Longitudinal associations between cultural engagement and mental and social wellbeing: an outcome-wide analysis

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Abstract

Cultural engagement (museum, theatre, live music attendance) may support older adults' wellbeing. However, whether cultural engagement is associated with multiple wellbeing domains and whether associations vary by sociodemographics and health is underexplored. Using fourteen years of data, we tested the longitudinal associations between cultural engagement and seven wellbeing outcomes. We accounted for observed and unobserved characteristics using fixed-effects regression and time-varying confounder adjustment. Arellano-Bond estimators assessed directionality, and interactions assessed moderation. We included 6,932-10,428 individuals aged 50-99 years from the English Longitudinal Study of Ageing (ELSA). Increases in cultural engagement were associated with higher life satisfaction, quality of life, worthwhile life, happiness, and lower depressive symptoms, anxiety, and loneliness. After controlling for bidirectionality, cultural engagement increases predicted subsequent quality of life improvements. Interactions suggested that individuals with poorer health may experience greater wellbeing benefits. The findings highlight the importance of ensuring equitable access to cultural engagement for all older adults.

Keywords: ageing, leisure, arts, wellbeing, loneliness, mental health, instrumental variable

Introduction

The world's population is ageing. Worldwide, the number of people aged 65 years or older is estimated to rise from 1 in 10 in 2021 to 1 in 6 in 2050 (United Nations, 2023). In the UK context, 1 in 5 people are aged 65 and above (Centre for Ageing Better, 2023). While people live longer, they do not necessarily live happier. Ageing poses challenges to an individual's mental and social wellbeing. Life transitions synonymous with ageing (including retirement, reduced social networks, poorer physical health, and mobility issues) can heighten poorer mental and social wellbeing, including greater loneliness and depression as people age (Dahlberg et al., 2021; Zenebe et al., 2021). In addition to this, the ageing population has led to an increased need for healthcare services treating older adults with complex and long-term healthcare needs (NHS England, 2021). However, these healthcare systems are underfunded and overstretched, exacerbating the challenges older adults face (Gentry et al., 2023). Consequently, exploring alternative lifestyle-oriented public health approaches is crucial to support older adults' mental and social wellbeing.

Cultural engagement (e.g., visits to cinemas, museums, and concerts) is one public health approach that could support mental and social wellbeing. These leisure activities combine salutogenic ingredients and activate psychological, biological, social, and behavioural pathways to wellbeing (Fancourt et al., 2021; Warran et al., 2022). For example, in epidemiological studies with older adults living in the UK, more frequent cultural engagement has been associated with a reduced risk of developing depression across ten (Fancourt & Tymoszuk, 2019) and 12 years (Fancourt & Steptoe, 2019). More frequent cultural engagement has also been cross-sectionally and longitudinally associated with lower loneliness, particularly museum and gallery engagement (Tymoszuk, Perkins, Fancourt, et al., 2020). Additionally, more frequent engagement with museums and galleries has been associated with higher life satisfaction and wellbeing and more frequent theatre, concert and opera engagement with higher wellbeing (Tymoszuk, Perkins, Spiro, et al., 2020). Interventions in this area have provided insight into some of the underlying mechanisms connecting such engagement to mental and social wellbeing. For instance, activities like going to concerts can reduce levels of stress hormones (Fancourt & Williamon, 2016) and foster positive emotions (Williams et al., 2023), while visiting museums can have restorative benefits, reducing stress and promoting feelings of belonging (Šveb Dragija & Jelinčić, 2022). Therefore, cultural engagement may support mental and social wellbeing as people age.

However, the existing longitudinal evidence has limitations, which this study aims to address. First, while the mental and social wellbeing benefits of cultural engagement have been well-documented, many of these studies only focused on one mental or social wellbeing domain. This has made it challenging to compare across studies using different approaches, identify whether cultural engagement impacts extend

across different wellbeing domains, and explore whether different types of cultural activity differentially influence outcomes. This study, therefore, used an outcome-wide approach to systematically examine how cultural engagement was associated with a broad range of mental and social wellbeing outcomes (i.e., depressive symptoms, anxiety, life satisfaction, quality of life (QoL), having a worthwhile life, happiness and loneliness) and utilised data collected across fourteen years. We separately examined different types of cultural engagement activity to understand whether specific activities are associated differently with mental and social wellbeing outcomes. This is important to identify the 'active ingredients' (components) of activities that may be responsible for associations.

Second, there is a social gradient in cultural engagement in older adults, such that it varies across sociodemographic groups, and older adults with poorer health are also less likely to engage in cultural activities (Bone et al., 2021; Fluharty et al., 2021). However, most studies have not explored whether such disparities affect any association between cultural engagement and mental and social wellbeing. Understanding whether the benefits of cultural engagement differ across specific population subgroups could support the development of policies and public health interventions to better meet the needs of older adults. It may also increase our understanding of potential mechanisms linking cultural engagement to mental wellbeing. Lastly, most existing studies have relied on adjustment for measured confounders. However, some of the confounders of the relationship between cultural engagement and wellbeing include complex factors relating to demographics, socioeconomic position, personality, past life experiences, and genetics. These may not be adequately assessed within cohort studies, let alone effectively incorporated into analytical models. Fixed effects approaches provide opportunities here by automatically accounting for all time-invariant confounding factors, even if unobserved, and disentangling the direction of the association through instrumental extensions. However, their use within research to date on the associations between cultural engagement and wellbeing in older adults has been limited (Fancourt & Steptoe, 2019; S. Wang et al., 2020).

Methods

Dataset

We analysed data from the English Longitudinal Study of Ageing (ELSA), which started in 2002/2003 and initially included 12,099 individuals. Respondents aged 50 and over living in private households in England are interviewed every two years, with new sample members added to ensure the sample retains its age profile (Steptoe et al., 2013). We used data from wave 2 (2004/2005) to wave 9 (2018/2019), spanning 14 years, which included questions on cultural engagement and mental and social wellbeing. As some outcomes had only been measured in later waves, this resulted in two analytical samples: Sample 1: n=10,428 participants (N=47,207 observations from waves 2-9) and Sample 2: n=6,932 participants (N=21,630 observations from waves 6-9). The average number of waves completed differed across samples (Sample 1=4.5, ranging from 2 to 8; Sample 2=3.1, ranging from 2 to 4).

Exposure

Cultural engagement

Three types of cultural engagement were measured in all waves: going to i) a museum or an art gallery, ii) the theatre, a concert, or the opera, and iii) the cinema. For each type of engagement, responses ranged from never engaging to engaging twice a month or more (scale 0-5). As well as being considered independently, these measures of engagement were also summed to create overall cultural engagement, ranging from 0 to 15, with a higher value simultaneously indicating more frequent and more varied cultural engagement.

Outcomes

Depressive symptoms

Depressive symptoms were measured in all waves using the 8-item version of the Centre for Epidemiological Studies Depression Scale (CES-D), which has been widely used in population surveys and primary care to screen for the presence of depressive symptoms (Turvey et al., 1999; Vilagut et al., 2016). The presence of eight symptoms (0=No, 1=Yes) was measured and summed to create a total score ranging from 0 to 8, with a higher value indicating more depressive symptoms.

Anxiety

Anxiety was measured in four waves using 1-item from the Office for National Statistics (ONS) wellbeing measure (ONS, 2018) asking individuals how anxious they felt yesterday. The response scale was rated from 0 to 10, with higher scores indicating higher anxiety.

Life satisfaction

Life satisfaction was measured in all waves using the 5-item Satisfaction with Life Scale (SWLS) on scales ranging from 1 to 7 (Diener et al., 1985). Scores were summed, ranging from 5 to 35, with higher scores indicating higher life satisfaction.

Quality of life (QoL)

QoL was measured in all waves using the ELSA-adapted version of the CASP-19 measure, which assesses control, autonomy, self-realization, and pleasure with 19 items rated on a 4-point scale (Hyde et al., 2003). All the items are summed, ranging from 0 to 57, with higher scores indicating higher QoL.

Having a worthwhile life

Having a worthwhile life was measured in four waves using 1-item from the ONS wellbeing measure (ONS, 2018) asking individuals to what extent they feel that the things that they do in their lives are worthwhile. The response scale was rated from 0 to 10, with higher scores indicating higher feelings of having a worthwhile life.

Happiness

Happiness was measured in four waves using 1-item from the ONS wellbeing measure (ONS, 2018) asking individuals how happy they felt yesterday. The response scale was rated from 0 to 10, with higher scores indicating higher happiness.

Loneliness

Loneliness was measured in all waves using the UCLA 3-item Loneliness Scale, validated for use in population surveys (Hughes et al., 2004). The three items rated on a 3-point scale were summed to create a score ranging from 3 to 9, with higher scores indicating higher levels of loneliness.

Time-varying covariates

A set of six time-varying variables that might confound the observed associations between cultural engagement and mental and social wellbeing were identified. These included age (continuous), wealth (total net non-pension wealth in quintiles), housing tenure (not a homeowner, homeowner), employment status (not employed, employed, retired), living with a partner (no, yes), and long-term health condition (no illness, non-limiting illness, limiting illness).

Statistical analyses

Main analyses

To explore the associations between cultural engagement and each of the seven outcomes, fixed-effects regression was applied in seven separate models. Fixed-effects regression assesses whether changes in an exposure (cultural engagement) are associated with changes in an outcome (mental and social wellbeing). The regression estimates within-individual variation, meaning individuals are compared with themselves over time. Therefore, models automatically control for all individual observed and unobserved time-invariant factors (e.g., stable characteristics such as ethnicity, past life experiences, past mental health and medical history, social class, and genetics) (Allison, 2009). Additionally, important observed time-varying confounders were controlled for, and models were built sequentially based on our directed acyclic graphs (DAGs) (Tennant et al., 2021), which mapped the direction of effects between covariates, the exposure and outcomes (Figure S1). Model 0 was unadjusted. In model 1, we adjusted for age, wealth, and housing tenure. In model 2, we additionally adjusted for employment status and living with a partner. In model 3, we additionally adjusted for the presence of a long-term health condition. Having a health condition was added in a separate final stage because it may lie on the causal pathway between cultural engagement and mental and social wellbeing.

Sensitivity analyses

To check the robustness of the results, we ran three sensitivity analyses. The first explored whether each cultural engagement activity type (i.e., museum/gallery, theatre/concert/opera, and cinema) was differentially associated with the outcomes, so we repeated the main analyses with each of the three individual items as the exposures.

Second, we ran exploratory analyses to see whether any longitudinal associations from the main analyses varied depending on respondents' sociodemographic and health characteristics. We therefore included interactions with overall cultural engagement for 1) gender (male, female), 2) baseline age group (50-64 years, 65-79, 80 and above), 3) living with a partner (no, yes), 4) retirement status (not retired, retired), 5) degree status (no degree, degree), and 6) health status (no illness, limiting or non-limiting illness). Interactions are presented as estimates in tables and in margins plots to show predicted values of the outcomes according to cultural engagement levels for each subgroup. All interactions were run in separate models which were fully adjusted for interactions with gender, living with partner, and degree status. However, as some interaction variables were derived from the time-varying covariates, these original covariates were removed from the model in specific interaction analyses. For example, continuous age was removed when running interactions with age groups; employment was removed when running interactions with retirement status and health condition (as three categories) was removed when running interactions with the two-category health status variable. Due to data limitations, we could only create a gender variable based on as a binary construct of sex. More needs to be done to represent gender identities (Hanes & Clouston, 2021).

Third, given that fixed-effects regression cannot assess the direction of associations between cultural engagement and mental and social wellbeing, we used a generalized method-of-moments (GMM) estimator to explore whether cultural engagement might be causally associated with mental and social wellbeing (i.e., depressive symptoms, life satisfaction, QoL and loneliness) after controlling for prior mental and social wellbeing. This approach could only be applied in Sample 1 as Sample 2 (which had outcomes of worthwhile life, happiness and anxiety) did not have sufficient waves of data. This fixed-effects model uses a first-difference model and includes lags of the outcome variable as instruments for the first difference (Arellano & Bond, 1991). The inclusion of a time-lagged outcome, using its value in the previous period to predict the current value, reduces reverse causality, helping us to understand the direction of effects. The model thus takes account of past changes in the outcomes to estimate the effect of changes in cultural engagement on changes in the outcomes. We used the two-step system GMM estimator testing 1-4 lags for each outcome. We tested assumptions for autocorrelation (serial correlations between error terms), exogeneity of instruments (lagged outcomes need to be uncorrelated with error terms) and over-identification. We also included an exogenous dummy variable for wave to improve the model estimation. All analyses were performed in Stata v.18 with Arellano–Bond models fitted using the "xtabond2" command (Roodman, 2009).

Results

Baseline descriptives

In Sample 1, the mean age was 61.9 years (standard deviation [SD]= 9.0), 55% were female and the mean cultural engagement was 4.2 (SD=3.2) (Table 1). The mean score for depressive symptoms was 3.0 (SD=1.3), 4.1 (SD=1.5) for loneliness, 25.5 (SD=6.4) for life satisfaction, and 42.0 (SD=8.8) for QoL. In Sample 2, the mean age was 65.2 years (SD=8.7), 55% were female and the mean cultural engagement was 4.5 (SD=3.2). The mean score for worthwhile life was 7.5 (SD=2.1), 7.3 (SD=2.2) for happiness, and 2.0 (SD=2.5) for anxiety. Descriptives of the overall mean, overall SD, between-individual SD and within-individual SD are presented in the Supplement (Table S1).

(Table 1)

Main analyses

After adjusting for all covariates, increases in overall cultural engagement were associated with decreases in depressive symptoms (B=-0.03, CI-95%=-0.03, -0.02, p<.001), anxiety (B=-0.06, CI-95%=-0.09, -0.04, p<.001), and loneliness (B=-0.04, CI-95%=-0.04, -0.03, p<.001), and increases in life satisfaction (B=0.24, CI-95%=0.21, 0.26, p<.001), QoL (B=0.38, CI-95%=0.35, 0.41, p<.001), having a

worthwhile life (B=0.05, CI-95%=0.03, 0.07, p<.001), and happiness (B=0.07, CI-95%=0.05, 0.09, p<.001) (Figures 1-2; Table S2).

(Figures 1 & 2: Graphs)

Sensitivity analyses

Types of cultural engagement

Every few months or more, 17.4%-19.7% of individuals visited a museum/gallery, 24%-25.8% visited the theatre/concert/opera and 23.4%-25.4% visited the cinema (Table S3). When exploring each cultural activity individually, more frequent museum/gallery visits were associated with lower depressive symptoms, loneliness and anxiety, and higher scores for life satisfaction, QoL, having a worthwhile life, and happiness (Tables S4-S5). A similar pattern was observed for theatre/concert/opera visits and to some extent for cinema visits. Some of these associations showed a dose-response relationship, with more frequent engagement associated with larger changes in outcomes. However, associations were less consistent and weaker between cinema visits with having a worthwhile life and anxiety.

Interactions

Exploratory analyses indicated that the associations between overall cultural engagement and mental and social wellbeing outcomes varied across different population subgroups. For depressive symptoms, the association with cultural engagement was stronger for those living without a partner and who had an illness (Table S6, Figure S4-S5). For loneliness, the association was stronger for those who were female and who were living without a partner (Table S6, Figure S3-S4). For life satisfaction and QoL, the associations were stronger in those who were female, older age groups, living without a partner and who had an illness (Table S6, Figure S2-S5). For having a worthwhile life, the association was stronger in those who were living without a partner (Table S7, Figure S4). For anxiety, the association was stronger in those aged between 65-79 years and with an illness (Table S7, Figure S5).

Directionality of the association

After accounting for covariates and previous levels of the outcomes, there was some evidence that cultural engagement was associated with QoL, indicating that increases in cultural engagement were associated with subsequent increases in QoL. However, cultural engagement was no longer associated with depressive symptoms, loneliness or life satisfaction (Table S8).

Discussion

This paper explored the longitudinal associations between cultural engagement and mental and social wellbeing outcomes in older adults, taking an outcome-wide approach over a 14-year period. The main findings indicate that increases in cultural engagement were associated with reductions in depressive symptoms, anxiety, and loneliness, as well as increases in life satisfaction, QoL, feelings of having a worthwhile life, and happiness. Exploring the direction of these associations, higher cultural engagement might be associated with subsequently higher QoL. Associations continued to be found when exploring cultural activities separately, especially when visiting a museum/gallery or the theatre/concert/opera. Our study also indicates that some associations might be stronger for certain subgroups of older adults, such as those with a health condition or living without a partner.

Our main findings mirror the existing literature that has focused on the associations between cultural engagement (as defined in this study) with outcomes such as depressive symptoms, loneliness, having a worthwhile life and life satisfaction in older adults (Fancourt & Tymoszuk, 2019; Steptoe & Fancourt, 2020; Tymoszuk, Perkins, Fancourt, et al., 2020). The findings are also consistent with the broader

literature on leisure activities and the wellbeing of older adults (Fancourt & Finn, 2019; Mak et al., 2023; Park, 2023). Research on the potential mechanisms linking cultural engagement to mental and social wellbeing has identified four pathways: psychological, social, biological, and behavioural (Fancourt et al., 2021). Psychologically, cultural engagement could be a strategy to regulate emotions (Fancourt et al., 2019). Socially, cultural engagement is likely to facilitate social contact and interaction, which may help the development of social identities (C. Haslam et al., 2014) which can support mental wellbeing (A. S. Haslam et al., 2022; Steffens et al., 2021). Biologically, cultural engagement can help modulate inflammation (Gao et al., 2024; Walker et al., 2019), which is known to be linked to mental wellbeing (i.e., depression and resilience) (Halaris, 2019; Ryan & Ryznar, 2022). Behaviourally, engaging with cultural activities could facilitate being present in the moment, a behavioural technique that can help support mental wellbeing (Hofmann & Gómez, 2017).

However, our results provide an important extension of these previous findings. First, they examine the longitudinal associations between cultural engagement and broader psychological outcomes such as anxiety, which has received significantly less research attention in older adults. Second, they take a much more robust account of confounding factors, demonstrating that a relationship is still present even when accounting for complex unmeasured confounders, including demographics and socioeconomic factors, genetics, and past behaviours and health experiences. Third, they provide novel findings on the temporality of the relationship. In reality, the relationship between a complex psychosocial behaviour like cultural engagement and a multi-faceted outcome like wellbeing is likely bidirectional. Research exploring the reasons for leisure engagement and the impacts of leisure supports the idea of reciprocal influence and positive and negative feedback loops (Fancourt & Warran, Under publication; Mak et al., In progress). However, our temporal analysis showed that cultural engagement was associated with later QoL, suggesting that this association was not solely due to higher QoL leading to increased cultural engagement. It is plausible that cultural activities may contribute to older adults' QoL through various mechanisms, including intellectual stimulation, cultural enrichment, and social interaction (Fancourt et al., 2021). Our findings are promising as they imply that promoting cultural engagement could encourage a positive feedback loop between engagement and QoL.

The findings also show that visiting museums/galleries and going to the theatre/concert/opera may similarly benefit mental and social wellbeing, with dose-response relationships according to engagement frequency. However, going to the cinema was less consistently associated with mental and social wellbeing. We can consider these differences in relation to the active ingredients of these activities (Warran et al., 2022). Visiting museums/galleries and the theatre/concert/opera may provide more opportunities for imagination, cognitive stimulation, social interactions about the culture engaged with, creativity, and aesthetic experiences compared to the cinema. Additionally, extended screen time (including TV viewing) has been associated with poorer mental health (X. Wang et al., 2019). Previous research on cultural engagement in ELSA and cognitive outcomes also found a

similar pattern of dose-response relationships for museums/galleries and going to the theatre/concert/opera, but less so for going to the cinema (Fancourt & Steptoe, 2018). While these differences may indicate residual confounding, as there could be more socioeconomic disparities in visiting museums/galleries and theatres/concert/opera than going to the cinema, given our statistical approach, any time-invariant factors (alongside the measured time-varying factors identified) were taken account of. Nonetheless, future research is needed into other time-varying confounders that could differentially affect cinema attendance compared with other cultural activities.

A final notable finding from our exploratory analyses is that the associations between cultural engagement and mental and social wellbeing were fairly stable across subpopulations, with a few notable differences. In particular, females, those live without a partner and who have a health condition, appeared to experience greater wellbeing improvements with more frequent engagement. These results are crucial because these demographics tend to have poorer mental and social wellbeing than their counterparts (Dahlberg et al., 2021; Hansen & Blekesaune, 2022; Xie et al., 2023), even though they do not necessarily engage less in cultural activities (Bone et al., 2021; Fluharty et al., 2021; Mak et al., 2020). Explanations for this may be related to their engagement being a way to regulate their emotions, cope with challenges, give meaning and support their wellbeing (Fancourt et al., 2019; Fancourt & Ali, 2019; Noguchi & Shang, 2023). Different age groups also appear to have different patterns regarding being culturally engaged and their mental and social wellbeing scores. Specifically, the associations between higher cultural engagement and higher life satisfaction and QoL were stronger in older participants, particularly those aged 80 and above, whereas the associations with anxiety was stronger for those aged 65-79. In the literature, adults who are older tend to be more engaged in arts and cultural activities (Fluharty et al., 2021; Mak et al., 2020; Walker et al., 2023), but there are nuances. For example, compared to adults aged 50-59, those aged 70+ have more frequent arts participation (Fluharty et al., 2021), whereas those aged 70+ have also been shown to be less culturally engaged than younger adults (Walker et al., 2023). This may be explained by older adults having more time to engage in cultural activities than older adults who are younger (i.e., still working). However, the oldest adults may also have more health-related concerns (Maresova et al., 2019), which, although a potential barrier to engagement, may mean they are benefiting more from engaging. The finding of a stronger reduction in anxiety scores in the group aged 65-79 could be related to these adults finding more relief from cultural engagement, as it is alleviating anxieties from experiences that might be synonymous with this part of ageing, such as reductions in and shifting of social networks (Wrzus et al., 2013). Whilst socioeconomic indicators, such as higher education levels, play an important role in access to cultural engagement (Bone et al., 2021; Fluharty et al., 2021; Mak et al., 2020; Walker et al., 2023) the associations between such engagement and mental and social wellbeing did not vary by these indicators in our findings. This suggests that older adults may experience the same mental and social wellbeing benefits from cultural engagement irrespective of their socioeconomic status.

This paper has several strengths, including using data collected across a 14-year period, using fixed-effects regressions and applying additional covariate adjustment that allowed us to control for individual characteristics of people which do not change over time (e.g., fixed genetic effects and past experiences) and those which do (e.g., employment and health status). We also ran a number of sensitivity analyses to test the robustness of findings, including Arellano Bond estimators, which allowed us to explore directionality. However, there are several limitations to consider. First, while we carefully designed our models iteratively using a causal approach, causality is hard to establish. Although we used a sophisticated analytical technique, more research is needed using other causal inference models. Second, our study has solely focused on receptive/passive forms of cultural engagement, so future research is required to investigate whether we see similar longitudinal associations with active participation in activities, such as participation in performing arts, crafts, or creative community group activities. This will provide further insights into active ingredients that may be responsible for the association between cultural engagement and mental and social wellbeing in older adults. It would also be interesting to explore whether such longitudinal (i.e. multi-year) associations are maintained in a therapeutic or intervention setting, such as for Museums on Prescription, which connects individuals with poorer health and wellbeing to museums or galleries (Thomson et al., 2018). Third, mental and social wellbeing were measured to give a broad picture of individual wellbeing for older adults, such as through mental health (i.e., depressive symptoms, anxiety), social wellbeing (i.e., loneliness), and different aspects of subjective wellbeing including hedonic/experienced wellbeing (i.e., happiness), hedonic/evaluative wellbeing (i.e., life satisfaction), and QoL. Future research is encouraged to look at other aspects of social well-being, such as other functional aspects (i.e., social support), as well as structural and qualitative aspects of social connections (e.g., social isolation and relationship strain) (Holt-Lunstad, 2018), as well as eudemonic forms of wellbeing such as autonomy and self-realisation (Stone & Mackie, 2013). In ELSA, there is a lack of information on whether cultural activities are done alone or with others. Exploring this would help us understand how these types of engagement may also promote group-level wellbeing, including social connectedness.

Conclusion

Overall, our analyses show that more cultural engagement is associated with different aspects of mental and social wellbeing, including lower levels of depressive symptoms, anxiety and loneliness and higher levels of life satisfaction, QoL, having a worthwhile life and happiness. Exploring the direction of these associations, the association between cultural engagement and QoL persisted even after accounting for prior levels of QoL. Findings were driven by two forms of cultural engagement, specifically going to museums/galleries and theatre/concerts/opera. There were some indications that the associations varied across some subgroups of older adults, including those who traditionally engage less potentially experiencing greater benefits from such engagement. Our findings have several implications. First, they highlight the importance of ensuring equitable access to cultural engagement for all

older adults through funding cultural activities and spaces. Second, our results are of importance to specific schemes supporting older adults, such as through Social Prescribing and Museums on Prescription services that help connect older adults to cultural and community activities.

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