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Investing in the arts can improve population health

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With enormous pressure to find real solutions for health services globally, there is no better time to explore “radically” novel approaches to healthcare. The Social Biobehavioural Research Group that I Head at University College London has solutions to offer, but what we bring to the table is not radical in the traditional sense. We’re not offering glitzy apps or high-tech processes. We’re offering resources that already exist in our communities, but which are rarely harnessed for their potential in preventing and treating health issues: **arts and cultural assets**. Unfortunately, they haven’t traditionally formed part of the usual care you receive when you visit your GP. But this has all begun to change in recent years, with innovative pilots up and down the country paving the way for the national roll-out of social prescribing. **Social prescribing** (referring people to non-medical community-based support such as the arts and culture alongside nature-based programmes, social groups and volunteering schemes) is part of the NHS Long Term Plan to expand personalised medicine and it’s becoming increasingly recognised for its value in addressing the social challenges that land many in poor physical and mental health.

Much of the evidence for social prescribing comes from research that examines the effects of arts-based interventions on mental and physical health. For example, there is now a wealth of evidence on how arts activities such as singing can be used to treat depression. However, a long-standing criticism of such studies is that they’re typically small in sample size (dozens or hundreds of people only), unrepresentative (the people who consent to take part may be different from the rest of the population) and only follow people for a short period (weeks or months typically). So to counteract these methodological weaknesses, we’ve been taking another approach, examining how arts and cultural engagement can affect tens of thousands of individuals’ health over years, if not decades. To do this, we use large longitudinal cohort studies: jewels in the UK’s research infrastructure that track representative samples of the population across their entire lifespan with incredibly rigorous assessments of every aspect of their lives. Unappreciated until our work began, many of the UK’s leading cohort studies contain dozens of questions on



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arts and cultural engagement buried amidst the other thousands of variables. So we use these questions along with cutting-edge statistical techniques to look for associations between arts and cultural activities and health outcomes at a societal level, considering how this ultimately impacts population health, and how what the implications are for schemes such as social prescribing.

Over the past 5 years, we've examined the effects of attending concerts, museums, galleries, cinemas, and the theatre; taking part in music, dance, crafts, and drama; listening to music, reading, and many other creative activities. We've then analysed links with mental illnesses, mental health, physical health, somatic symptoms, and physiological, cardiovascular, cognitive, and psychosocial measures. We've examined associations across different ages, socioeconomic positions, ethnicities, education levels, and other sociodemographic factors. All of our research is detailed in over [70 papers](#) we've published since 2017.

Some of our findings immediately corroborated findings from intervention studies, but with the addition of showing similar effects in large, representative samples over long time periods. For example, when we specifically looked at individuals who already had depression and who took up new hobbies such as making music, drawing, handicrafts, carpentry, collecting, or model-making, they were nearly 3 times more likely to recover from their depression over the following 12 years¹. But the cohorts also

¹ Fancourt D, Opher S, de Oliveira C. Fixed-Effects Analyses of Time-Varying Associations between Hobbies and Depression in a Longitudinal Cohort Study: Support for Social Prescribing? *Psychother Psychosom.* 2020;89(2):111–3.

allowed us to explore questions that had never been properly considered, such as whether arts engagement could help to prevent the incidence of depression in the first place. In a small cohort study we conducted, we found that women who listened to music during pregnancy were less likely to develop postnatal depression for three months after birth.² We then looked at older adults in England (age 50+) who regularly attended the theatre, cinema, galleries, and other cultural venues. The risk of developing depression over the following decade was nearly half (48%) that of people who did not engage in culture.³ Most importantly, in all of these analyses, we recognised that people who engage in arts and culture could be 'different' from the rest of the population: perhaps healthier, wealthier, better educated, living in more affluent areas, retired, with more free time etc. But we were able to use our statistical techniques to account for all of these factors. While such demographic, health, social and behavioural details did partly explain some of the associations we found, they did not explain the whole picture: an independent relationship between arts, culture and health was maintained even once accounting for such factors.

Our results were similar when we examined other conditions among the elderly, both physical and mental. For instance, older

² Fancourt D, Perkins R. Could listening to music during pregnancy be protective against postnatal depression and poor wellbeing post birth? Longitudinal associations from a preliminary prospective cohort study. *BMJ Open.* 2018 Jul 1;8(7):e021251.

³ Fancourt D, Tymoszuk U. Cultural engagement and incident depression in older adults: evidence from the English Longitudinal Study of Ageing. *Br J Psychiatry.* 2019 Apr;214(4):225–9.



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adults who consistently engaged in cultural activities (even when accounting for other life factors) had were more likely to have higher levels of wellbeing,⁴ a lower risk of loneliness,⁵ a lower risk of developing chronic pain,^{6, 7} and less of a likelihood of becoming frail.⁸ Adults over 50 who visited museums every few months or more were less likely to develop dementia.⁹ We've also found positive associations with memory and semantic fluency as people aged.¹⁰

On the other end of the age spectrum, we've found that arts and cultural engagement can have long-lasting effects from childhood to adolescence.¹¹ Specifically, children aged seven who took part in creative activities like free writing, story-telling, crafts, painting, drawing or drama had a lower risk of developing behavioural problems in early adolescence in adolescence. If children tended to read for

pleasure, they were less likely to use cigarettes and alcohol at age 14, and they also had lower levels of hyperactivity, inattention, and better prosocial behaviour.¹² Engagement during adolescence also had a positive association; adolescents were less antisocial, less likely to behave criminally, less likely to perceive such behaviour positively, and more like to have better self-control.¹⁴ Alcohol, marijuana, and tobacco use were also less common among teenagers taking part in arts groups.¹⁵

Of course, with observational data, we never have the same certainty over causality that we have through conducting trials where people can be randomised into 'intervention' and 'non-intervention' groups. This is the same challenge faced with any work on cohort data including research into issues such as causes of cancer, dementia, and obesity and effects of lifestyle factors such as loneliness, alcohol use and smoking. But we've used the latest in statistical methods to 'infer' causality, including making the most of the rich longitudinal data to track trajectories of change over time and map the 'chicken vs

4 Tymoszuk U, Perkins R, Spiro N, Williamon A, Fancourt D. Longitudinal Associations Between Short-Term, Repeated, and Sustained Arts Engagement and Well-Being Outcomes in Older Adults. *J Gerontol Ser B*. 2020 Aug 13;75(7):1609–19.

5 Tymoszuk U, Perkins R, Fancourt D, Williamon A. Cross-sectional and longitudinal associations between receptive arts engagement and loneliness among older adults. *Soc Psychiatry Psychiatr Epidemiol*. 2020 Jul 1;55(7):891–900.

6 Fancourt D, Steptoe A. Physical and Psychosocial Factors in the Prevention of Chronic Pain in Older Age. *J Pain*. 2018 Dec 1;19(12):1385–91.

7 Fancourt D, Steptoe A. Physical activity and social and cultural engagement as risk-reducing factors in the prevention of chronic pain in older age: findings from a longitudinal cohort study. *The Lancet*. 2018 Nov 1;392:S34.

8 Rogers NT, Fancourt D. Cultural Engagement Is a Risk-Reducing Factor for Frailty Incidence and Progression. *J Gerontol Ser B*. 2020 Feb 14;75(3):571–6.

9 Fancourt D, Steptoe A, Cadar D. Cultural engagement and cognitive reserve: museum attendance and dementia incidence over a 10-year period. *Br J Psychiatry*. 2018 Nov;213(5):661–3.

10 Cultural engagement predicts changes in cognitive function in older adults over a 10-year period: findings from the English Longitudinal Study of Ageing | Scientific Reports [Internet]. [cited 2022 Jun 22]. Available from: <https://www.nature.com/articles/s41598-018-28591-8>

11 Fancourt D, Steptoe A. Effects of creativity on social and behavioral adjustment in 7- to 11-year-old children. *Ann N Y Acad Sci*. 2019 Feb;1438(1):30–9.

12 Mak HW, Fancourt D. Reading for pleasure in childhood and adolescent healthy behaviours: Longitudinal associations using the Millennium Cohort Study. *Prev Med*. 2020 Jan 1;130:105889.

13 Mak HW, Fancourt D. Longitudinal associations between reading for pleasure and child maladjustment: Results from a propensity score matching analysis. *Soc Sci Med*. 2020 May 1;253:112971.

14 Bone JK, Bu F, Fluharty ME, Paul E, Sonke JK, Fancourt D. Arts and Cultural Engagement, Reportedly Antisocial or Criminalized Behaviors, and Potential Mediators in Two Longitudinal Cohorts of Adolescents. *J Youth Adolesc*. 2022 Aug;51(8):1463–82.

15 Fluharty M, Bu F, Bone J, Sonke JK, Fancourt D, Paul E. Associations of arts and cultural engagement with substance use trajectories in adolescence and early adulthood: a latent growth curve analysis of the Add Health cohort [Internet]. *PsyArXiv*; 2022 [cited 2022 Jun 30]. Available from: <https://psyarxiv.com/nz7ps/>



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egg' as to whether arts precede health or vice versa. We've also used a variety of techniques including some that attempt to mimic randomised controlled trials by matching people who engage in the arts with 'twins' in the same dataset who mirror them on all identifiable important lifestyle factors but who are not engaged in the arts. Naturally, every statistical technique has its strengths and weaknesses. So sometimes we've explored the same research question with multiple different techniques at once to allow these strengths and weaknesses to balance one another out and check that analyses converge on the same finding. We've even replicated some of our findings in cohort studies from multiple countries with different patterns of arts engagement and different health challenges to check there are no spurious contextual effects leading to spurious associations. As scientists, we're constant interrogating our findings, probing for weaknesses and missed explanations. But importantly we also link our observational research back to that coming from intervention studies: if our large-scale long-term analyses find the same patterns as those from rigorous causal trials, we can start to have more and more confidence in what we're discovering.

A large part of our work in recent years has turned to the question of 'why': what is it about the arts that means they have the capacity to affect our health and how does this process happen? Two major developments from our work have been the identification of over 130 "active ingredients" in arts activities that all have the potential to affect health, and over 600 "mechanisms of action" that link these ingredients to specific mental and physical

health outcomes. These ingredients including aspects of arts activities themselves as well as the social components that can be involved in engaging and participating and the context within which activities are delivered, while the mechanisms can be psychological, biological, social and behavioural. We're proposing new complex theoretical models that explain the interrelationship between these ingredients, mechanisms and outcomes in our scientific papers. These models have tremendous significance for how we can design health programmes to prevent, manage, and treat physical and mental health conditions.

Unfortunately, many people face barriers to accessing cultural resources, which is why the arts need to be integrated with health services. One of the main reasons is that people from less advantaged backgrounds are less likely to access arts and cultural activities and are more likely to have poorer health than people of greater affluence.¹⁶ People with mental health conditions,¹⁷ with low levels of happiness,¹⁸ who are in poor health, and who lived in deprived areas are less likely to engage. This is a big challenge because it means that those who are most likely to experience poor health are also more likely to miss out on the health benefits of arts engagement. Fortunately, we've also found

¹⁶ Elsdén E, Bu F, Fancourt D, Mak HW. Frequency of leisure activity engagement and health functioning over a 4-year period: a population-based study amongst middle-aged adults. *BMC Public Health*. 2022 Jun 30;22(1):1275.

¹⁷ Fancourt D, Steptoe A, Cadar D. Community engagement and dementia risk: time-to-event analyses from a national cohort study. *J Epidemiol Community Health*. 2020 Jan;74(1):71–7.

¹⁸ Social engagement before and after dementia diagnosis in the English Longitudinal Study of Ageing | PLOS ONE [Internet]. [cited 2022 Jun 22]. Available from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0220195#sec018>



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that regardless of where people live, whether in deprived or wealthy areas, they experience the same mental health and wellbeing benefits from cultural and community engagement.¹⁹ So the question comes down to how can we help people to connect with the arts, especially when they may need the arts the most yet face barriers to engaging?

This returns us to social prescribing. Social prescribing schemes are vital for equalising arts and cultural access to address health inequalities, but they are far from meeting current health demands. Yet the UK's healthcare needs are inevitably going to increase both in the short-term and long-term due the consequences of the pandemic still affecting people's lives, the cost-of-living crisis, our ageing population, increasing geopolitical tension and its repercussions, the rising burden of mental health, years of underfunding of our NHS, the increasing burden of chronic diseases, the costly overmedicalisation of many health issues, and multiple other challenges.

These are also worldwide problems and the World Health Organisation is already working with us to explore the potential of the arts and schemes such as social prescribing to improve health in communities across the world. The field of arts-in-health offers limitless opportunities for research and health interventions to address these problems. But we need governments, healthcare systems, and investors to prioritise the arts for population health. We need a massive funnelling of capital into the arts and cultural sector so that we have

the necessary vibrant cultural assets available to prescribe people to. And we need to bring together volunteer, community groups, arts organisations, health services and other partners to revolutionise our approach to healthcare delivery.

*The **Social Biobehavioural Research Group**, based at University College London, focuses on the role of social factors on health and is led by Dr Daisy Fancourt. The group has been designated the first **WHO Collaborating Centre on Arts & Health** in the world.*

¹⁹ Fancourt D, Steptoe A. Community group membership and multidimensional subjective well-being in older age. *J Epidemiol Community Health*. 2018 May 1;72(5):376–82.