The long-term public health impact of arts & cultural engagement

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Cultural engagement as a multi-modal intervention

**Individual level**
- Mindfulness
- Emotional expression
- Cognitive stimulation
- Opportunity for agency
- Stress reduction
- Opportunity to learn

**Social level**
- Reduced discrimination
- Social support
- Awareness of healthy living
- Reduced loneliness
- Reduced sedentary behaviours
- Prosocial behaviour modelling

**Community level**
- Skills development
- Economic community benefits
- Employment opportunities
- Virtuous use of community space
- Bridging social capital
- Bonding social capital
- Service signposting
- Virtuous use of community space

**Cultural engagement as a multi-modal intervention**
Connecting cultural engagement to health outcomes

**Individual level**
- Emotional expression
- Cognitive stimulation
- Stress reduction
- Opportunity for agency

**Social level**
- Voice for minority groups
- Social support
- Reduced discrimination
- Awareness of healthy living
- Reduced sedentary behaviours
- Prosocial behaviour modelling

**Community level**
- Economic community benefits
- Employment opportunities
- Virtuous use of community space
- Bridging social capital
- Bending social capital

**PSYCHOLOGICAL**
e.g. enhanced self-efficacy, coping and emotional regulation

**PHYSIOLOGICAL**
e.g. lower stress hormone response, enhanced immune function and higher cardiovascular reactivity

**BEHAVIOURAL**
e.g. exercise, healthy diet, acceptance of care and adherence to prescribed treatments, help-seeking behaviours and low alcohol/smoking/drugs consumption

- Prevention
- Management
- Treatment
- Health promotion
Overview of research at UCL

Research questions

- What type of engagement?
- How? What are the mechanisms?
- Which health outcomes?
- Who benefits most?

Research methods

<table>
<thead>
<tr>
<th>Methodologies</th>
<th>Basic science</th>
<th>Applied science</th>
<th>Population science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys</td>
<td>RCTs / interventions</td>
<td>Cohort studies</td>
<td></td>
</tr>
<tr>
<td>Lab studies</td>
<td>Process / implementation studies</td>
<td>Natural experiments</td>
<td></td>
</tr>
<tr>
<td>Qualitative studies</td>
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<td></td>
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</tr>
</tbody>
</table>

Research outcomes

<table>
<thead>
<tr>
<th>Individual</th>
<th>Organisational</th>
<th>Policy</th>
</tr>
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<tbody>
<tr>
<td>Enhanced engagement</td>
<td>More open, targeted programmes</td>
<td>Security of provision &amp; access equality</td>
</tr>
<tr>
<td>Radio and TV programmes</td>
<td>Research days for community organisations</td>
<td>Report to government / SACs</td>
</tr>
<tr>
<td>BBC Get Creative Festival</td>
<td>Work with Arts Councils</td>
<td>All Party Parliamentary Group</td>
</tr>
<tr>
<td>Public engagement events</td>
<td>Social prescribing with NHS</td>
<td>Consultancy to WHO</td>
</tr>
</tbody>
</table>
Mental health

Physical health

Cognition
Mental health

Physical health

Cognition
Does cultural engagement in older age reduce the risk of developing depression?
Results

Depression incidence rates per 100 person-years

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Depression Incidence Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>48% lower risk</td>
</tr>
<tr>
<td>&lt; once a year</td>
<td>32% lower risk</td>
</tr>
<tr>
<td>1-2 times a year</td>
<td></td>
</tr>
<tr>
<td>Every few months</td>
<td></td>
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<tr>
<td>&gt; Once a month</td>
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n=616 cases detected in follow-up
Does SES explain the association between cultural engagement and depression?
### Methods

#### Propensity score matching analysis

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<thead>
<tr>
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<th>Pre-matching N=8,780</th>
<th>Post-matching N=4,726 (2,363 pairs)</th>
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<tr>
<td>Age</td>
<td>&lt;.001</td>
<td>.53</td>
</tr>
<tr>
<td>Sex</td>
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<td>.72</td>
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<tr>
<td>Employment status</td>
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<td>Educational attainment</td>
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<tr>
<td>Wealth</td>
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Fancourt, D., Steptoe, A. (under review). Cultural engagement and mental health: is socio-economic status an explanatory factor?
Methods

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Fancourt, D., Steptoe, A. (under review). Cultural engagement and mental health: is socio-economic status an explanatory factor?
Results

Depression *prevalence* over 10 years by cultural engagement in matched pairs

![Graph showing depression prevalence by cultural engagement]

- **Infrequent cultural engagement**
- **Cultural engagement every few months or more**

Proportion of sample experiencing depression over 10 year period

- **OR 0.77** 95% CI 0.68-0.87

N=4,726 (2,363 pairs)
Results

Depression *incidence* over 10 years by cultural engagement in matched pairs

- Infrequent cultural engagement
- Cultural engagement every few months or more

OR 0.82  95% CI 0.70-0.98

N=3,184 (1,592 pairs)
How does arts engagement and depression vary over time?
Hobbies and depression

<table>
<thead>
<tr>
<th>HAVING A HOBBY AMONGST ALL OLDER ADULTS</th>
<th>Depressive symptoms (continuous) Coef (95% CI)</th>
<th>Depression (CES-D≥4) OR (95% CI)</th>
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<tr>
<td>Having a hobby, unadjusted</td>
<td>-0.16 (-0.22 to -0.11)</td>
<td>0.77 (0.68 to 0.88)</td>
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<td>Having a hobby, adjusted</td>
<td>-0.15 (-0.20 to -0.09)</td>
<td>0.79 (0.69 to 0.90)</td>
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<tr>
<td>Observations</td>
<td>35,290</td>
<td>10,334a</td>
</tr>
<tr>
<td>Individual observations</td>
<td>8,222</td>
<td>1,990</td>
</tr>
<tr>
<td>Average number (min-max)</td>
<td>4.3 (1-7)</td>
<td>5.2 (2-7)</td>
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Fancourt, D., de Oliveria, C. (under review). Association between having a hobby and depression: support for social prescribing?
### Hobbies and depression

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<tr>
<td><strong>SENSITIVITY ANALYSIS:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>HAVING A HOBBY AMONGST OLDER ADULTS WITH DEPRESSION AT BASELINE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having a hobby, unadjusted</td>
<td>-0.62 (-0.95 to -0.30)</td>
<td>2.03 (1.34 to 3.08)</td>
</tr>
<tr>
<td>Having a hobby, adjusted</td>
<td>-0.63 (-0.95 to -0.31)</td>
<td>2.11 (1.37 to 3.23)</td>
</tr>
<tr>
<td>Excluding participants with depression at baseline</td>
<td></td>
<td></td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Total observations</td>
<td>1,613</td>
<td>1,134</td>
</tr>
<tr>
<td>Individual observations</td>
<td>490</td>
<td>242</td>
</tr>
<tr>
<td>Average number (min-max)</td>
<td>3.3 (1-7)</td>
<td>4.7 (2-7)</td>
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Fancourt, D., de Oliveria, C. (under review). Association between having a hobby and depression: support for social prescribing?
How do emotional responses to creative activities vary in those with and without depression?
Fancourt, D. & Kali, H. (under review). Differential effects of depression on the use of emotion regulation strategies when engaging in artistic creative activities: a propensity score analysis
Does engagement with the arts in primary school affect self-esteem?
Does engagement with creative activities in primary school affect social and behavioural adjustment at the onset of adolescence?
Creative activities and child adjustment

Creative activities and child adjustment

Maladjustment

Creative activities and child adjustment

Maladjustment

49% lower risk

Creative activities and child adjustment

Maladjustment

54% lower risk

25% lower risk

Internalising behaviours
- Depression
- Unforthcomingness
- Writing off adults

Externalising behaviours
- Inconsequential behaviour
- Restlessness

Does reading reduce behavioural problems in pre-adolescent children?
Mak, H & Fancourt, D. (under review). The effect of reading for enjoyment on children’s behavioural and psychological adjustment: A propensity score matching analysis of a population based cohort study
Does arts engagement in primary school encourage healthy behaviours in adolescence?
Can cultural engagement reduce cognitive decline in older age?
Cognitive Reserve

- Social Support
- Positive Affect
- Education
- Modifiable Health Factors (e.g. diet, exercise, substance use)
- Stimulating Activities/Novel Experiences
- Cognitive Training
Is visiting museums and galleries protective against the development of dementia?
Museums and dementia development

Cultural engagement and cognitive reserve: museum attendance is inversely associated with dementia incidence over a 10-year period. British Journal of Psychiatry

Museums and dementia incidence (competing risks)

Socialising

Cultural engagement

- Less than once a month
- Once or twice a month
- Once or twice a week or more

- Less than once a year
- Once or twice a year
- Every few months or more
Museums and dementia incidence (competing risks)

Cox proportional hazards regression
cumulative hazard function: community group engagement

Cumulative hazard of developing dementia

Survival age free from dementia

- Less than once a year
- Once or twice a year
- Every few months or more
Is cultural engagement protective against age-related disability?
What is disability?

Activities of Daily Living
- Getting In and Out of Bed
- Eating
- Bathing
- Getting Around Inside
- Getting Dressed

Instrumental Activities of Daily Living
- Housework
- Grocery Shopping
- Money Management
- Laundry
- Getting Around Outside
- Preparing Meals
- Going Places Outside of Walking Distance
- Medicine
- Telephone Use

Fancourt & Steptoe (under review) A comparison of physical and social risk-reducing factors for the development of disability in older adults: a population-based cohort study
Disability incidence rate per 1,000 person-months

Fancourt & Steptoe (under review) A comparison of physical and social risk-reducing factors for the development of disability in older adults: a population-based cohort study
Disability incidence rate per 1,000 person-months

- Never: 6
- <Once a year: 4
- Once/twice a year: 27% 27%
- Every few months: 44% 46%

Fancourt & Steptoe (under review) A comparison of physical and social risk-reducing factors for the development of disability in older adults: a population-based cohort study

**KEY**
- Cultural engagement
- Moderate exercise
Is cultural engagement protective against the development of chronic pain?
Cultural engagement and chronic pain

Cultural engagement and chronic pain

Moderate-Severe Chronic Pain (generalised)

Once a week
- Vigorous activity
- Moderate activity

Once a month
- Cultural engagement
- Community group participation

50% reduced risk

Is cultural engagement protective against frailty?
Cultural engagement and frailty

- Mobility difficulties
- Activities of daily living
- General health
- Depressive symptoms
- Health conditions
- Cognitive function
Cultural engagement and frailty

Modelled Cumulative incidence of frailty

Age

Cumulative Incidence of Frailty

Never

Once or twice a year

Monthly or more

Less than once a year

Every few months

1.3 times increased risk

Cultural engagement and frailty

Average 10-year frailty trajectories by cultural engagement

Is cultural engagement protective against premature mortality?
Fancourt D & Steptoe A (under review) Arts engagement and mortality: 14-year follow-up analyses of the English Longitudinal Study of Ageing using linked mortality data
Cox proportional hazards models showing associations between cultural engagement and 12-year mortality calculating the percentage of protective association mediated by specific confounding factors

<table>
<thead>
<tr>
<th>Mediator</th>
<th>Adjusted hazard ratio (95% CI)</th>
<th>P</th>
<th>PP AM¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic model (age, sex)</td>
<td>0.68 (0.64-0.73)</td>
<td>&lt;.001</td>
<td>-</td>
</tr>
<tr>
<td>+ education, occupational status &amp; employment status</td>
<td>0.69 (0.65-0.74)</td>
<td>&lt;.001</td>
<td>1.5%</td>
</tr>
<tr>
<td>+ wealth</td>
<td>0.72 (0.67-0.77)</td>
<td>&lt;.001</td>
<td>4.3%</td>
</tr>
<tr>
<td>+ cancer, lung disease, CVD or other chronic condition</td>
<td>0.72 (0.68-0.77)</td>
<td>&lt;.001</td>
<td>0%</td>
</tr>
<tr>
<td>+ depression</td>
<td>0.73 (0.69-0.79)</td>
<td>&lt;.001</td>
<td>1.4%</td>
</tr>
<tr>
<td>+ cognition</td>
<td>0.76 (0.71-0.82)</td>
<td>&lt;.001</td>
<td>4.1%</td>
</tr>
<tr>
<td>+ sensory impairment (hearing and eyesight)</td>
<td>0.76 (0.71-0.82)</td>
<td>&lt;.001</td>
<td>0%</td>
</tr>
<tr>
<td>+ sedentary behaviours</td>
<td>0.78 (0.72-0.83)</td>
<td>&lt;.001</td>
<td>2.6%</td>
</tr>
<tr>
<td>+ other health behaviours (drinking &amp; smoking)</td>
<td>0.79 (0.74-0.85)</td>
<td>&lt;.001</td>
<td>1.3%</td>
</tr>
<tr>
<td>+ loneliness, isolation, living status and marital status</td>
<td>0.79 (0.74-0.85)</td>
<td>&lt;.001</td>
<td>0%</td>
</tr>
<tr>
<td>+ social, civic and hobby engagement</td>
<td>0.81 (0.76-0.87)</td>
<td>&lt;.001</td>
<td>2.5%</td>
</tr>
<tr>
<td>= all</td>
<td></td>
<td></td>
<td>19.1%</td>
</tr>
</tbody>
</table>

Fancourt D & Steptoe A (under review) Arts engagement and mortality: 14-year follow-up analyses of the English Longitudinal Study of Ageing using linked mortality data
Mental health

Physical health

Cognition
Cultural Contexts of Health: The role of the arts in improving health and well-being in the WHO European Region
The long-term public health impact of arts & cultural engagement

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