 (approximately 7.7 million) were considered socially isolated, and 4 % (1.3 million) were severely socially isolated (National Academies of Sciences, Engineering, and Medicine, 2020; Cudjoe et al., 2020). These figures are estimated to be even higher since the pandemic (Piette et al., 2020; Adepoju et al., 2021; Office of the Surgeon General, 2023).

Research identifies variation in altered place engagements and implications for health and wellbeing in early stages of the COVID-19 pandemic, particularly among the oldest old, those living alone, and individuals with chronic health conditions (Bailey et al., 2021; Chen 2021; Finlay et al., 2023a,b; Ottoni et al., 2022; Garcia Diaz et al., 2023; Xie et al., 2021). Less is known about *longer-term* changes to older adults' third place engagement and how these changes might vary by broader sociodemographic and geographic characteristics (Cannon et al., 2023; Bustamante et al., 2022). This multi-method investigation analyzes national data from the COVID-19 Coping Study to examine altered place engagement among older Americans. The quantitative findings describe altered daily routines and behavior changes two years after the pandemic onset. The qualitative findings provide a more in-depth, nuanced understanding of how altered community participation has impacted perceived physical, mental, and social health and wellbeing beyond the acute first stage of the pandemic in the US. Novel results provide important insights into the critical nature of third places to support later life and opportunities to strengthen community environments during times of widespread tension and isolation.

2. Data and methods

We analyzed quantitative and qualitative data from the COVID-19 Coping Study, a national, longitudinal cohort study of older adults living in the US. Details on the study design and data collection are described in Kobayashi et al. (2021), Finlay et al. (2023a,b), and Appendix A1. The University of Michigan Institutional Review Board approved the study protocol (HUM00179632) , and all participants provided informed consent.

Qualitative data collection started in May 2021 when approximately 265 million SARS-CoV-2 vaccine doses had been administered in the US (Centers for Disease Control [CDC], 2023a). By the time quantitative data collection had begun in April 2022, the number of doses administered in the US had more than doubled, a majority of Americans aged 50 and older were fully vaccinated against COVID-19, and over 70 % of Americans were living in areas with low COVID-19 community transmission levels (CDC, 2023b). After 14 months of required mask-wearing on public transportation, the Transportation Security Authority and airlines dropped the mask mandate on April 18, 2022 (Kelleher, 2022).

We conducted a convergent parallel multi-method study (Fig. 1; Creswell et al., 2011). While the qualitative data was collected approximately 9–12 months before the quantitative data, we analyzed both datasets simultaneously. The quantitative analysis described whether older adults spent less, more, or the same amount of time in a variety of community settings compared to before the pandemic. The qualitative analysis investigated how altered place engagement impacted perceived health and wellbeing. We then compared the quantitative and qualitative findings to seek areas of convergence, divergence, and deepen understanding.

2.1. Quantitative

2.1.1. Study sample—The COVID-19 Coping Study baseline sample was collected April/May 2020. Of the 6938 baseline sample participants, 4401 were eligible for monthly follow-ups conducted through April/May 2021 and a 2-year follow-up conducted in April/May 2022. The current quantitative analysis was restricted to the 24-month follow-up, which had a sample size of 1641 (24 % of the baseline sample). Participants were eligible if they had non-missing data on any of 7 outcomes ($N = 1639$), had population and attrition weight data ($N = 1630$), and had non-missing data on any demographic, social, and health-related covariate. This yielded an analytical sample of 1630 participants.

2.1.2. Outcome: place engagement—Participants were asked a series of questions: *"Compared to before the coronavirus pandemic (March 2020), have you changed how often you…" "spend time inside your home?", "go to the grocery store?", "eat or drink in a restaurant, café, or bar?", "exercise in outdoor facilities?", "exercise in indoor facilities?", "visit an arts or cultural site?", "attend religious services outside your home?"*. Response options were "Not relevant," "Less often," "About the same," and "More often". We constructed categorical outcome variables for each type of place, indicating whether the participant spent less, more, or about the same amount of time in each place. Participants who responded "Not relevant" were coded as missing.

2.1.3. Covariates—Previous research has identified differential COVID-19 burden according to sociodemographic and health-related characteristics (e.g., Stokes et al., 2020; Karmakar et al., 2021; Udell et al., 2022). Therefore, we assessed whether participants spent more, less, or the same amount of time in each place overall, and according to the following covariates: age (55–64; 65–74; ≥75), sex (male; female), race/ethnicity (non-Hispanic White; racial or ethnic minority), living alone (no; yes), educational attainment (some college or less; college or university degree; postgraduate or professional degree), employment status (employed; unemployed; retired), and self-reported number of diagnosed health conditions (0–1; ≥2). We selected individual characteristics based on findings from previous research, as well as factors that are plausible drivers of place-engagement behaviors within the context of COVID-19. All covariates were measured at baseline in April/May 2020, except for employment status and living alone, which were measured in the 24-month follow-up survey in April/May 2022.

2.1.4. Statistical analysis—For this descriptive analysis, we characterized the quantitative sample with univariate statistics and estimated the unadjusted population and attrition-weighted prevalence and 95 % confidence intervals (CIs) for changes in engagement with each place overall. Because individuals experience place attachment distinctly based on a variety of individual and contextual factors, we additionally reported univariate statistics according to the demographic, social, and health-related characteristics described above. Population weights ensured that the study population was representative of the general US population aged ≥55 based on age, sex, race/ethnicity, education, marital status, and US census region of residence, and attrition weights accounted for dropout since cohort baseline. Statistical analyses were performed using Stata/SE 16.0 (StataCorp, College Station, TX).

2.2. Qualitative

2.2.1. Semi-structured interviews—In April-July 2021, a subsample of 57 COVID-19 Coping Study par ticipants conducted semi-structured interviews by telephone or video call. Investigators used stratified random sampling (Bhardwaj, 2019) to select from a pool of 4211 eligible participants. In order to enhance representation of racially, socioeconomically, and geographically diverse older adults, individuals who identified as older, male, a racial or ethnic minority, having less than a college degree, and living outside of Michigan were oversampled from the participant pool (Appendix A2). The semi-structured interview questions investigated impacts of the COVID-19 pandemic on everyday life; sources of stress; silver linings; relationships; grief and loss; places, spaces and communities; coping strategies; and thoughts about the future (Supplementary Table A1).

2.2.2. Reflexive thematic analysis—All interview data were professionally transcribed and organized in the qualitative analysis software NVivo. Using reflexive thematic analysis (Braun and Clarke, 2021; Weil, 2021), authors JF and GM immersed themselves in the data to enable new insights to emerge and inductively analyze participant statements without imposing pre-existing frameworks or analytical preconceptions.

We employed six phases of reflexive thematic analysis identified by Braun and Clarke (2021) to investigate our research question: *how has altered place engagement since the pandemic onset impacted perceived health and well-being?* First, authors JF and GM read and reread data to become familiar with the content, and recorded brief analytic notes. We then met to generate codes and conduct initial coding. We compared interpretations and points of divergence in regular meetings to refine and clarify codes, and collate code labels. After coding the entire dataset, JF, GM, and BO met to identify and compile shared patterned meanings across the dataset. We checked initial themes in relation to coded extracts and the full dataset to ensure they highlighted the most important patterns across the dataset in relation to our research question. Next, we ensured that each theme was distinct, clearly demarcated and named, and built around a strong core concept. Finally, JF and GM wrote results combining our analytical narrative with compelling data abstracts. We enhanced methodological rigor through peer debriefing, negative case analysis, member checking, author reflexive journaling, and clear audit trails (Marshall and Rossman, 2016).

3. Results

3.1. Quantitative results

The mean age of participants was 68 years old, 69 % identified as female, and 93 % were Non-Hispanic White (Table 1). Most of the sample was retired (67 %) and had at least a college degree (86 %).

Study participants tended to stay home more often since the COVID-19 pandemic began (59.1 %; Table 2; Fig. 2). A small portion (6.9 %) stayed home less often. The greatest decrease in engagement was observed in places of leisure such as arts and cultural sites (62.5 %) and dining establishments (74.6 %) (Table 2; Fig. 2). Change in exercise facility utilization was not consistent across all types of facilities. While over half of participants exercised in indoor facilities less often, less than one-quarter exercised in outdoor facilities less often and 11 % increased their amount of time spent in outdoor exercise facilities (Table 2; Fig. 2). Amongst all places, outdoor exercise facilities had the least change in engagement (Table 2; Fig. 2).

We identified few statistically significant relationships between patterns of place engagement and individual demographic, social, and health characteristics. Compared to males, a higher percentage of females began frequenting places *less often* since the pandemic onset. Specifically, a higher proportion of females decreased the frequency of going to the grocery store (female = 50% vs. male = 29 %), eating or drinking in restaurants (female = 81% vs. male = 66 %), exercising indoors (female = 64% vs. male = 48 %), visiting arts or cultural sites (female = 70% vs. male = 52 %), and attending religious services outside one’s own home (female = 61% vs. male = 44 %; Supplementary Tables B1–3, B5–7). With the exception of sex differences, place engagement since the pandemic onset was not significantly associated with demographic, social or health characteristics (Supplementary Tables B1–7).

3.2. Qualitative results

The mean age of interview participants was 70.7, with 44 % identifying as female (Table 3). Over half identified as a racial or ethnic minority (56 %), lived with others (61 %), and were retired (60 %).

We identified physical, mental, and social health as topic summaries regarding how altered place engagement since the pandemic onset impacted perceived wellbeing.

3.2.1. Physical health

3.2.1.1. Closure of recreational facilities reduced physical activity.: Many respondents reflected on how the closure of recreational facilities reduced opportunities for regular physical activity. Fiona (70y, Black, urban) said: “Before the pandemic, I did water aerobics, I did Zumba, and I did regular aerobics. I did exercise five out of seven days, so that all stopped.” Similarly, Walter (92y, White, urban) reflected: “In March of 2020 [the pandemic began to affect me]. I’m playing basketball a couple of times a week for health, fun, exercise, friendship, and so forth, but they closed the gym.”

Even as restrictions began to lift, recreational facilities remained inaccessible to older adults whose particular needs were unmet. Fiona described attending a water aerobics class:

The senior class was not offered. I did try to go to just the adult class, but the adult class is not subsidized in terms of cost like the senior class, so it costs twice as much. I wasn’t willing to do that, so I have not been back to water aerobics, which I miss a lot.

3.2.1.2. Challenges of compensating for gyms.: Many participants tried to compensate for the closure of facilities by engaging in physical activity at home through online classes, exercising, or purchasing exercise equipment. However, participants often felt that the experience was not as fulfilling or motivating. Maryann (61y, Hispanic, urban) used to take yoga classes at her local senior center until they were discontinued and she was forced to practice yoga online. She got sick and felt unmotivated at home: “maybe if I went to a class, it would push me to get back into it more… Having to get up out of the house, and go somewhere, it just sort of gets you going.” Keith (73y, Multiracial, urban) recalled how he and his wife had planned on exercising together outdoors once their local YMCA closed. He reflected:

I’ve tried to [exercise outside] and it just didn’t work for me. I was going to walk with my wife. And we did it about twice and I couldn’t do it. Well, first of all, I couldn’t keep up with her. But second of all, it was too scary for me to be out there [because of poor sidewalk quality].

Fred (76y, White, urban), who bought equipment for his house, commented that, “in the case of a gym, there are ambient connections that I probably wasn’t aware of because we did buy some exercise equipment to use at home as a substitute and hardly ever used it… Something about the location is important.”

3.2.1.3. The toll of reduced physical activity on overall health.: Respondents recognized the impact of reduced physical activity on their overall health and psyche. Clara (66y, Multiracial, urban) felt that, “just sitting all day has not been good for my body, my health.” Lisa (77y, Asian, urban) observed:

The Y[MCA] closed down and so for several months I didn’t do anything and now my stamina is way down. So I did a Zoom Silver-Sneakers workout. It was for eight minutes. I could go four minutes without sitting down. So now I’ve got to work my way back up to where I can actually go to the Y because a few classes have resumed but I am not up to doing those classes anymore.

3.2.1.4. Opportunities for continued or greater physical activity.: Despite the difficulties posed by facility closures, several respondents discussed opportunities to engage more in outdoor, online, and at-home activities. Jose (62y, Hispanic, urban), for instance, was able to continue playing softball outside: “Even through the pandemic, there was a group of us that went out three times a week… We all wore masks and we stayed apart from each other, which is baseball.” Nancy, (67y, American Indian/Alaska Native [AI/AN]) lived in a rural area where she was able to take advantage of the outdoors for physical activity: “I like to walk and then we have a weight station out in the barn and a treadmill downstairs…Also there’s a dead-end road that I can go down. So that’s not too bad, but I’ve never used a gym.”

Others were motivated socially to walk more outside during newfound free time. Margaret (79y, Hispanic, urban), commented that, “Most of my friends, we do about a five-mile, but I have one friend that we do usually six to 10 miles. And I think I’ve walked more with her this year than I would have otherwise, because she hasn’t been working, and she walks double what I walk.”

Online communities encouraged some participants to nurture their health. Donna (66y, White, rural), for example, has: “a twice a week morning Zoom meditation with people around the world, and that has really helped.” Lynn (67y, Hispanic, urban) joined a Facebook support group:

I have a lot of online friends and kind of an online community. So one of them started an online closed Facebook for people who wanted to work out and exercise during the pandemic and keep our spirits up that way…So when they started that group, I joined up and you can set your own personal goals. And I said, “My goal is going to be to get outside and take a walk, even if it’s a short one every single day that I can, and not hardly take any breaks on that. And I’ve kept that up for more than a year now… The thing about it is just not me doing it, but being able to post to the group every day.

Several participants noted that the pandemic had positive effects on their physical health. Linda (68y, White, urban) “did manage to lose weight, so that was a perk.” She continued: “We have some exercise equipment here. I have a bike and we have some exercise balls and things like that. Weights.” Vernon (79, White, urban), attributed his ability to stay in shape to “gardening or putting in flower beds.”

3.2.1.5. Obstacles and privileges based on individual circumstances.: Some participants recognized varying challenges and privileges to maintain their health. Barry (73y, White, urban), for example, expressed:

We are fortunate in that we have the resources to be able to adjust perhaps to a greater degree than others. We were able to travel to our house in Florida where we could be out of doors in the colder months. And while out of doors we were doing many more things than you can do in Wisconsin. My wife is a good pickleball player. I enjoy the game. We both golf, we both hike, we're birdwatchers…So I think that puts me and my wife in a class that's different from a lot of people, the people who could not get away and were confined to houses perhaps in close quarters.

Similarly, Bruce (78y, Multiracial, urban) commented that his ability to exercise was largely due to the space afforded by larger homes in his relatively affluent neighborhood where he and his friends were "still able to be socially distanced inside the garage." Cecilia (60y, Black, urban) recognized her privilege to shift to online exercise with her group of friends, all of whom were able to afford the same high-end equipment:

I have a group of girlfriends and we all have [stationary bike] Pelotons. So, we would pick a ride and a day at a time and we'd all get on at the same time…It was like virtual working out together…We were also incredibly lucky in that we basically have a full gym in our house. … If you don't have access to that, you're going to lose your mind.

Some, however, commented on personal difficulties maintaining physical health and fitness. This was particularly the case for those facing chronic health issues. Roy (73y, Black, urban), a stroke survivor, said:

The difficulty for me outside is that, maybe a lot of people don't realize how much sidewalks and streets are not really flat. And that becomes a problem with my hips and my legs when I have to deal with uneven surfaces. I used to also go to the county rec building where they had an indoor track. Flat padded track where I'd walk for a mile, two miles at a time.

3.2.2. Mental health

3.2.2.6. Stress frequenting places in-person.: The most recurrent source of diminished mental health was anxiety and nervousness about COVID-19 transmission in public places. Wendy (68y, Asian, urban) shared:

I realized pretty quickly from following the news that I was in the high-risk group… So I became a recluse really, really quickly and felt that I had to, at every cost, survive because I have a son and he needed me… That's when the anxiety and nervousness started to mount.

Participants who were older, racially and ethnically diverse, and/or had multiple health conditions noted particularly high anxiety. Clara (66y, Multiracial, urban), for example, found it "a real source of stress" to shop for essentials given her obesity, asthma, and other health conditions.

In order to reduce their anxiety and fears, participants adjusted how, when, and where they went to minimize risk. Special shopping hours for older and immune-compromised patrons early in the pandemic were highly valued. Online ordering and delivery helped to reduce anxiety about in-person exposure, though it could produce other technological frustrations. Participants such as Lisa (77y, Asian, urban) valued virtual activities, especially church services:

You find new avenues. There is plenty online. A lot of Bible teachers online and wonderful music… I'm in a prayer fellowship and the ladies feel very free to share the things that they are really struggling with and also, when you see the way they're struggling with their issues and the outcome, it's very comforting.

Vaccination enabled some cautious returns to in-person engagement and reduced anxiety. Bruce (78y, Multiracial, urban) expressed: "It's now at a point where I and all the people I'll be in contact with have been vaccinated. I'm re-emerging into what would be my regular life, but cautiously."

3.2.2.7. Mourning lost places.: Participants discussed feeling unhappy because they lost their way of life and place-based routines. Brenda (74y, Multiracial, urban) felt "most definitely lonely and sad" given that her life "came to a screeching halt" with the pandemic onset. Fiona (70y, Black, urban) who lost her part-time job at the local library, expressed: "I don't know that anything's been really happy [during the pandemic]. I am tired of being at home." Vernon (79y, White, urban) found it "mildly depressing, mentally, just knowing you can't go out and do whatever you normally did [pre-pandemic]." Participants frequently mourned the loss of eating out ("it is depressing… drive-through just doesn't cut it" [Linda, 68y, White, urban]), recreational sports, arts and cultural activities, and community volunteering. Several politically right-leaning participants felt both grief and anger about local business closures because they did not agree with state public health policies or enforcement.

The inability to frequent therapeutic places heightened emotional distress. For Roy (73y, Black, urban), eating out was a relief and escape from a challenging home situation:

I used to go out to eat at least twice a month with a friend. And we haven't been to a restaurant in over a year now. So that's been hard for me. I live with my brother. So that was one of the ways I'd get away from my brother. My brother has emotional issues… So that was the one time when I was able to have time away from home and not be bothered with him.

Clara (66y, Multiracial, urban) shared, "libraries are just a refuge for me" and the mental toll it took to not sit for hours reading. Clark (69y, White, urban) missed the golf course as a place to vent with friends who were also navigating bodily declines and stressors of older parents in nursing and hospice care. Gregory (71y, White, urban) missed going to museums and concerts which "are good for the soul."

3.2.2.8. Boredom given lack of entertainment and stimulation.: "The shops were all closed. Even grocery stores were semi-closed. It was extremely restrictive and, more

importantly, psychologically, it was very difficult to go through," expressed Meera (93y, Asian, urban). Her sentiments mirrored those of many participants who lamented the lack of opportunities to "get out of the house" (Clark, 69y, White, urban). Cecilia (60y, Black, urban) particularly missed restaurants:

It wasn't just the food. It was meeting someone for dinner, getting ready to go out to dinner, getting dressed up to go to dinner, not wearing the pair of sweatpants that you wore yesterday and the day before and the day before. It was more the whole experience… I used to love the subway because the subway was the great equalizer in [my city].

Patricia (67y, Hispanic, urban) tried ordering takeout, but found that it was "not the same as going out. When you're older, that's your entertainment." Clark (69y, White, urban) shifted to watching educational lectures virtually, but similarly explained that it was not the same: "It's almost like watching it on television as opposed to being in a live performance." Shirley (72y, White, urban) noted perceived cognitive decline given her lack of activity and engagement: "I can't seem to concentrate as well as I did before."

3.2.2.9. Newfound places to support mental wellness.: A minority of participants found new in-person and online third places to boost their mental wellbeing. Eloise (83y, White, suburban), who missed playing cards, now volunteered in a vaccine clinic at her church. She also joined an online study group and lifelong learning courses, and "attended far more things being cooped up at home." Clara (66y, Multiracial, urban) re-engaged in Reiki training and energy medicine. Keith (73y, Multiracial, urban) shared: "I've been lucky both my [Alcoholics Anonymous] and Al-Anon groups have been on Zoom. So, I haven't missed meetings. And I've had those people to talk to, which has been a godsend."

While Wendy (68y, Asian, urban) missed the chit-chat during coffee breaks and offhand funny comments, she was happy that many of her senior center classes transitioned to Zoom. Sean (59y, Hispanic, urban) "learned a lot of new things" through online courses, while Mark (73y, Other, urban) appreciated online concerts: "You don't get an interview with Yo-Yo Ma after he's given a concert [in-person]. But on Zoom you do!" Alex (61y, Asian, suburban) hoped that virtual engagement would continue indefinitely: "Zoom is my best friend…. I do hope that we do keep some things from COVID."

3.2.3. Social health

3.2.3.10. Isolation and missed collective enjoyment.: Participants widely expressed lack of socialization since the pandemic onset. Shirley (74y, White, urban) lamented:

[My friends and I] would get together every month for a luncheon at different restaurants. We had been doing that for 15 years. There would be 10 or 15 of us that would go. We haven't gone since the pandemic, and that I *do* miss.

Raj (78y, Asian, urban) felt that the loneliness and isolation "had a very big effect" on his wellbeing:

When the isolation started, we're suddenly required not to see or meet anybody. There was a drastic change in social life. Cannot go to public places like the library, the gymnasium, or

recreational facilities. I play a lot of indoor tennis. I cannot go there… Everybody's scared of everybody else.

Participants who were older, lived alone, resided in senior living facilities, and/or had multiple health conditions felt particularly isolated. Meera (93y, Asian, urban) reflected on experiences in her community retirement home:

Our facility literally locked down both of our gates. We were strictly told not to get out of our own apartments. All of our major areas where we normally socialize were all closed down… What hit us the most was socialization… We were so devoid of company and socialization. We could not talk… It was lonely to the extent that some of our residents here who were kind of at the edge had to be transferred to memory care or assisted living because they were so lonely and they just were not able to take it anymore.

While isolation often diminished after second immunization, it had not for Laura (59y, Black, urban): "I pretty much considered myself a loner, and I didn't realize just how much contact I had with people until the pandemic came along and I had to stay inside… I neglected my mental health a bit because I felt isolated and I still do to this point."

Strong social ties with family and friends diminished for many participants given the inability to gather in places. Fiona (70y, Black, urban), deeply missed her "beauty shop babes" group of women ages 70+ who gathered weekly at the hairdresser. Linda (68y, White, urban), lost face-to-face time with her friends while eating out and gossiping. For Earl (75y, White, urban):

I miss just being able to do life, the book group and the ROMEOs [Retired Old Men Eating Out]. We used to go out, ROMEOs, we used to go out to a restaurant or a pub every Thursday…I would have a draft pint. And just great conversation. And in the meantime, one of our ROMEOs died this past year and we weren't able to go to a service, see the family. That was tough.

Lynn (67y, Hispanic, urban) shared: "That evening [at a brewery] was the last time that I hugged someone. When the pandemic started, it was that night. That was the last time. March 12th, 2020."

In addition to deep social ties anchored in third places, participants also missed casual and spontaneous encounters anchored in community spaces. Wendy (68y, Asian, urban), who identified as an introvert, missed low-stress social contact with friendly grocery store staff. Clara (66y, Multiracial, urban) expressed:

One of the reasons I *did* grocery shop two or three times a week was just [for] friendly banter. I know some of the people because I go so frequently, and so I missed that. They weren't necessarily friend interactions, but they were your normal, friendly interactions.

Linda (68y, White, urban), similarly missed "just being able to go in the grocery store and converse with somebody… You can strike up a conversation over celery… It's been really kind of tough because you don't stop and talk to people anymore." For Larry (72y, White, suburban): "Bumping into people in [the grocery store], for a while was part of my social

life. You run in for 15 min, and you come out an hour and a half later, and the ice cream is already melted."

Participants missed collective enjoyment and the ease of togetherness anchored in third places pre-pandemic. "I'm happy being in a restaurant surrounded by people… Even if I go out to dinner and don't talk to anybody, there is a companionship to it, and a feeling of community," shared Marilyn (79y, Hispanic, urban). Lynn (67y, Hispanic, urban) missed the collective excitement of professional women's sports: "just that atmosphere and high fiving each other." Older and White men such as Jack (68y, White, urban) missed concerts: "It's just the whole feeling of being surrounded by the music and all these people who are enjoying it, feeling a big part of that."

When participants did frequent services and amenities in-person, many noted changed interactions since the pandemic onset. Bruce (78y, Multiracial, urban) explained:

When I *do* go to the grocery store… I maximize the distance between myself and others… I go to an alteration store, dry cleaning, places like that, where [pre-pandemic] I might have gone in and stood inside and leaned over the counter and had a conversation, [now] it's mostly at the doorway or at some distance.

Participants missed the chit-chat, smiles and pleasantries exchanged, and ease of conversing without a mask. They now felt stressed and anxious frequenting places. Lynn (67y, Hispanic, urban) rushed to depart with minimal interaction:

I live by myself, and it was like, "I don't want to be completely isolated where I don't see anybody, even if it's just somebody at the cash register or something." So, I still went to the grocery store and would zoom through the grocery store with what I needed. Get in, wear a mask. Sometimes I wore a double mask. [I learned] to get in and out really quick. You learn how to shop very efficiently. You didn't look at anybody.

3.2.3.11. Shifts to online social engagement.: Participants used Zoom calls, FaceTime, texting, phone calls, and social media to replace in-person socialization. This "relieved the pressure of isolation" for Barry (73y, White, urban). Cynthia's (79y, Other, urban) civic group had shifted to online meetings, which "worked out very well and to some extent I like it even better." Cynthia enjoyed being able to have coffee and eat dinner with friends and community members on Zoom. Lynn (67y, Hispanic, urban) began watching a drag race show virtually with "fun, younger, online friends." They explained:

So even though I wasn't seeing people in person, I felt I had a group of friends surrounding me who were younger. They love to have fun, life hasn't beaten them down yet, you get what I'm saying? And they just keep my spirits up.

Multiple participants, however, refused to use social media platforms or online calling. Larry (72y, White, surburban) and Rodney (73y, Black, urban) objected to Zoom, while Mervin (78y, Multiracial, urban), Glenn (68y, Other, urban), Kyle (59y, Asian, urban), and Catherine (57y, AI/AN, urban) avoided Facebook and other social media platforms. Multiple participants found online engagement harder and less fulfilling.

Participants also noted that expression in online community platforms was more political, harsher, and less civil. Brenda (74y, Multiracial, urban) started “drastically increasing” her political tweeting since the pandemic onset, but avoided being politically active on Facebook “because that kind of aggravates people.” Patricia (73y, Hispanic, urban) “ended up blocking 50 % of the people on Facebook because I didn’t want the emotion. It was just easier for me not to follow… It got very political, and it turned a health issue into a political issue, which really pissed me off… So I just hide out and keep my thoughts to myself.”

4. Discussion

4.1. Triangulation

Both the survey and in-depth interview respondents reported altered place engagement through diminished use of third places such as restaurants, recreational facilities, and arts and cultural venues. Participants also shared significant increases in time spent at home. Our results affirm emerging research among older adults since the pandemic onset of how the virus dramatically changed daily life and generated ‘out of place’ emotions and experiences (Hayden et al., 2022; Finlay et al., 2022, 2023a,b). Similar to a study in Japan (Teramura et al., 2022), participants reported decreased frequencies of going out, which led to reduced social connection, decreased essential and leisure activities, and disrupted lifestyles. Our findings extend the timeframe of research beyond the acute first pandemic phase. Some of our qualitative study participants suggested potentially permanent changes to their community participation. Third places frequented pre-pandemic no longer necessarily situated safety, comfort, happiness, or belonging - critical experiences and emotions of place engagement necessary to maintain place attachments and a sense of ‘being in place’ (Finlay et al., 2023b; Finlay and Rowles, 2021; Rowles, 2018).

There were notable divergences between the quantitative and qualitative results. First, the qualitative results suggested significant differences in place engagement given intersections of individual and contextual factors. Aging transcends societal axes of power and privilege such as gender, race/ethnicity, sexuality, class, and disability. The qualitative results demonstrated embodied and emplaced intersectionality (Crenshaw, 2017; Finlay, 2021) in varied risk perceptions and altered place engagement since the pandemic onset. For example, interviewees in worse health shared greater isolation and stricter curtailments to their out-of-home activities given increased risk for severe COVID-19. These findings are similar to a study by Callow et al. (2020) among older adults in Maryland following the replacement of stay-at-home orders with “safer-at-home” public health advisories. They found that perceived severity of disease, a construct of the Health Belief Model, significantly predicted participants’ attitudes toward social isolation. Interviewees living in rural areas discussed having more opportunities for outdoor recreation and less disruption to daily routine given less-frequent pre-pandemic engagement in third places. Similarly, Rice et al. (2020) found that the frequency of outdoor recreation participation declined far more precipitously among outdoor enthusiasts residing in urban as opposed to rural areas.

Some participants reflected on their socioeconomic position, such as having the income and privilege to afford travel to ‘snowbird’ warm winter destinations to safely maintain leisure and social activities outdoors. These qualitative results parallel findings from in-depth

interviews with socioeconomically marginalized older adults in North Texas (Lee et al., 2022). However, our quantitative analysis did not identify significant place engagement differences across social, demographic, and health characteristics which included age, race/ethnicity, living alone, highest level of education, employment status, and total number of doctor diagnosed health conditions. This result is in conflict with findings from the in-depth interviews, which identified differences in place engagement across some sociodemographic characteristics. Perhaps our qualitative participants were able to recall more thoughtful accounts of their experiences through in-depth interviews compared to multiple choice survey questions, thereby providing more context for the researchers to identify variation in place engagement across individual characteristics. An alternative explanation may be the timing of when the quantitative data was collected relative to the qualitative data. As mentioned previously, the qualitative data collection started in May 2021 when there were more cases of COVID-19 and vaccinations were just beginning to become available to all US adults (CDC, 2023a). The “Delta” variant became dominant in June 2021 during qualitative data collection, leading to a third wave of infections. The CDC released updated masking guidance recommending that everyone in areas with substantial or high transmission wear a mask indoors. By the time the quantitative data collection had begun in April 2022, many more older adults were fully vaccinated against COVID-19 and were living in areas with a lower risk of COVID-19 infection. There were no universal indoor mask mandates (CDC, 2023b), and third places could return to regular operations. It is possible that sociodemographic differences in place engagement that were identified by the qualitative analysis existed earlier on in the pandemic when vaccination uptake was lower and many Americans had not fully returned to pre-pandemic life. These differences however, may have faded due to increased access to the vaccine and greater engagement in the community at a national level, and thus could not be captured by quantitative analysis.

The quantitative analysis revealed that females, but not males, reported frequenting service and recreational facilities less often than before the pandemic. There was some convergence of this quantitative result to the qualitative findings. During interviews, more males than females shared cautious re-engagement with places since the pandemic onset. More female interviewees expressed persistent anxiety about transmission risk that prevented them from returning to such places inperson. Literature on COVID-19 has found that women have consistently demonstrated more worry about the virus and subsequent behavior changes than their male counterparts (Barber and Kim, 2021; Galasso et al., 2020). It is important to recognize and further investigate how intersectionality (Crenshaw, 2017) underpins differential risk assessments and place engagements with implications for health and well-being. The COVID-19 pandemic has exposed and exacerbated societal inequities in multifaceted ways, including enduring anxieties and third place avoidance among vulnerable older women, lower-income individuals, those in worse health, and crowded urban areas.

A second divergence is that the quantitative results suggested that older adults utilized outdoor exercise over indoor exercise. This finding affirms studies of increased outdoor recreation among older adults since the pandemic onset (e.g., Finlay et al., 2022; Hayden et al., 2022; Lee et al., 2022). However, the qualitative analysis found that outdoor exercise was not always a suitable replacement. Some participants who began exercising outdoors complained that it did not provide ambient social connections, necessary equipment, or

adequate safety. Lee et al. (2022) also identified challenges and fears of walking around the neighborhood given off-leash dogs, people gathering, and lack of mask wearing. Exercising outside could lack pre-pandemic cognitive and social health benefits of communal exercise anchored in third places (Finlay et al., 2021a)

Third, the qualitative analysis captured a level of complexity and understanding of the secondary impacts of shifting place engagement that was not detected by the quantitative analysis. The in-depth interviews revealed how decreased use of recreational spaces may create physical, mental, and social health and wellbeing risks. For example, while most older adults indicated that they engaged with indoor exercise facilities less often since the pandemic onset, interviewees detailed noticeable declines in physical health resulting from this reduced engagement. Physical ailments came in the form of weight gain, reduced strength, decreased stamina, and laziness. These observations reinforce results from other studies that found that COVID-19 prevention measures had a variety of unintended consequences on the wellbeing of older adults, including reduced exercise, increased mobility limitations, and worsened social isolation (Lee et al., 2022; Teramura et al., 2022; MacLeod et al., 2021). In addition, the qualitative analysis illustrates how people's experiences *within* places may have fundamentally changed. For example, the quantitative analysis found that most older adults did not decrease their engagement with grocery stores. However, in-depth interviews identified that participants' interactions within the grocery store were profoundly different. Participants missed socialization with patrons and staff, and carefree engagement without fearing exposure to viral infection. Their personal place identifications (Finlay and Rowles, 2021) had shifted. As a result, widely-acknowledged social health benefits of pre-pandemic third place engagement (e.g., Gardner, 2011; Finlay et al., 2020; Torres, 2019; Finlay et al., 2021b) may no longer be as robust for older adults, particularly with newfound awareness of their physiological vulnerability to COVID-19 and other infectious diseases.

4.2. Altered place engagement

Participants remarked upon the importance of local third places and community organizations that had played protective roles since the pandemic onset. These included civic groups that reached out with material or emotional support, and parks with essential greenspace and safe opportunities for physical activity. However, not all older adults—especially those of lower socioeconomic status or with limited mobility—have equal access to these resources (Zhang et al., 2019; Levasseur et al., 2015).

Our findings advance understanding of place engagement in times of crisis and instability. The loss of frequent and carefree community engagement during the COVID-19 pandemic reveals how benefits of civic participation extend beyond social health to include physical and mental health, as well. Over two years since the pandemic onset, many older adults had not returned to third places in-person given continuing fears over transmission risk, shifts to online engagement, and withdrawals/losses of pre-pandemic hobbies and recreational activities (Cannon et al., 2023; Finlay et al., 2023b). While technology can be a useful tool to remain physically active, socially engaged, and cognitively stimulated (Xie et al., 2021), our qualitative participants affirmed other study findings that it is not universally

accessible, desired, nor fulfilling (Lee et al., 2022; Kotwal et al., 2021; Seifert et al., 2021). Furthermore, participants shared that expression in online community platforms had become harsher, highly politicized, and less civil since the pandemic onset. This politicization of the pandemic was reflected in expressed anger over business closures expressed by politically right-leaning interview participants; sentiments that have also been identified in other studies (Kerr et al., 2021; Peng 2022; Finlay et al., 2023a,b).

The social fabric of third places has shifted given COVID-19. Our qualitative analysis identified a lack of collective enjoyment and ease of togetherness previously anchored in third places pre-pandemic. Participants observed diminished opportunities to chit-chat, casually converse with staff and patrons, exchange a friendly smile, and soak up ambient social contact. This may have longer-term implications for health and wellbeing among older adults. At the individual level, diminished third place frequency and quality of engagement may exacerbate social isolation and associated risks for declining physical, mental, and cognitive health; reduced quality of life; and higher health care costs (National Academies of Sciences, Engineering, and Medicine, 2020). Collectively, this may exacerbate sociopolitical siloes and weaken civic life, community cohesion, and democracy traditionally anchored in third places (Oldenburg, 1999; Klinenberg, 2018). It is increasingly rare for Americans with differing sociopolitical perspectives to collectively ‘hang out’ and respectfully converse in physical and online third places (Cannon et al., 2023; Finlay et al., 2023a,b).

4.3. Strengths and limitations

The quantitative analysis has notable limitations. First, our findings may not be generalizable to non-Internet users (Kobayashi et al., 2021). Our estimates of changing place engagement might be subject to recall bias if participants were unable to accurately recall their engagement with places before the pandemic. Additionally, participants were not asked about virtual replacements such as online religious services or exercise classes. We could not take advantage of the longitudinal nature of the COVID-19 Coping Study, because the quantitative survey question of interest was only asked at a single time point. Assessing changing place engagement at multiple time points may have provided better context for how individuals engaged with their communities during the pandemic. Participants were also not asked about the magnitude of change in the amount of time spent at each type of place, nor shifting experiences *within* places. The project was further limited by sampling to formally analyze findings by age, race, ethnicity, socio-economic status, and location. Though the use of population weights reduced selection bias, the weights adjusted for US census tract region rather than a more granular measure of geography, which may have affected the distribution of the quantitative results. Additionally, due to sample attrition from the study baseline, the underlying quantitative data was skewed towards highly educated, non-Hispanic White females which may have impacted our ability to detect differences in place engagement across individual demographic characteristics. Interviews were conducted in Spring/Summer 2021 when the weather more often supported outdoor activity across much of the US and COVID-19 case rates were generally lower. While qualitative participants were socio-demographically and geographically diverse, our results may have differed if other participants had been selected.

The qualitative and quantitative portions address interrelated but distinct research questions, and hold a tension between attempting a population-representative quantitative sample with a more focused indepth analysis of a subsample of participants. This study also has several strengths. We used unique and timely multi-method data from the national COVID-19 Coping Study. Population weights allowed us to produce population representative quantitative estimates for older adults' changing engagement with a variety of places. We were able to assess longer-term changes to place engagement since the data were collected in 2021 and 2022 after vaccines were widely available and most pandemic-related closures were no longer in effect. To the best of our knowledge, this is one of the first multi-method and population-representative studies to investigate where and how older Americans spend their time since the COVID-19 pandemic onset in the US.

5. Conclusion

This study prompts critical exploration of how altered place engagement and community social fabrics may have wide-ranging and potentially longer-term implications for later-life health and wellbeing. The pandemic has shifted expectations for and engagement in civic life. Many older adults living in the US may still lack access to support, connection, and meaningful activity anchored in third places.

Understanding complexities of older adults' pandemic experiences can inform community- to national-level policies and advance inter-disciplinary research. For example, many older adults chose to engage in COVID-safe alternatives to in-person engagement that decreased the risk of viral infection, such as outdoor activities and virtual gatherings. Our study, however, identified that these alternatives were not necessarily fulfilling the needs of those who missed the physical, mental, and social health benefits of in-person activities. Future research should critically investigate potential inadequacies and solutions for alternatives to in-person engagement that better support the wellbeing of older adults during periods of crisis and prolonged isolation. Community gerontology's focus on the "mesolevel" (Greenfield et al., 2019) may be particularly useful to advance this research by orienting attention to multiple scales nested within each other (e.g., when national-level politics filter down to highly-localized third place experiences in-person and online). Place engagement in later life continues to be fluid, contested, and evolving over time.

Given enduring anxieties about COVID-19 and future public health crises, physical and social environments need to shift to continue to meet

older adults' evolving person-place needs (Lehning et al., 2012). Applied research can draw upon community gerontology's interventional lens to identify community contexts that facilitate effective, equitable, and sustainable evidence-based interventions (Greenfield et al., 2019). Community-based approaches can ensure that older adults are centrally involved in developing emergency response and preparedness plans, and in the design of liveable and resilient communities (Buffel et al., 2021).

We need to invest in community places and shift conceptualizations and operations of 'age-friendly communities'. This might include new and enlarged outdoor third places with

heaters and fans to enable place engagement with reduced fears of viral transmission. Expanded access to green spaces (ranging from 'pocket parks' the size of a house lot to larger municipal parks with trails and nature areas) could support social and physical activities. Smoothly-paved, well-lit, and plowed/salted (if snowy/icy) sidewalks and walking paths can enhance opportunities for outdoor exercise, active transit, and social connectivity. Given increased engagement in online social engagement, affordable and accessible technology classes for older adults can help reduce exclusions and the digital divide. Masked and distanced community events, such as exercise, educational, and artistic classes, could accommodate individuals with health vulnerabilities and/or anxieties. Village-like models (Lehning et al., 2012) could expand to help more community members access core services (e.g., grocery shopping when ill or needing to limit potential viral exposures) and develop new sources of social support (e. g., a regular check-in system during any future lockdowns). COVID-19 community recovery strategies can focus on building back *fairer* cities and communities (Buffel et al., 2021 p. 1465) to more equitably locate safe, accessible, and affordable community places that welcome people of all ages and abilities.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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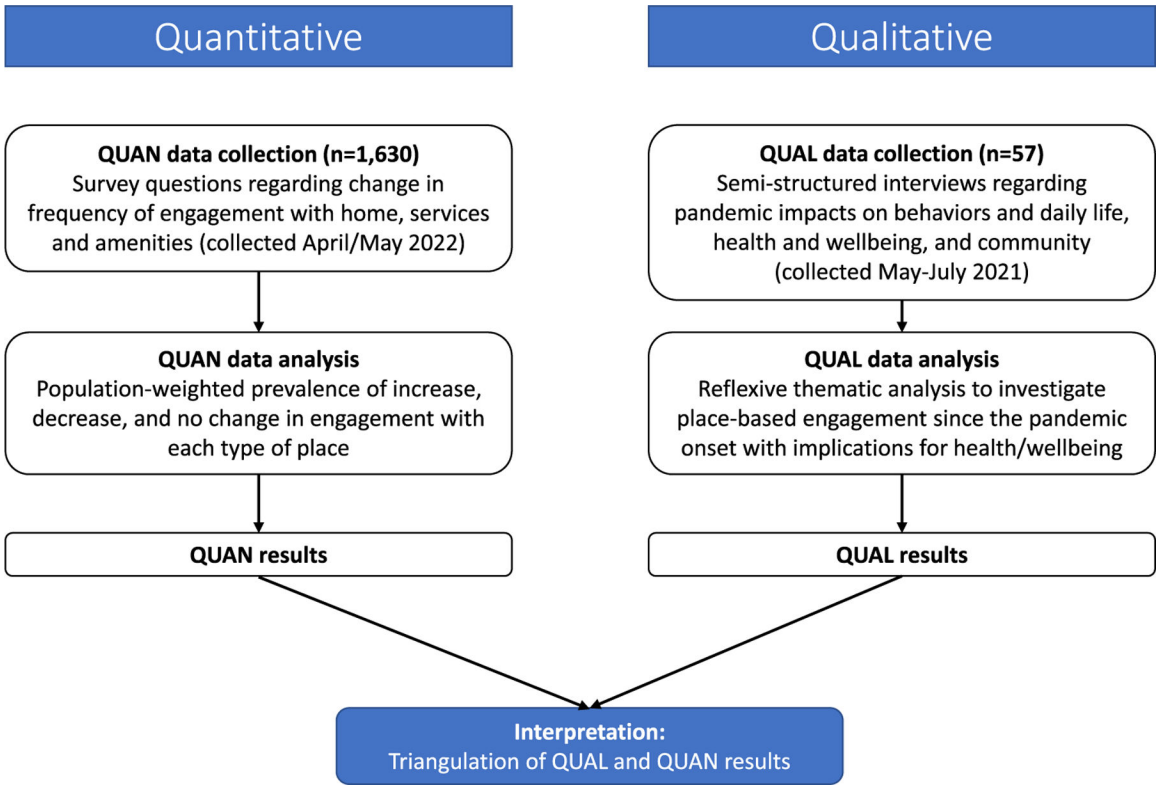

Fig. 1.
Convergent parallel multi-method study design.

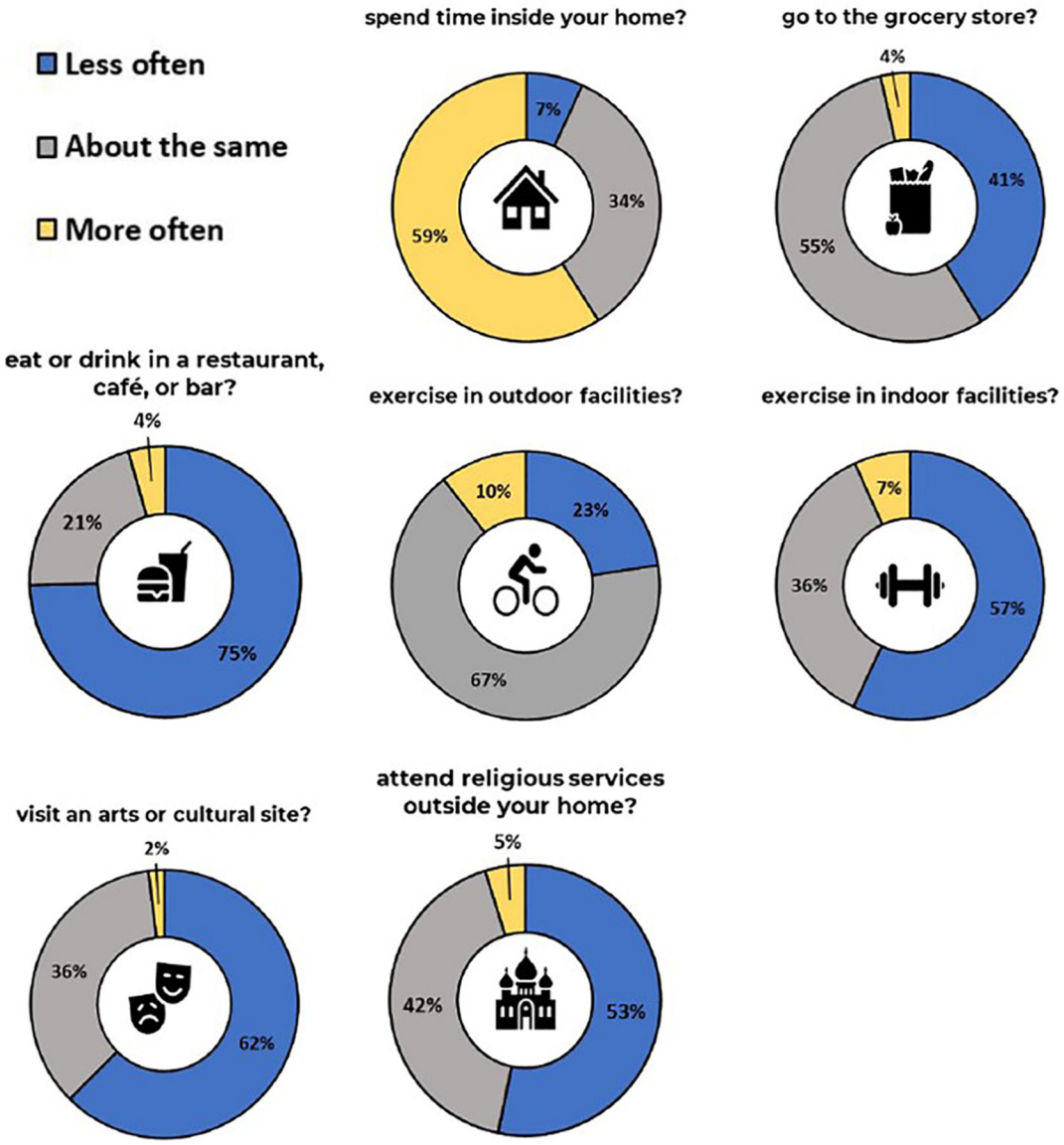

Fig. 2.

Population-weighted prevalence and 95 % confidence intervals (CIs) for changing engagement within each place[a,b,c], [a] Data from 24-month follow-up of the COVID-19 Coping Study (April/May 2022), [b] All estimates applied population weights based on 2018 American Community Survey data and weighted for attrition since baseline of the COVID-19 Coping Study, [c] Variables derived from the survey question: “Compared to before the coronavirus pandemic (March 2020), have you changed how often you…”, “spend time inside your home?”, “go to the grocery store?”, “eat or drink in a restaurant, café, or bar?”, “exercise in outdoor facilities?”, “exercise in indoor facilities?”, “visit an arts or cultural site?”, “attend religious services outside your home?”. Response options were “Not relevant,” “Less often,” “About the same,” and “More often”.

Table 1

Demographic, social, and health characteristics of the quantitative sample (COVID-19 Coping Study, 2022, N = 1630).

Characteristic	N	(%)
Age		
55–64	558	(34.2)
65–74	788	(48.3)
75+	284	(17.4)
Sex		
Male	498	(30.6)
Female	1132	(69.4)
Race-ethnicity		
Non-Hispanic White	1523	(93.4)
Racial or ethnic minority	107	(6.6)
Living alone[a]		
No	1169	(72.0)
Yes	455	(28.0)
Highest level of education		
Some college or less	223	(13.7)
College or university degree	510	(31.3)
Postgraduate or professional degree	897	(55.0)
Employment status[a]		
Employed	507	(31.5)
Unemployed	27	(1.7)
Retired	1078	(66.9)
Total number of doctor diagnosed health conditions [b]		
0–1	977	(59.9)
2+	653	(40.1)

[a]All characteristics measured in April/May 2020, except for employment status and living alone measured in April/May 2022.

[b]Number of doctor diagnosed health conditions calculated based on presence of self-reported diagnoses of hypertension, diabetes, heart disease, asthma, chronic obstructive pulmonary disease, and cancer (all yes/no).

Table 2

Population-weighted prevalence and 95 % confidence intervals (CIs) of changing engagement within each place[a,b,c].

Compared to before the coronavirus pandemic, have you changed how often you…	Less often		About the same		More often	
	%	95 % CI	%	95 % CI	%	95 % CI
spend time inside your home (n = 1623)	6.9	(4.9, 9.5)	34.1	(30.3, 38.1)	59.1	(55.0, 63.0)
go to the grocery store (n = 1622)	41.1	(37.3, 45.0)	55.3	(51.4, 59.2)	3.6	(2.2, 5.7)
eat or drink in a restaurant, café, or bar (n = 1612)	74.6	(70.7, 78.2)	21.0	(17.7, 24.7)	4.4	(2.9, 6.8)
exercise in outdoor facilities (n = 1105)	22.6	(19.1, 26.7)	66.9	(62.4, 71.1)	10.5	(8.0, 13.7)
exercise in indoor facilities (n = 1109)	57.0	(52.3, 61.6)	36.2	(31.8, 40.9)	6.8	(4.8, 9.4)
visit an arts or cultural site (n = 1427)	62.5	(58.3, 66.5)	35.6	(31.6, 39.8)	1.9	(1.2, 2.8)
attend religious services outside your home (n = 806)	53.3	(47.7, 58.8)	42.0	(36.5, 47.6)	4.8	(3.0, 7.5)

[a] Data were from 24-month follow-up of the COVID-19 Coping Study.

[b] All estimates applied population weights based on 2018 American Community Survey data and are weighted for attrition since baseline of the COVID-19 Coping Study.

[c] Variables were derived from the survey question: “Compared to before the coronavirus pandemic (March 2020), have you changed how often you exercise in outdoor facilities”.

Table 3

Demographic, social, and health characteristics the qualitative sample, (COVID-19 Coping Study, 2021, N = 57).

Characteristic [a]	N (%)
Age	70.7 years (8.1 SD)
Sex	
Female	25 (43.9)
Male	30 (52.6)
Other	1 (1.8)
Prefer not to answer	1 (1.8)
Ethnicity (*n* = 55)	
Non-Hispanic or Latinx	48 (87.3)
Hispanic or Latinx	7 (12.7)
Race	
American Indian or Alaska Native	2 (3.5)
Asian	8 (14.0)
Black	6 (10.5)
Other Race	4 (7.0)
White	28 (49.1)
Two or more races	9 (15.8)
Living arrangement (*n* = 56)	
Living alone	22 (39.3)
Living with others	34 (60.7)
Relationship status	
Married or in a relationship	34 (59.6)
Single, divorced/separated	10 (17.5)
Single, never married	9 (15.8)
Single, widowed	4 (7.0)
Highest level of education	
High school diploma	5 (8.8)
Some college	4 (7.0)
College graduate	17 (29.8)
Graduate school (e.g. Master's, MD, JD, PhD)	31 (54.4)
Employment status pre-COVID-19	
Employed full-time	8 (14.0)
Employed part-time	7 (12.8)
Retired	34 (59.6)
Self-employed	3 (5.3)
Unable (disability or health condition)	4 (7.0)
Unemployed and seeking work	1 (1.8)
Total number of doctor-diagnosed health conditions [b]	
0–1	29 (50.9)

Characteristic [a]	N (%)
2+	28 (49.1)

[a] All characteristics were measured in April/May 2020, except for employment status which was measured in April/May 2022.

[b] Total number of doctor diagnosed health conditions were calculated based on the presence of self-reported diagnoses of hypertension, diabetes, heart disease, asthma, chronic obstructive pulmonary disease, and cancer (all yes/no).