



**arts
and
minds**

Evidence Dossier

The Value of Arts on Prescription Programmes for the Mental Health and Wellbeing of Individuals and Communities

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Abbreviations

AoP	Arts on Prescription
CBT	Cognitive behavioural therapy
DALY	Disability-adjusted life year
DHEA-s	Dehydroepiandrosterone-sulfate
GAD-7	General Anxiety Disorder Assessment
GP	General Practitioner
IAPT	Improved Access to Psychological Therapies
ICER	Incremental cost-effectiveness ratio
LSOA	Lower super output area
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
OR	Odds ratio
PHQ-9	Patient Health Questionnaire
POMS	Profile of mood states
QALY	Quality-adjusted life year
SCL-90	Hopkins Symptom Checklist
STAI	State-trait anxiety inventory
UK	United Kingdom
WEMWBS	Warwick–Edinburgh Mental Wellbeing Scale

1. Executive Summary

Good mental health is key to achieving our potential, as it contributes to good physical health, relationships, education and work. In the UK, mental health problems affect one in four adults every year and account for 23% of the total burden of disease, yet only 13% of the NHS budget is allocated to their treatment. Considering this, alongside the large economic burden of mental illness (estimated as up to £100 billion annually in England), the clinical and economic need to invest in improving our nation's mental health is evident.

The therapeutic effects of the arts have been recognised for many centuries – engaging with the arts can supplement medicine and other care for people with health problems (physical or mental). In addition, it can build mental wellbeing, which can lead to a wide range of benefits including improved physical health, educational performance and, importantly, increased ability to cope with life and its problems.

Arts on prescription programmes are non-clinical, group-based arts programmes which aim to improve mental health and quality of life for participants. At-risk or vulnerable individuals are referred to the programmes, which are often provided locally by the voluntary and community sectors. There are many examples of arts on prescription programmes that have been set up across the UK, for a wide variety of people and based on a range of art forms.

There is a need for robust evidence to demonstrate the effectiveness of arts on prescription programmes so the treatments that will confer the most benefit to patients can be identified. In addition to clinical effectiveness, cost-effectiveness evidence is becoming increasingly important, as this can be used to allow commissioners to make decisions regarding how best to allocate resources to maximise health benefits for the local population. However, there are numerous challenges involved in generating such evidence for arts on prescription programmes; there has been a great effort to overcome these challenges in recent years, and 'transport arts activity from the periphery into the health research mainstream'. Looking forward, one of the long-term aspirations of the movement is that care packages for people with chronic conditions include payments for arts interventions, as they currently do for medication and other clinical interventions.

The strength of the evidence base for arts in health generally, and arts on prescription programmes specifically, has increased somewhat in recent years. Reliable evidence was found to support the following messages about the value arts in health in general, and arts on prescription programmes in particular:

- Arts participation is strongly associated with positive mental wellbeing
- The use of the arts in healthcare is associated with improvements in a wide range of outcomes, including mental health, and in a variety of patient populations
- Participating in community choral singing is associated with a range of positive health and wellbeing outcomes, in different patient populations
- The act of art production is associated with improvements in mood and increased mental resilience
- Participation in community-based arts programmes results in positive outcomes with regard to mental wellbeing, social isolation, and anxiety or depression for people with mental health problems
- Art participation programmes are likely to be cost-effective from a healthcare perspective, and may result in overall savings for the public sector compared to current standard-of-care alone
- The positive effect of arts-based programmes on mental health is also evident in the workplace

However, there are still relatively few studies that report such evidence. If arts on prescription-style projects are to be widely adopted and routinely available, a larger and more robust overall evidence base is needed. Given the need for an improvement in the quality of evidence generation, it will be important to improve the design and evaluation of as many programmes as possible – essential to this will be the coordination of efforts across a range of programmes and providers, such that the evidence generated can be pooled effectively and used as a whole.

2. Context

Health is a state of complete physical, mental and social wellbeing, not merely the absence of disease or infirmity.

World Health Organization¹

2.1. Health, Mental Health and Mental Wellbeing

Mental Health

Mental and physical health are inextricably entwined; good mental health is fundamental to good physical health, relationships, education and work, as well as being key to achieving our potential.

People with mental health problems (also known as mental ill-health) experience periods of profound loss of positive psychological and social factors, including positive feelings, confidence, self-esteem, social support, expectation, hope, abilities, skills, organisation and structure.² Common mental health problems such as anxiety, depression, panic disorders, phobias and obsessive compulsive disorder can cause great emotional distress, and can affect how people feel about themselves, conduct relationships, handle stress or deal with loss.³ Therefore people experiencing mental health problems may struggle to realise their own potential, cope with the normal stresses of everyday life, work productively and fruitfully, or make a contribution to their community.

Mental Wellbeing

Mental wellbeing is not the absence of mental health problems. It has been defined as the ability to cope with life's problems and make the most of life's opportunities.⁴ As an important contributor to overall health, mental wellbeing is about feeling good and functioning well, both as an individual and collectively.

Whilst mental health and mental wellbeing are related, a person's mental wellbeing is independent of their mental health status.⁵ People with mental health problems can enjoy good mental wellbeing, while some people without a diagnosed mental health problem may find it difficult to cope with life's problems. An important factor common to both good mental health and mental wellbeing is the ability to cope with life and its problems, known as resilience.

2.2. The Burden of Mental Health Problems

2.2.1. Global Burden

Mental health problems are a cause of substantial disease burden at a global scale. Depression alone accounts for an estimated 4.3% of the total global burden of disease with 13% thought to be due to mental, neurological and substance abuse disorders.⁶ In an analysis of the findings from the 2010 Global Burden of Disease Study, major depressive disorder was found to be the second most common cause of years lost due to disability, behind lower back pain;⁷ whilst anxiety disorders were found to be the sixth leading cause of disability, irrespective of country income.⁸ The economic consequences of mental health problems are also substantial - a recent study estimated that the cumulative global impact in terms of lost economic output will amount to US\$ 16.3 trillion between 2011 and 2030.⁶

Box 1: Burden of Disease

Burden takes into account both the severity of an illness and its impact on the length and quality of life at a population level. These measures can be applied to factors that affect both physical and mental health.

Clinical burden

The clinical burden of an illness is related to its **incidence** (the number of new cases arising over a given time period), **prevalence** (the proportion of people with the illness at any point in time), **morbidity** (the extent to which it causes disability or ill health) and **mortality** (the number of people with the illness who will die during a given time period).

Economic burden

This includes the direct costs of a disease (such as consultations and treatment) but also indirect costs caused by loss of productivity and increased reliance on public services or welfare (see [Box 4: Principles of Health Economics](#)).

Social burden

Many health problems have impacts that reach far beyond the sufferer, which may include the need for family members to provide care and the social isolation of the sufferer. For some illnesses, social burden can also include the stigmatisation of a sufferer and their family.

2.2.2. UK Burden

It is estimated that one in four people in Britain will experience a mental health problem in any given year, and that more than 7 million people (about one in six of the adult population) will have a significant mental health problem at any one time.⁹ One in ten children between the ages of 5 and 16 has a mental health problem,¹⁰ and this can often persist into adulthood. The most common mental health problems in Britain are mixed anxiety and depression.¹¹

Alongside the evident clinical burden, mental ill-health has a profound effect on the UK economy. Most obviously, the public sector bears an enormous cost of treating mental health related illness and disease. In 2012/13 the direct cost of mental health disorders to the NHS, including the cost of primary care, inpatient and outpatient costs, secondary care, ambulance and A&E costs, and community care, was £11.91 billion.¹²

When considering the costs of caring for people with mental health problems, the cost of informal care (given by family and friends) should also be considered – in England, 13% of all informal care is due to mental health disorders.¹³ This care not only costs the hours spent caring, but also carries an additional non-monetary cost in terms of the negative impacts on the health, quality of life, personal relationships and mental health of the carers themselves.¹³

Despite the seemingly large healthcare costs, these make up only a fraction of the burden of mental ill-health on the UK economy. There are several other factors to be considered, namely the welfare costs, costs borne by the education sector, losses in quality of life of patients and carers, and the cost to the UK economy in terms of productivity losses in the workplace. Specifically, in 2012, the burden of the mental health disorders in the UK in terms of reduced quality of life (390,000 DALYs¹⁴) amounted to approximately £53.6 billion;¹⁵ in 2011/12 an estimated £1.70 billion was spent on Disability Living Allowance for those with mental health problems,¹⁶ whilst the additional care required to manage the 10% of children in Britain that suffer from psychiatric disorders, such as hyperactivity or emotional disorder, was estimated to cost the health, social care and education system £1.47 billion in 2008.¹⁶ In total, the 2009/10 estimate of the total cost of mental health related illness and disease in England was £105.2 billion, a 35% increase from 2002/3;¹⁵ the cost of output losses in the economy, resulting from the effects on people's ability to work, was estimated to be 29% of the total cost.¹⁵

2.2.3. Mental Health and the Workplace

Working life is a contributor to the burden of both physical and mental health problems. According to a survey by the Health and Safety Executive (UK), an estimated 1.2 million working people experienced a health problem that they believed to have been caused by their current or past work in 2013/14.¹⁷ Stress, depression and anxiety was identified as the largest cause of such illnesses,¹⁷ and the prevalence of stress, anxiety and depression has been found to be highest in the following industries: public administration and defence, human health and social work activities, education, and financial and insurance activities.¹⁸

Time taken off work due to mental ill-health is known as mental-related absenteeism. In 2013 in the UK, employees were absent for 15.2 million days due to mental health problems such as stress, depression and anxiety.¹⁹ Further estimates suggest that, taking all mental health-related issues into consideration, the total number of working days lost annually reaches 70 million. This corresponds to an £8.4 billion cost of sickness absence at the national level, or £335 per employee per year.²⁰

More difficult to quantify, but of equal if not greater significance, is presenteeism. This occurs when employees who should be taking time off work to recover from mental ill-health are still attending work, simultaneously lowering productivity and slowing their recovery by doing so. Employees who suffer from mental ill-health are likely to display a productivity slump if they are attending work whilst ill, independent of their salary – consequently, the costs of presenteeism are greater than those of absenteeism.²⁰

Overall, absenteeism and presenteeism plus their effects on company turnover were estimated to cost the UK economy a total of £25.9 billion.²⁰ For individual employees, the annual cost to the employer of mental health-related absenteeism and presenteeism are expected to be £1,035 per employee, per year.²⁰

Given the clinical and economic burden of mental health problems, improving mental health confers obvious benefits to individuals and the economy. Improving mental wellbeing may also confer additional benefits in terms of improved physical health, health behaviours and preventing the development of mental illness.²¹

2.3. Promoting Mental Health and Wellbeing

2.3.1. Current Treatment Options for Individuals with Mental Health Problems

There are a number of recommended treatment options for those suffering from mental ill-health that have different approaches:

- **Medication**

The mainstays of medication in mental health problems are anti-depressants and anti-psychotics, which have been widely used since the 1950's. NICE guidelines provide recommendations for when medications should be started, switched, or combined with other forms of treatment during acute, chronic or relapse episodes of mental health disorders.²²

- **Psychotherapy**

There is accumulating evidence of increased benefits when psychological treatments are combined with pharmacotherapy.²³ Psychotherapy is delivered by a therapist and, broadly speaking, can be grouped into 6 types: supportive psychotherapy, psychoanalysis, psychodynamic psychotherapy, cognitive therapy, behavioural therapy and interpersonal therapy.²⁴ NICE guidelines provide recommendations for the intensity and duration of psychological interventions,²² and the NHS launched the Improving Access to Psychological Therapies (IAPT) programme, with the aim of making effective 'talking-based treatment' for depression more widely available to patients via their GP.²⁵

- **Non-pharmacological interventions**

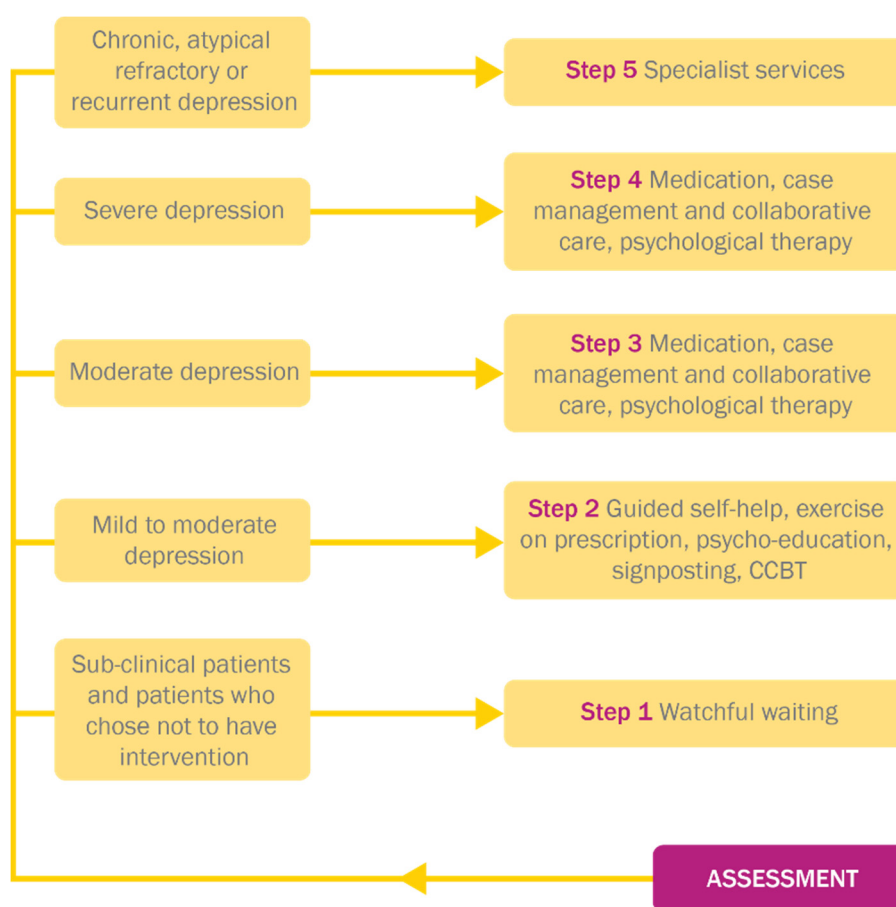
Non-pharmacological interventions for the treatment of mental health, where magnets or implants are used to stimulate brain cells thought to release chemicals that regulate the mood, may be suitable for patients whose symptoms do not improve after medications or psychotherapy.²⁴

- **Non-clinical interventions**

Non-clinical interventions look to provide a structured path to recovery and can supplement medicine and other care. Non-clinical interventions often take the form of programmes provided by the voluntary and community sectors, and patients may be referred from primary care.²⁶ Non-clinical interventions may include arts-based therapy.²⁷

The National Institute for Health and Care Excellence (NICE) provides "pathways" that outline all NICE guidance, quality standards and materials to support care for adults and children with specific mental health problems. These include guidelines for recognising and assessing mental health problems, as well as recommendations for pharmacological and non-pharmacological treatment options available to patients with various severities of mental health problems.²⁸ In the case of treating depression, the guidance advocates a stepped care approach, based on the principle of offering the least intensive intervention first and stepping up care to more intensive interventions if needed, as illustrated in Figure 1.²⁶

Figure 1. A stepped care approach to treating depression (adapted from Social prescribing for mental health – a guide to commissioning and delivery²⁶)



2.3.1. The Availability of Mental Health Services in the UK

For people who are at-risk of or are experiencing mental health problems in the UK, treatments are provided through services including consultations with a General Practitioner (GP), in-patient or out-patient services, community care services and day activity services. However, the decision as to how to treat individual patients is ultimately down to their doctor and the availability of services, which may vary by local area.

Currently only 24% of people with anxiety and depression access treatment through the NHS, with the equivalent proportion for arthritis and chronic pain being 51% and 72%, respectively,²⁹ indicating the lack of parity between access to and use of mental and physical health treatments. The fact that mental health problems account for 23% of the total impact of ill health in the UK,³⁰ whilst only 13% of the NHS budget is allocated to mental health³⁰ and local authority public health strategies only allocate 1.4% of public health spending to mental health, further illustrates this disparity.²⁹

The demands on mental health services have increased whilst funding to meet these needs is shrinking – over the five years from 2010 to 2015 mental health trusts saw their budgets fall by 8.25%, while referrals to community mental health services increased by 18.5%.³¹ In an attempt to help put mental health services on a par with those for physical health, the NHS Chief Executive Simon Stevens announced in October 2014 that the NHS in England is to invest a further £120 million over two years in improving mental health services.³² However, given the increasing financial pressure on mental health services, it is essential that the importance of mental health and wellbeing is understood and communicated effectively.

That said, it must be remembered that even with sufficient mental health care services, some people who could benefit from them may choose not to use them. Therefore, in addition to working to meet the need for increased mental health services, efforts to encourage those who may benefit from treatment to access it should also be

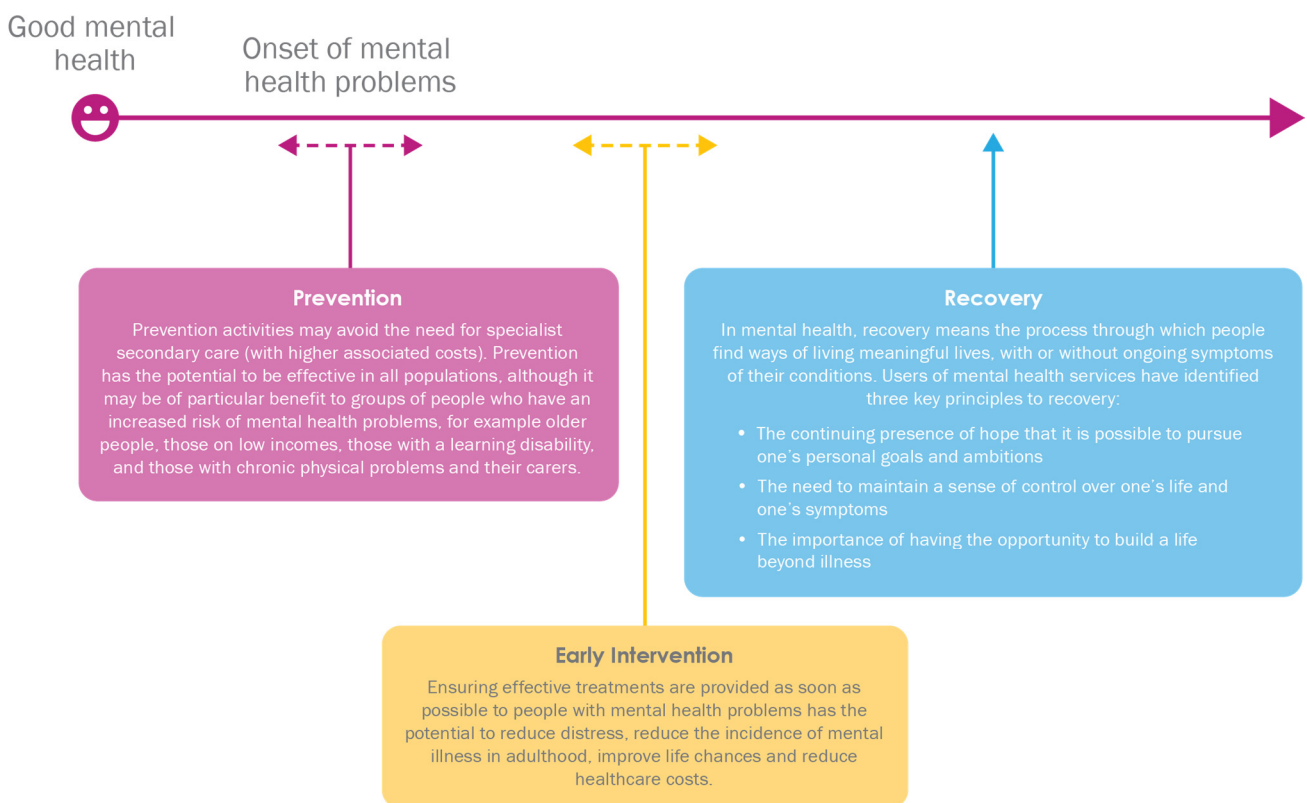
made, including increasing awareness and reducing the widespread stigma and discrimination regarding mental ill-health.

2.3.2. Prevention, Early Intervention and Recovery

Whilst NICE provides useful guidance on how to treat individuals with mental health problems, actions to promote mental health and wellbeing to individuals with all levels of mental health can also be taken to prevent mental ill-health. The potential clinical and economic benefits of working to help prevent people from developing mental health problems, or of identifying those showing signs of developing mental health problems and treating them early, are being increasingly examined and better understood. The principles and potential benefits of prevention, early intervention and recovery are shown in Figure 2. The importance of helping people experiencing mental illness to recover is well-recognised by the government – having more people recovering from mental health problems was identified as part of the mental health outcome strategy in 2011.³³ In addition, the Department of Health has commissioned a dedicated project which aims to change how the NHS and its partners operate so that they can increase focus on helping people to recover (Implementing Recovery through Organisational Change).^{33, 34}

Having recognized the persistent failure for persons who need mental health care to access timely and effective treatment, the NHS has set out a commitment to close the gap in standards of healthcare delivery for mental health. These include investing in early intervention services for children and young adults, boosting access to mental health crisis services, and introducing access and waiting time standards in mental health care.³²

Figure 2. Principles of prevention, early intervention and recovery in mental health (adapted from Guidance for commissioners of primary mental health care services³⁵; Early intervention³⁶; What is recovery?³⁷)



2.3.3. Social Prescribing

Mental health and wellbeing encompass much more than an individual's clinical symptoms of depression or anxiety. These include the ability to cope with the demands of a family or a job, to engage in social interactions, to maintain a positive sense of self and a hopeful outlook for the future. Social prescribing is part of this holistic framework that recognises the influence of social, economic and cultural factors on mental health outcomes.

Social prescribing is a mechanism for linking patients with non-medical interventions (Section 2.3.1).²⁶ Social prescribing can include opportunities for arts and creativity, physical activity, learning new skills, volunteering, mutual aid, befriending and self-help, as well as support with, for example, employment, benefits, housing, debt, legal advice, or parenting problems. The most common examples of social prescribing are primary care-based projects that refer at-risk or vulnerable patients to a specific programme, for example exercise on prescription and arts on prescription.

Such non-clinical approaches are gaining resonance within mental health care as a means of extending the range of options available for people with mental health problems. The reasons for this include:

- The focus on, and opportunities for, recovery on many social prescribing schemes may allow patients a more structured path to recovery and reduce the chances of recurrence of the mental health problem, due to the resilience developed (both personal and social).
- Social prescribing schemes have the potential to strengthen links between healthcare providers and community, voluntary and local authority services that influence public mental health.
- By providing an alternative option for suitable patients, social prescribing may allow better use of specialist mental health services.

Interviews with healthcare professionals who referred patients to an arts on prescription programme showed that the referrers valued a social prescribing service, and consider it to have personal and social benefits for the participant.³⁸

3. Arts and Health

The overall field of arts and health concerns arts-based activities that aim to improve individual and community health and healthcare delivery, and which enhance the healthcare environment by providing artwork or performances.

Arts Council England³⁹

3.1. Defining 'Arts and Health'

A wide variety of creative activities are encompassed within the term 'the arts' – the Arts Council England definition includes: literature and writing, theatre and drama, dance, music and visual arts, which itself covers crafts, new media, architecture, design, moving image and combined art.⁴⁰ The field of arts and health is also very diverse, encompassing work in both healthcare and community settings, and across a wide range of artistic practices.³⁹ The National Alliance for Arts, Health and Wellbeing divides the wide range of ways that the arts are employed in healthcare into the five main areas shown in Figure 3.²⁷

Figure 3. A summary of arts in health (from National Alliance for Arts, Health and Wellbeing²⁷)



Art therapy

Art therapy involves the use of the arts as a psychotherapeutic tool, and is undertaken by qualified arts therapists. Such therapy often involves the use of drama, music or visual arts as tools for communication, usually on a one-to-one basis.



Participatory arts programme

Participatory arts programmes involve providing opportunities for people with physical or mental health problems to engage with the arts as a tool; to improve their overall wellbeing. Such programmes may take place in a variety of settings, including care homes, GP surgeries, hospitals, or in the community.



Arts on prescription

Also known as arts on referral, this category is defined by the fact that participants are referred to the programmes, which provide arts and creative activities as an adjunct to conventional therapies. The interventions and settings for such programmes are varied.



Arts in the healthcare environment

This area of arts and health involves incorporating artwork into the healthcare environment to improve the experience of patients and staff. Examples include art exhibitions in hospitals, or having artists working to improve the hospital environment more generally, for example the lighting.



Medical training and medical humanities

The arts can be used as a tool for teaching health workers, and for also exploring ethical issues in medicine. Additionally, participating in the arts activities can be used to help healthcare workers with their work in various ways.

Given the breadth and variety of activities that can be included within these areas, it is perhaps unsurprising that a clear consensus of the definition of arts and health is difficult to reach. The arts are also increasingly being used as a tool to improve health; the importance of good mental wellbeing in health and the ability of the arts to improve mental wellbeing (specifically in preventing mental illness via increasing resilience) is being increasingly recognised. As such, the scope of arts and health is likely to expand further to include arts-based activities for those who are not currently experiencing mental health problems.

3.2. Arts on Prescription

This section focusses on arts-based programmes that:

- Are non-clinical (ie. do not involve the use of art therapy), and as such are not delivered by qualified art therapists^a
- Are delivered in a community setting^b
- Are group-based, and therefore provide social as well as creative opportunities for participants
- May be part of a treatment plan agreed with an individual's healthcare provider (arts on prescription), be provided to people who opt to attend (self-referral), or a mixture of the two

For ease and clarity, such non-clinical, community-based, group-based arts-based programmes have been termed 'arts on prescription-style programmes' in this report, as the processes, experiences and potential benefits are likely to be independent of whether the participants were referred by their healthcare practitioner or themselves.

3.2.1. Arts on Prescription Programmes across the UK

A survey conducted in 2004 found that projects were offering arts activities to almost 4,000 people with mental health needs in England each week.⁴¹ At present, there are many examples of arts on prescription-style programmes that have been set up across the UK, for a wide variety of people and based on a range of art forms, including singing, dancing, theatre, painting and photography. A number of these programmes are based around music, and singing in particular. Whilst the demographics of these singing groups are varied, many have been set up particularly for older people,^{42, 43} and for people living in the community who are experiencing mental health problems.²

There are also a number of arts on prescription-style programmes based around participatory visual arts, such as crafts, drawing, painting and sculpting. As with singing, a number of these programmes are for people with mental health problems⁴³⁻⁴⁵ or the elderly.⁴⁶ However, there were also other groups who are included, for example vulnerable women in the criminal justice system⁴⁷ and people with obesity.⁴⁶

A study of healthcare professionals from the primary care, secondary mental health care and voluntary sector who had referred their clients to an arts on prescription-style programme found that the referrers valued the social prescribing service, and considered it to have personal and social benefits for the participants.³⁸

3.2.2. How Arts on Prescription Programmes Bring About Improved Health

Understanding the cause (or causes) of any improvements following arts on prescription-style programmes can be difficult, particularly as there are many aspects of the programme that could potentially affect the outcomes for the participants. In medical terminology arts on prescription-style programmes are a "complex intervention", meaning that they have several interacting components that may be difficult to standardise, affected by the local context, and difficult to research and evaluate using traditional methods.⁴⁸

Morrison and Clift outlined how singing-based programmes may theoretically help to improve aspects of mental health that are lost when an individual is suffering from a period of mental ill-health, as listed below.² When examining this list, it is easy to see how many of these potential benefits of singing-based programmes are also relevant to other arts on prescription-style projects.

^a It is possible that those running the sessions could also be qualified art therapists, however this is not a requirement, and they would not deliver art therapy to the participants as part of the program.

^b Although sometimes they may be delivered in care-homes or GP surgeries, for practicality.

- **Positive feelings.** Singing is a joyful and uplifting experience, generating positive feelings which counteract feelings of stress or anxiety and help distract from negative thoughts or feelings.
- **Expectation and hope.** Enjoyable activities can be looked forward to, and positive memories remain for hours and days afterwards. If a performance is involved, participants can experience enhanced expectations and feelings of reward.
- **Self-belief.** Participating can allow individuals to experience a change to seeing themselves as a member of a choir, instead of just as a patient, which can raise their confidence and self-esteem. Performances can bring a sense of recognition, and also help to reduce the stigma of mental health by others.
- **Abilities and skills.** Learning new skills can help participants to concentrate and focus, which may provide a distraction from other concerns. Gaining new skills may also give confidence, which individuals may utilise to learn other new skills.
- **Organisation and structure.** The goal of attending regular, structured sessions may give participants motivation and a sense of purpose, which is important as many patients can feel adrift and disconnected when ill. This motivation may act as a springboard into other weekly activities.

In order to elucidate which of the above aspects may be important for the outcomes of a particular programme, or group of programmes, researchers can study and analyse the testimonies of programme participants (qualitative evidence; see [Appendix 1](#) for further information about how mental health and wellbeing is measured). For example, one study used case studies from six diverse arts and mental health projects with the aim of exploring the processes through which the projects achieved benefits for participants, to complement the quantitative strands of research.⁴⁹ Thirty-four individual interviews were analysed, revealing a total of eight processes that were associated with a range of outcomes relating to three key aims identified at the project workshops: improving mental wellbeing, decreasing mental distress and reducing social exclusion. The researchers found that three processes were important for most participants in all six projects:

1. **Getting motivated** inspired hope and reduced inactivity
2. **Focusing on art** provided relaxation and distraction
3. **Connecting with others in a supportive environment** decreased social isolation and increased confidence to relate to others

Other processes, including self-expression promoting self-acceptance, and enhanced self-esteem leading to reduced social exclusion, were identified as being important for some participants in all projects, or in some but not all projects. The range of processes that may be involved in improving outcomes illustrates the complexity of such programmes, whilst the fact that the processes are not the same for all projects illustrates the importance of further study to understand each one, in order to optimise the outcomes for individual patients.

It may be that arts on prescription-style programmes act as a catalyst for positive change in the lives of participants. Interviews with 10 participants suggested that improvements achieved following participation in arts on prescription-style programmes, such as improved social and communication skills, increased motivation and aspiration, appear to facilitate longer-term positive outcomes such as educational achievement and voluntary work.⁵⁰

Box 2: Quantitative and Qualitative Research

Evidence can be divided into two main categories: qualitative and quantitative. Medical research often focuses heavily on quantitative evidence because this is the easiest to collect, analyse and present, but this may not fully capture the complexity of outcomes affected by an intervention like Arts on Prescription.

Quantitative Research

This is the analysis of any outcomes that can be assigned to a numerical or categorical scale. For example, this may include the proportion of people who recover from depression over a set period of time. Quantitative evidence can be gathered by using questionnaires or interviews with multiple-choice outcomes, or from direct physical or biological measurements. Quantitative results can be compared easily between studies if similar measures are used, and can be used in cost-effectiveness analyses (see [Box 4: Principles of Health Economics](#)). However, categorical answers can be restrictive, and researchers must pre-select which outcomes will be investigated meaning they may miss unexpected or complex outcomes.

Qualitative Research

This is often gathered by using interviews or questionnaires completed by participants, their family or social contacts, or staff and volunteers involved with programme delivery. The results can be presented as case studies, or can be analysed using thematic approaches to draw out similarities and differences between participants' experiences. Findings can be more compelling to a general reader, but the analysis and reporting may be more prone to bias than quantitative research and it can be difficult to compare results between studies.

Mixed Methods Research

Mixed methods research combines quantitative and qualitative analyses, and researchers may therefore be able to draw rigorous statistical conclusions at the same time as exploring the complexity of an intervention.

Realist Evaluation

Realist evaluation is an effort to answer the question: "What works, for whom, in what respects, to what extent, in what contexts, and how?" It acknowledges the context of an intervention as well as the personal experiences of participants. A realist evaluation normally uses mixed methods.

3.2.3. The Arts and Minds Arts on Prescription Programme

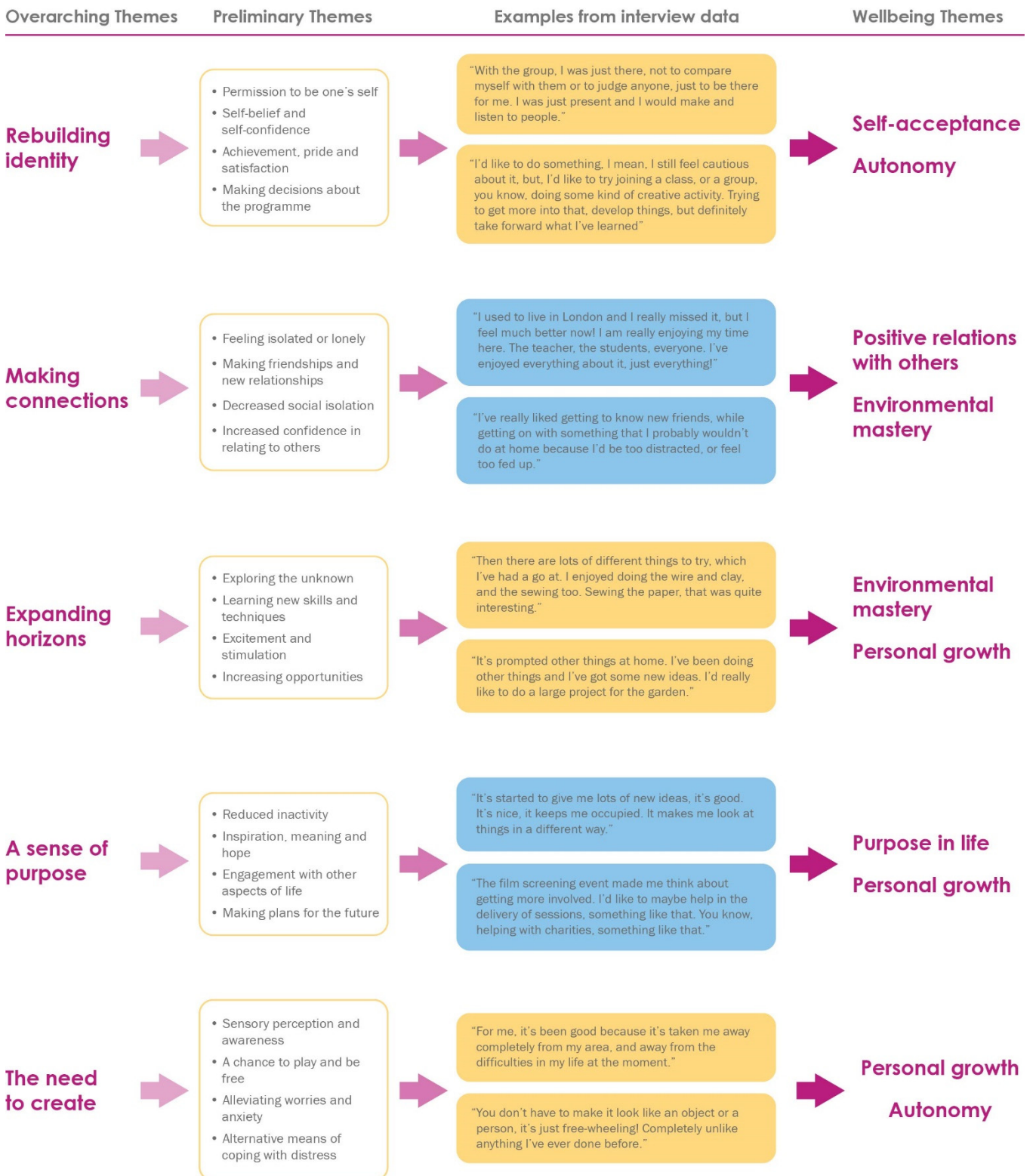
The Arts on Prescription (AoP) programme run by Arts and Minds is a visual arts-based programme for adults with mental health problems, specifically mild to moderate anxiety, stress or depression, which is run by the charity Arts and Minds. The AoP programme consists of weekly art workshops including a range of visual arts activities, such as drawing, collage, stitching, clay and wire work. Each workshop is delivered in the community by one professional artist, supported by one mental health counsellor, and lasts two hours. During the twelve-week programme, three additional social gatherings are also held in cultural venues such as cinemas, churches and museums. A pilot of the programme was run in 2010, with 40 participants. The evaluation of this found that the vast majority of participants experienced reduced levels of anxiety and depression following the programme.⁴⁵

To build on this success, the AoP 2012 programme was run with the aim of increasing the capacity for producing evidence to support the outcomes. This was done by including a randomised comparison group, to enable a counterfactual analysis of what would have happened without the AoP programme, and by increasing the sample size, to allow for statistical tests of significance. Analysis of the quantitative outcomes of the AoP 2012 programme showed that programme participants reported significant reductions in anxiety, depression and social isolation over the course of the study, whilst those on the waiting list experienced minimal change in these factors.⁴⁵ More details of the quantitative clinical results of this study can be found in section 4.2.5. In addition, data from this programme were used to inform analysis of the economic value of the programme, comparing the cost-effectiveness of AoP plus an Improving Access to Psychological Therapies (IAPT) programme to that of IAPT alone. This study found that if a 37.5% rate of recovery from depression is achieved, then AoP is expected to achieve a cost-effectiveness that meets the threshold for funding on the NHS, and that cost savings would be achieved if a recovery rate of 70% is achieved.⁵¹ More details on this study, including its limitations, can be found in section 4.2.6.

The evaluation of the AoP 2012 programme also explored the expectations and experiences of participants via semi-structured interviews which were held at the beginning and end of the workshops. These were analysed with

the aim of looking at the lived experience of the participants, while also exploring six dimensions of wellbeing (self-acceptance; positive relations with others; autonomy; environmental mastery; purpose in life; personal growth).

Figure 4. Thematic analysis of Arts on Prescription interview data



Looking forward, one of the long-term aspirations of Arts and Minds is that care packages for people with enduring conditions should include payments for arts interventions, as with medication and other clinical interventions. For this to happen, arts on prescription-style projects will need a strong evidence base. Arts and Minds are planning to

contribute to this by delivering and evaluating a scaled-up AoP programme, and have recently partnered with the not-for-profit research institute RAND Europe to help achieve this aim. In addition, the charity plans to:

- Investigate whether the positive outcomes seen in the population of AoP 2012 extend to other groups, including the elderly and young people.
- Evaluate the sustainability of the outcomes using follow-up studies, and explore ways to allow participants to maintain their participation in the arts after completion of the programme.

4. The Value of Arts and Health

Although the therapeutic effects of the arts have been recognised for many centuries, there is a need for robust evidence to demonstrate the effectiveness of arts in health programmes so the treatments that will confer the most benefit to patients can be identified. In addition to clinical effectiveness, cost-effectiveness evidence is also becoming increasingly important, as it can be used to allow commissioners to make justified and well-informed decisions regarding how best to allocate available resources to maximise health benefits for the local population.

4.1. Development of the Evidence Base for Arts and Health

In 2002, the Health Development Agency carried out a review of evaluations of community-based arts and health participation projects in the UK.⁵² Although some evidence was found that such projects increase wellbeing and/or self-esteem, this was anecdotal in nature. Otherwise, this report found that few projects directly provided information regarding health (or social matters related to health) based on formal instruments of measurement, thereby limiting their ability to report on the nature of health improvements associated with the projects.⁵³

Four years later, in 2004, a systematic review of medical literature was undertaken by Dr Rosalia Staricoff with the aim of strengthening existing anecdotal and qualitative information demonstrating the impact that the arts can have on health. This review encompassed studies of community-based arts and health programmes as a sub-set of the studies identified as relevant to the effects of the arts in mental health care. Evidence cited in the review came from a variety of art-forms and patient groups, but mainly from music and for patients with dementia. Promisingly, the use of arts interventions in community settings to improve health was highlighted as a field with an emerging evidence base, which warranted further exploration and review (see [Appendix 1](#) for information about how mental health and wellbeing is measured).⁵³

More recent reviews, including an evidence review undertaken by Arts Council England published in 2014, indicate that over the past decade there has indeed been more research in the field of arts in health. Importantly, a number of studies identified in these reviews measured the impact of applied arts and culture interventions on specific health conditions, for example depression, dementia and Parkinson's disease. The increasing overall quality of evidence that has been generated in recent years is likely helped by initiatives that are specifically designed to assist those who develop, deliver and evaluate arts and health programmes to increase the strength of their research. An example of such an initiative is the Aesop 1 Framework, which was created by the Rayne Foundation to 'transport arts activity from the periphery into the health research mainstream'.^{3, 51, 54}

4.2. Recent Evidence Supporting the Value of Arts and Health

Ten studies have been identified for inclusion in this dossier that rigorously examine the effect of arts-based interventions, and so provide reliable and robust evidence to support the value of arts in health. As the focus of this research is on community-based arts programmes, studies that only included art therapy, or arts-based interventions delivered in a clinical setting have not been included. A summary of studies is given in Table 1. These studies provide evidence to support the value of arts-based interventions in a variety of health outcomes and patient groups, as listed below the table (see [Appendix 1](#) for information about how mental health and wellbeing is measured).

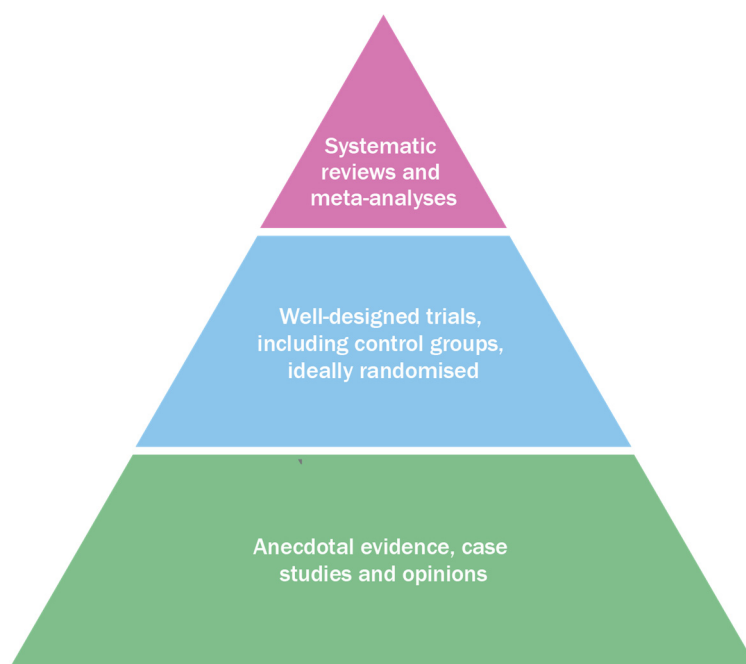
Box 3: Levels of Evidence

In clinical research, evidence can be grouped into three main levels: systematic reviews, trials, and case studies. Although trials can take many formats, the gold standard is randomised controlled trials (RCTs). It is important to consider the design of a study when interpreting its results and conclusions.

Systematic Reviews

Systematic reviews attempt to find all relevant published or unpublished evidence relating to a research question, and to appraise the quality of each piece of evidence. Systematic reviews follow a pre-specified protocol so the investigators cannot ignore any evidence that disagrees with their hypothesis. Overall, this provides a more detailed overview of the strength of evidence for (or against) an intervention, and reduces the risk of bias in the findings. Systematic reviews are the highest standard of evidence, but rely on the availability of high-quality primary evidence in order to be useful.

Figure 5. The Evidence Pyramid



Randomisation

Randomisation is a key feature of high-quality trials. If the investigators in a study are allowed to choose which individuals will participate in their intervention, then they might select the individuals who have the biggest chance of benefiting from the intervention. Although this is good for the individuals, it may make the effects of the intervention seem larger than they are in reality. To ensure that the study is fair, patients should instead be randomly assigned to the intervention group or the control group.

Control Groups

A control group is a group of participants who receive no intervention, a different intervention, or a “dummy” intervention (placebo). This allows researchers to show whether their intervention has a greater effect than doing nothing, or doing something different. This is important because some people will get better or worse just because of chance – for example, on average 23% of adults with depression will get better without treatment within three months,⁵⁵ so an effective intervention would need to help more than 23% of participants recover over the same time frame.

Observational vs Interventional Studies

Observational studies differ from interventional studies because the researchers cannot control or influence which intervention or activity a subject participates in. Although observational studies can identify relationships between factors, they usually cannot draw any conclusions about causality. For example, if an observational study finds a relationship between arts participation and happiness, it is possible that the participation caused the increase in happiness, but it is also possible that happier people are more likely to participate in arts. Alternatively, both conclusions may be correct. In an interventional study the participants cannot choose their own activities or interventions, so if a relationship is found then it is easier to conclude that the intervention caused the outcome.

Case Studies and Anecdotes

Case studies and anecdotes can provide useful supporting evidence, and may be highly persuasive outside of a scientific or clinical environment. They can be particularly valuable for highlighting aspects of individual participants' experiences, but should be treated with caution due to the high risk of bias in their selection and presentation.

Table 1. Summary of studies that provide evidence for the value of arts and health in a community setting

Author, year (Name)	Type of Study (type of analyses)	Arts Intervention	Population	Study Summary	Conclusion
Renton et al., 2012 ⁵⁶	Observational (quantitative)	Arts participation (receptive and active)	Adults in low income areas in London (n=4,107)	This study used data from the Well London baseline survey to examine the association between participation in arts and cultural activities and mental wellbeing.	Arts participation was found to be strongly associated with positive mental wellbeing, with no evidence of confounding by socioeconomic or sociodemographic factors.
Fujiwara and MacKerron, 2015 ⁵⁷ <i>(Mappiness)</i>	Observational (quantitative)	Cultural engagement	UK adults with the 'Mappiness' iPhone application (n>10,000)	This study used data collected using an iPhone application to investigate the relationship between cultural engagement and momentary wellbeing, with a focus on happiness and relaxation.	All arts and culture activities were found to be significantly associated with happiness and relaxation, even after controlling for a range of other determinants of wellbeing.
Staricoff, 2004 ⁵³	Systematic literature review (qualitative)	Arts interventions (both clinical and non-clinical settings)	N/A	This systematic review identified 385 references related to the arts and humanities in healthcare. These were divided into six categories: 1) the effects of the arts on clinical outcomes and 2) in mental health; 3) the effects of the arts and humanities on staff outcomes and 4) on education and training of practitioners; 5) the effects of different art forms; and 6) mechanisms of art perception.	The author concluded that there is strong evidence of the influence of the arts and humanities in achieving effective approaches to patient management, as well as to the education and training of health practitioners.
Cohen et al., 2006 ⁴² <i>(Creativity and Ageing)</i>	Controlled, non-randomised trial (quantitative)	Chorale	Healthy adults aged ≥64 (n=166)	In this sub-study of the Creativity and Ageing Study, participants were recruited to specific groups (chorale or no intervention). Changes in self-reported measures of physical health, health service utilisation, mental health and engagement in social activities from baseline to 12 months are presented.	Participating in a chorale as opposed to usual activity was associated a number of positive outcomes at 12 months, including higher overall rating of physical health, fewer doctor visits, better morale and less loneliness.
Clift and Morrison, 2011 ⁵⁸	Observational (mixed methods)	Choral singing	People with a history of serious and enduring mental health problems (n=137)	This report examined the wellbeing of participants involved in a network of singing groups, compared to baseline, using a clinically validated measure of mental distress. Qualitative evidence regarding emotional and social outcomes was also gathered.	Improvements in mental wellbeing were seen following eight months of participation in the choirs. Qualitative evidence of a wide range of emotional and social benefits was also found.
Bell et al., 2007 ⁵⁹	Randomised controlled trial (quantitative)	Art production	Adults aged 18–30, with no known mood-related disorders (n=50)	In this study, participants were randomised to either create an artwork or to view and sort a series of art prints (one session). Mood was assessed before and after the session using two standardised measures.	Freely creating a piece of art was associated with greater improvements in mood compared to viewing and sorting art prints.

Author, year (Name)	Type of Study (type of analyses)	Arts Intervention	Population	Study Summary	Conclusion
Bolwerk et al., 2014⁶⁰	Randomised controlled trial (quantitative)	Art production	Post-retirement adults (n=28)	In this study, participants were randomised to either actively create art or evaluate pieces of art (one-hour weekly sessions for 10 weeks). Functional brain activity was measured before and after the course using fMRI imaging. Psychological resilience was also assessed, using a validated measure.	Training in visual art production was found to be associated with enhanced functional brain connectivity and increased resilience. These associations were not observed following training in art evaluation.
Secker et al., 2008⁶¹ (Open Arts)	Observational (quantitative)	Participatory arts programmes	Adults at risk of or recovering from mental health problems (n=116)	This evaluation examined the wellbeing and social inclusion of participants in introductory arts courses, compared to baseline, using clinically validated measures. Qualitative evidence regarding these outcomes was also gathered as part of a separate formative analysis to inform the development of the programme.	There was a significant improvement in the overall scores for wellbeing and social inclusion from before to after the course. This improvement was found to be consistent between genders and age groups.
Potter, 2012;⁴⁵ McDaid and Park, 2013⁵¹ (Arts on Prescription)	Randomised controlled trial and cost-effectiveness analysis (mixed methods)	Participatory visual arts programme	Adults experiencing mild to moderate anxiety and/or depression (n=42)	In this study, participants were randomised to either the intervention group (12 weekly 2hr sessions) or a waiting list comparison group. Social isolation, anxiety and depression before and after the programme were assessed using validated measures. An analysis of the cost-effectiveness of the programme was also undertaken.	Participation in the arts programme resulted in positive outcomes in terms of participants' mental wellbeing, social isolation, anxiety or depression, compared to the comparison group. Additionally, the programme was found to have the scope to be a cost-effective intervention to reduce the risk of persistent and/or severe depression.
Romanowska et al., 2011⁶²	Randomised controlled trial (quantitative)	Arts-based leadership programme	Adults in managerial positions with ≥4 subordinates (n=48)	In this study, participants were randomised to either arts-based or conventional leadership programmes (12 x 3hr sessions over ~1 year). Mental health of both the leaders and the subordinates was assessed using a questionnaire.	The use of an arts-based approach to leadership training, compared with a conventional approach, was associated with improved mental health, covert coping and performance-based self-esteem for leaders and subordinates.

4.2.1. Arts participation is strongly associated with positive mental wellbeing

(Renton *et al.*, 2012⁵⁶; Fujiwara and MacKerron, 2015⁵⁷)

Investigating the association of participation in arts and cultural activities (both receptive and active) with mental health and wellbeing was one of the aims of a community-based observational study, the results of which were published in 2012.⁵⁶ Data were taken from the cross-sectional baseline survey of the Well London trial, which was conducted during 2008. One pair of census 'lower super output areas' (LSOAs) (areas with low average income) were selected in each of the 20 London boroughs, 100 households in each LSOA were randomly selected, and all consenting adults (aged 16 or over) were interviewed.

Provided with a list of creative activities and arts events, respondents were asked how many of these they had participated in or attended during the last 12 months. Participation in creative activities such as painting, photography, music and other performance was considered to be active participation in creative activities. Participation in events such as theatre, festivals and films was considered to be receptive participation, and this activity was referred to as "attendance at cultural events". The Well London baseline survey also contained validated measures of positive wellbeing (Snyder Hope Scale) and anxiety/depression (EuroQol-5D).

The proportion of the Well London population that reported having participated in creative activities in the past 12 months was 68.2%, and 60.5% had attended a cultural event. In total, 2,077 adults completed the Snyder Hope and EuroQol-5D sections of the questionnaire (see [Appendix 1](#) for information about how mental health and wellbeing is measured). Regression analysis was used to look for associations between participation in creative activities or attendance of cultural events and mental wellbeing.

Participation in creative activities and attendance of cultural events were both associated with positive mental wellbeing and reduced odds of reporting anxiety or depression in the previous 12 months (Table 2). The association between participation in creative activities or attendance of cultural events and positive mental wellbeing persisted after adjustment for sociodemographic and economic characteristics. Additionally, the effect of creative activities on promoting better mental wellbeing increased with age, except for those aged ≥ 65 years.

Table 2. Association between creative activity participation or cultural event attendance and mental wellbeing and anxiety or depression⁵⁶

	Mental wellbeing (Hope Scale Score)		Anxiety or depression (EuroQol5D)	
	Linear regression coefficient (95% CI)	Wald test P-value	OR (95% CI)	Wald test P-value
Creative activity participation	0.29 (0.24–0.34)	<0.001	0.6 (0.5–0.7)	<0.001
Cultural event attendance	0.27 (0.22–0.31)	<0.001	0.6 (0.5–0.7)	<0.001

CI: Confidence interval; OR: Odds ratio.

An OR <1 implies that individuals receiving the intervention, in this case participating in creative activities or attending cultural events, were less likely to experience anxiety or depression than individuals not receiving the intervention.

These results suggest that participation in arts and cultural activities are independently associated with positive mental wellbeing. The large number of participants make these findings more reliable, however the fact that the study was observational (as opposed to interventional) means that a causal link, or its direction, cannot be categorically proven (in this case, meaning that it is possible that the results occurred because individuals with better mental wellbeing are more disposed to participate in arts and cultural activities). Therefore, as the authors acknowledge, further prospective intervention studies are needed to elucidate the nature of the relationship between arts participation and mental wellbeing.

Another observational study, performed by Fujiwara and MacKerron, used a large dataset to investigate the relationship between cultural engagement and momentary wellbeing.⁵⁷ The data for this study were gathered using the 'Mappiness' iPhone application that, once downloaded, sends randomly-timed requests to users to record their current wellbeing, as measured by how happy, relaxed and awake they feel on a sliding scale from 0 ('Not at all') –

100 ('Extremely'). The individual is then asked a question on their current activity, and they could choose all that apply out of 40 response options, which included a range of arts and cultural activities.

More than one million observations, for tens of thousands of individuals in the UK, collected since August 2010, were analysed. A regression analysis was performed to investigate if there were any links between the levels of happiness and relaxation an individual reported and their recorded activity. The results showed that, after controlling for a range of other factors that might affect wellbeing, all arts and culture activities were significantly associated with happiness and relaxation (Table 3), and rank very highly in terms of impacts on happiness and relaxation in comparison with the other activities reported in the dataset.

Table 3. Association between different activities and reported happiness and relaxation

Activity	Coefficient (Happiness)	Coefficient (Relaxation)
Cultural activities		
Theatre, dance, concert	8.735	4.483
Singing, performing	7.731	4.171
Exhibition, museum, library	7.457	6.017
Hobbies, arts, crafts	5.737	4.618
Listening to music	3.518	3.027
Reading	2.331	4.124
Other activities		
Talking, chatting, socialising	3.789	2.859
Drinking alcohol	3.646	4.045
Childcare, playing with children	2.888	0.877
Watching TV, film	2.084	3.562
Housework, chores, DIY	-0.651	-3.668

All variables were statistically significant

In this analysis, a range of other factors that may affect wellbeing were controlled for, which increases the reliability of the results. However, when considering these results, it is also important to note that the population of respondents differs from the overall UK population in a number of ways – respondents are generally younger, wealthier and more likely to be employed than the average UK adult – and that therefore the results may not be generalisable to other socioeconomic groups.

4.2.2. The use of the arts in healthcare is associated with improvements in wide range of outcomes, including mental health, in a variety of patient populations.

(Staricoff, 2004⁵³)

In 2004, a systematic review of the medical literature was conducted by Dr Rosalia Staricoff, with the aim of strengthening existing anecdotal and qualitative information demonstrating the impact that the arts can have on health.⁵³ A total of 385 references related to the arts and humanities in healthcare were selected for inclusion in the report, including arts interventions in both clinical and non-clinical settings, based on:

- An analysis of the quality, design and research protocols
- The level of rigor of the data analysis
- Whether they were peer-reviewed studies or papers from a reputable source

This comprehensive review had a broad scope. It was divided into six sections, as follows:

1. The effect of the arts on clinical outcomes

The review identified a number of medical areas in which the research studies have shown clear and reliable evidence that clinical outcomes have been achieved through the intervention of the arts, including cancer care, cardiovascular care, intensive care, medical procedures, pain management and surgery.

2. The effect of the arts on staff outcomes

The review did not find any reliable studies on the possible relationship between the use of arts in the healthcare environment and its effect on the recruitment and retention of staff.

3. The effect of the arts and humanities on the education and training of health practitioners

The review found that there was evidence to support positive effects of the arts and humanities on the education and training of health practitioners, including creating a less stressful environment, strengthening nursing students' confidence in their own practice, and increasing understanding of illness and suffering.

4. The effects of the arts in mental health care

The author concluded that the use of the arts in mental healthcare:

- Helps to improve the communication skills of mental health users, helping in their relationship with family and mental health providers
- Provides patients with new ways of expressing themselves, stimulates their creativity skills and enhances their self-esteem
- Brings about behavioural changes in mental health users: patients become more calm, attentive and collaborative, which help in the everyday management of a mental health service, diminishing the need for medication and physical restraint

5. The effect of different types of art-forms

The review found that there was a lack of rigorous research on the contribution of different types of art-forms to healthcare.

6. Mechanisms of art perception

This section of the review touched on the increasing ability of science and technology to allow us to understand the mechanisms underlying perception, processing and the emotional responses elicited by the arts. It also outlined how an understanding and description of the patterns of emotional response elicited by different art-forms could contribute to the rational and appropriate use of the arts in creating a powerful therapeutic environment.

The overall results of the review led the author to conclude that there is strong evidence for the influence of the arts and humanities on achieving effective approaches to patient management, as well as on the education and training of health practitioners. It highlighted the crucial importance of the arts and humanities in positive changes in physiological and psychological outcomes, reducing drug consumption, shortening length of stay in hospital, increasing job satisfaction, promoting better doctor-patient relationships, improving mental healthcare and developing health practitioners' empathy across gender and cultural diversity.

However, although this review was useful in drawing together a wealth of evidence supporting the value of arts in health from the medical literature, the differences between the populations involved and diversity of outcomes measured limited the ability for the data to be synthesised together and therefore to produce evidence stronger than the individual studies by themselves. Therefore, this review highlights the need for well-designed studies that either enrol a larger number of participants, or are more aligned with previous studies, in order for higher-level evidence to be generated.

4.2.3. Participating in community choral singing is associated with a range of positive health and wellbeing outcomes, in different patient populations

(Cohen *et al.*, 2006;⁴² Cliff and Morrison, 2013⁵⁸)

The report by Cohen *et al.* was part of the broader Creativity and Aging Study in the USA, which aimed to measure the impact of professionally conducted community-based cultural programs on the physical health, mental health, and social activities of individuals aged ≥ 65 years. The results presented here are from a sub-sample of the study, which focussed specifically on a chorale as the community-based cultural programme.

Individuals aged ≥ 65 years who were ambulatory and sufficiently healthy to participate in regular community-based activities were recruited into either the chorale (professionally conducted, weekly rehearsals for 30 weeks, plus several public performances) or the no intervention group, via notices for requests for volunteers. Although this recruitment process to the two groups was not random (so the possibility that the results were affected by selection bias), there were no statistically significant differences between the groups at baseline in terms of age, gender and ethnicity of participants.

The following outcomes were measured in all participants at baseline, and then at 12 months:

- General physical health (dichotomous, self-reported assessments)
- Health services utilisation, eg. doctor visits and medication usage (continuous level self-reported assessments)
- Mental Health:
 - Morale (the Philadelphia Geriatric Center Morale Scale)
 - Loneliness (using the Loneliness Scale-III)
 - Depression (using the Geriatric Depression Scale–Short Form)
- Engagement in social activities (using a detailed inventory of participants' activities, with attention to the nature, frequency and duration of each)

Significant differences between the intervention and comparison groups (using a level of significance of $p < 0.10$, due to the exploratory nature of the study), at baseline and 12 months were reported in mean measures of health, mood and level of activity (Table 4).

Table 4. Mood indicators impacted during the study

Mood indicator (mean \pm SD)	Baseline			Month 12 [†]		
	Chorale Group (n=90)	Comparison Group (n=76)	P-value	Chorale Group (n=77)	Comparison Group (n=64)	P-value
Morale	14.15 \pm 2.42	13.51 \pm 3.07	NS	14.08 \pm 2.66	13.06 \pm 3.29	P<0.05
Depression	1.39 \pm 1.66	2.12 \pm 2.23	P<0.03	1.14 \pm 1.84	1.84 \pm 1.89	NS [†]
Loneliness	35.11 \pm 8.09	38.26 \pm 10.07	P<0.03	34.60 \pm 7.86	37.02 \pm 10.33	P=0.08 [†]

NS, not significant; SD, standard deviation

[†] Analysis of covariance used for depression and loneliness due to significant differences at baseline

When interpreting these results, it should be noted that the comparison group reported greater initial scores in the direction of depression and loneliness and reported more other health problems than did the intervention group at baseline. However, differences in baseline scores were controlled for when comparing these outcomes at 12 months. The researchers concluded that measures of morale and loneliness were positively impacted by the intervention; significant differences between the groups in favour of chorale singing were seen at 12 months in measures of morale and depression (Table 4).

These results suggest that participatory arts programmes can have a positive impact on the health of older adults, reflecting the potential benefits of the arts in preventing the need for long-term care. An observational study by Cliff and Morrison examined the value of group singing for the recovery and social inclusion of people with a history of

serious and enduring mental health issues by evaluating a network of singing groups using a validated clinical assessment tool to measure changes in mental health and related outcomes over time. The intervention in this study was engagement in choral singing over a period of eight months, split into three terms. Seven singing groups were included in the study. Each group met weekly, with breaks for Christmas and Easter, as well as performing in public twice during the study period.

An observational study by Clift and Morrison examined the value of group singing for the recovery and social inclusion of people with a history of serious and enduring mental health issues by evaluating a network of singing groups using a validated clinical assessment tool to measure changes in mental health and related outcomes over time. The intervention in this study was engagement in choral singing over a period of eight months, split into three terms. Seven singing groups were included in the study. Each group met weekly, with breaks for Christmas and Easter, as well as performing in public twice during the study period.

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The CORE outcome, which was used in this study, consists of 34 statements, and is widely used in clinical practice as a measure of mental distress. Scores range from 0–30 (higher scores indicating increased mental distress), and it is known that:

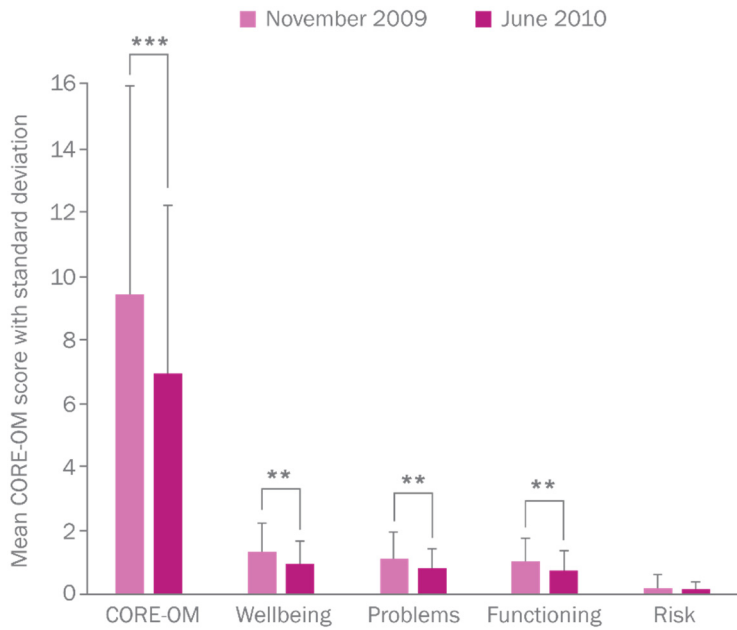
- A score of ≥ 10 indicates that an individual is relatively unwell
- A change of five points represents a reliable movement towards deterioration or improvements in wellbeing
- A movement of five points over the cut-off value of 10 represents a change that is both reliable and clinically significant

CORE scores were collected at the end of each term, and were compared between the end of term one and term three.

Of the 137 participants included in the study, 42 provided sufficiently complete data on the CORE to be included in the analysis. The participants in the sample were diverse, with a wide age range, and the sample included people with current mental health problems, individuals in recovery from previous serious periods of mental ill-health, some friends/family supporters and also one mental health promotion specialist.

The results show a marked reduction in CORE values over a period of eight months, both in the overall CORE score and its component sub-scales of wellbeing, problems, functioning and risk (Figure 6), indicating an improvement in overall mental health.

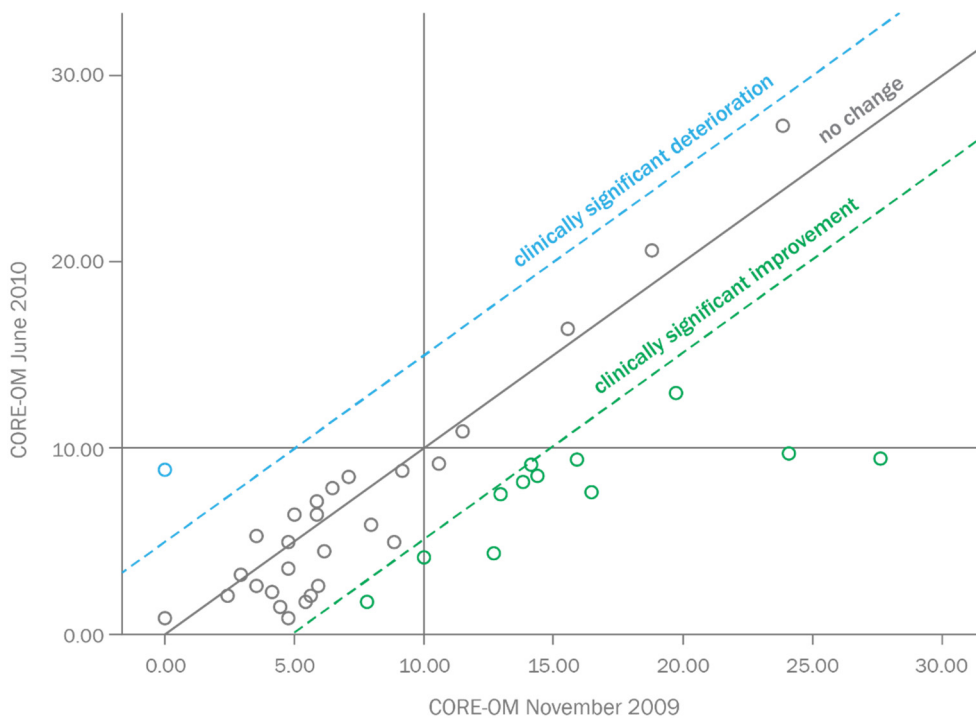
Figure 6. Change in CORE outcome measure (OM) and its individual components



** p<0.01, *** p<0.001.

In addition to the mean effect of choral singing on wellbeing, this study also considered the changes observed by each individual. As shown in Figure 7, 11 of the 42 participants showed a clinically significant improvement in CORE scores, and there was an overall trend of general improvement in individual CORE scores.

Figure 7: Paired CORE scores for each participant over the eight months period of the evaluation



The horizontal and vertical grey lines represent the clinical cut-off value of 10; the grey diagonal line represents no change and the upper and lower dashed lines indicate clinically significant deterioration and improvement, respectively.

As this study only looked only at the changes in results of individuals who did participate in the programme, and did not have a group of similar individuals who did not participate in the programme (a control group) to compare the results with, it is not possible to ascertain if the changes observed in the measurements before and after the study were due to the fact that the individuals took part in the programme. As the authors acknowledge, this limits the

usefulness of this study in decision-making. However this study does illustrate that group singing can have a positive impact on mental wellbeing. In addition, the variation in the participants in terms of mental health means that the results almost certainly underestimate the strength of the impact of group singing for people with mental distress above the clinical cut-off point.

4.2.4. The act of art production is associated with improvements in mood and increased mental resilience

(Bell et al., 2007;⁵⁹ Bolwerk et al., 2014⁶⁰)

Bell et al. report on a randomised controlled trial that was undertaken to examine whether art production results in elevations in mood. The participants were adults aged 18–30 years, with no known mood-related disorders. To establish a baseline assessment of mood, mood was measured before the session using the following two standardised mood assessments (see [Appendix 1](#) for information about how mental health and wellbeing is measured):

- The profile of mood states (POMS) asks subjects to rate their current level of mood by rating the degree to which 65 mood-related adjectives describe their current state. Higher scores reflect more negative mood states
- The state-trait anxiety inventory (STAI) uses two sets of 20 questions to assess stable, long-term anxiety levels (trait anxiety) and short-term fluctuations in anxiety (state anxiety). As with the POMS, higher scores reflect more negative mood states

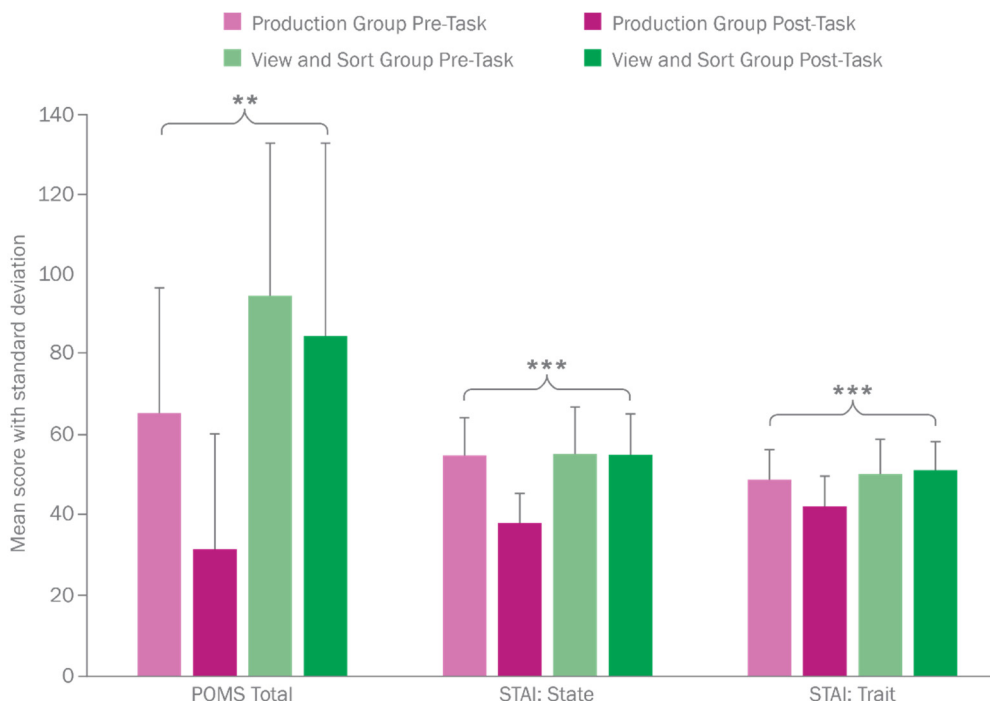
Participants were then randomly assigned to one of the following groups:

- Art production**, which consisted of being given paper, coloured pencils, crayons, pastels or charcoal pencils and being asked to draw freely for 20 minutes
- Art viewing**, which consisted of being asked to view and sort 50 art prints (control group) for 20 minutes. This specific control task allowed for groups to differ solely on whether or not they produced art, rather than viewing it, or completing a time-limited task

After completing the task, participants again completed the POMS and STAI questionnaires, and mean scores for each measure of mood for each group before and after the task were calculated.

As can be seen in Figure 8, the art production group experienced a greater reduction in negative mood on all three measures – in each case the art production group demonstrated a substantial decrease in negative mood score, whilst the art viewing and sorting group showed lesser or minimal change. Differential changes in mood state between groups from before to after the task were examined using group by time interactions in a two-factor ANOVA – these were found to be significant in all three measures.

Figure 8. POMS and STAI scores before and after completing 'art production' or 'art view and sort task'



** $p < 0.01$, *** $p < 0.001$.

Another randomised controlled trial investigated the effects of art production on resilience, as well as on functional brain connectivity, which was reported by Bolwerk *et al.* The participants were retired adults aged 62–70 years; people with serious physical or mental disorders or taking psychotropic drugs were not eligible for inclusion.

The 28 participants who were enrolled were randomised to one of two art interventions (sessions lasted two hours and were undertaken weekly for 10 weeks):

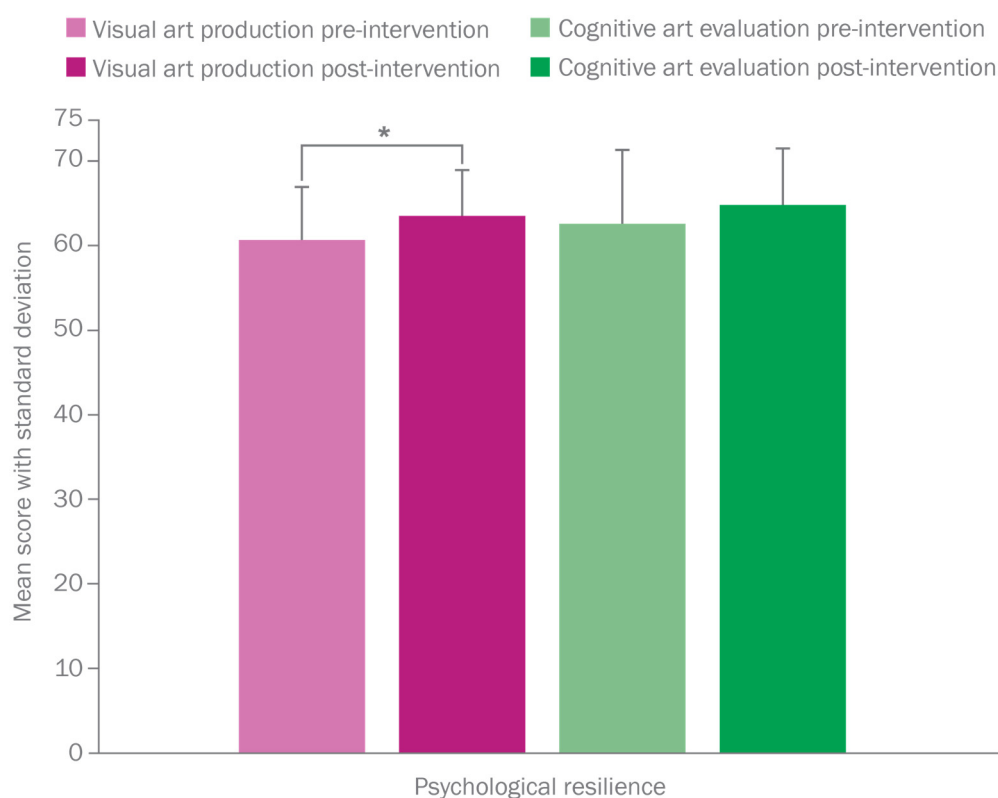
- A **visual arts production group**, in which individuals actively created art, guided by a visual artist trained as an art educator.
- A **cognitive art evaluation group**, in which individual participants considered, analysed, and interpreted selected paintings and sculptures, in dialogue with a qualified art historian.

Once before and once after the programme, the following outcomes were assessed:

- Psychological resilience, using the brief German version of the Resilience Scale (RS-11). This consists of 11 items, each of which is rated on a scale of 1–7, and which is a valid and reliable measure of stress capacity in elderly populations.

Comparing the results between the two groups, from the baseline measurements to after the arts programme, showed that psychological resilience significantly improved following the arts programme in the visual arts production group, whereas no significant improvement was seen in the art evaluation group (Figure 9).

Figure 9. Psychological resilience in the visual art production and cognitive art evaluation groups, pre- and post- intervention



* $p < 0.05$.

The carefully controlled trials undertaken by Bell *et al.* and Bolwerk *et al.* allow the effects of creating visual art, as opposed to any other effects of evaluating the art/participating in the group activity, to be investigated. Bell *et al.* demonstrate that producing art is associated with improvements in mood in participants with no known mental health problems. Bolwerk *et al.* show that producing visual art is associated with increased psychological resilience.

4.2.5. Participation in community-based arts programmes results in positive outcomes with regard to mental wellbeing, social isolation, and anxiety or depression for people with mental health problems

(Secker et al., 2011;⁶¹ Potter, 2013⁴⁵)

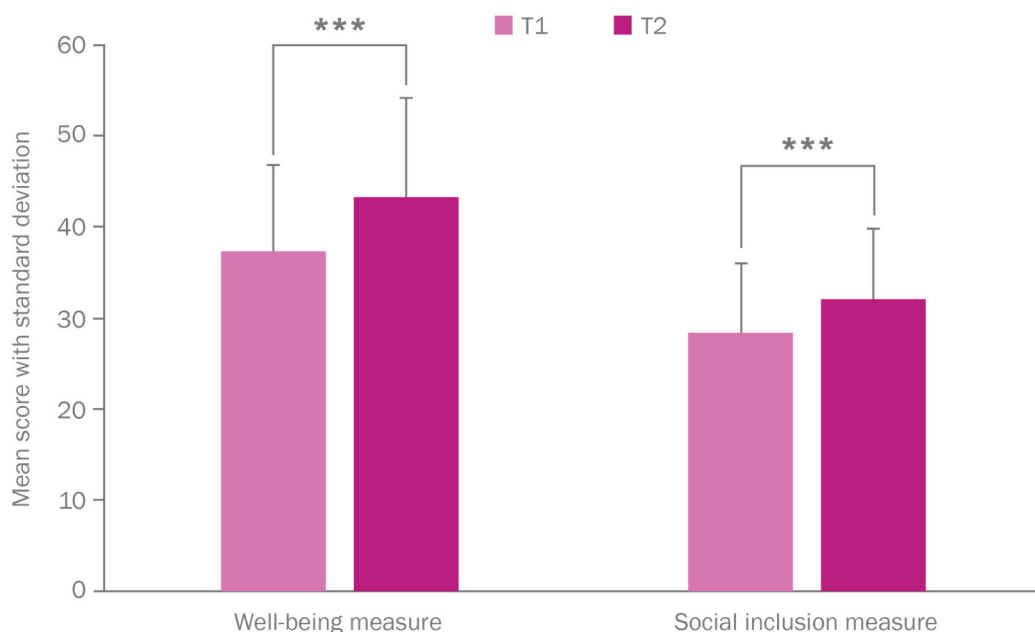
Secker et al. evaluated the effect of introductory art courses, offered by the Open Arts project, on mental wellbeing and social inclusion. The courses were group-based, ran for 10–15 weeks and included working with a variety of media. Participants could be referred by a mental health worker or self-refer, and were asked to complete a questionnaire at the beginning and end of the course.

- Mental wellbeing was measured using the validated Warwick–Edinburgh Mental Wellbeing Scale (WEMWBS). This consists of 14 statements; participants indicate the extent to which each statement reflects their experience over the previous two weeks (scale 1 [“none of the time”] to 5 [“all of the time”]; higher scores represent more positive wellbeing).
- Social inclusion was measured using an abridged version of a measure developed for a different study of arts in health. This consisted of 12 statements, grouped into three subscales measuring social isolation, social acceptance and social relations. Participants indicated the extent to which each statement reflects their experience over the previous month (scale 1 [“not at all”] to 4 [“yes definitely”]).

To assess the extent to which improvements on the wellbeing and social inclusion measures could be attributed to participation in the programme, two questions to assess this were also included in the post-programme questionnaire (it was not feasible to establish a control or comparison group).

Over two years (29 courses), 33% of participants who completed an introductory course returned questionnaires both before and after the course (116 of 347); missing data further reduced the data available for analysis to 107 individuals for the well-being measure and 100 individuals for the social inclusion measure (with a slightly higher response to the individual social inclusion subscales). The results showed that there was a significant improvement in the overall scores for both wellbeing and social inclusion from before to after the course (Figure 10); this result was consistent between genders and age groups.

Figure 10. Wellbeing and social inclusion before (T1) and after (T2) participation in Open Arts introductory arts programmes



*** $p < 0.001$. P-values were calculated using paired t-tests

Correlations were found between changes on the outcome measures and participants' ratings of the programme, however a control or comparison groups would be needed to more clearly demonstrate causality. Additionally, the

low response rate makes it difficult to generalise the results to the whole group, limiting the conclusions that can be drawn from this study.

An evaluation of the Arts on Prescription (AoP) programme offered by Arts and Minds was carried out, which aimed to investigate the impacts of a participatory visual arts programme upon the health and wellbeing of adults experiencing mild to moderate anxiety and/or depression.⁴⁵ Programme participants attended 12 visual arts workshops (weekly, delivered by one professional artist and one counsellor), plus three additional social gatherings held in cultural venues. The comparison group consisted of participants on the waiting list – these participants were also invited to the social gatherings in order to maintain contact with the programme.

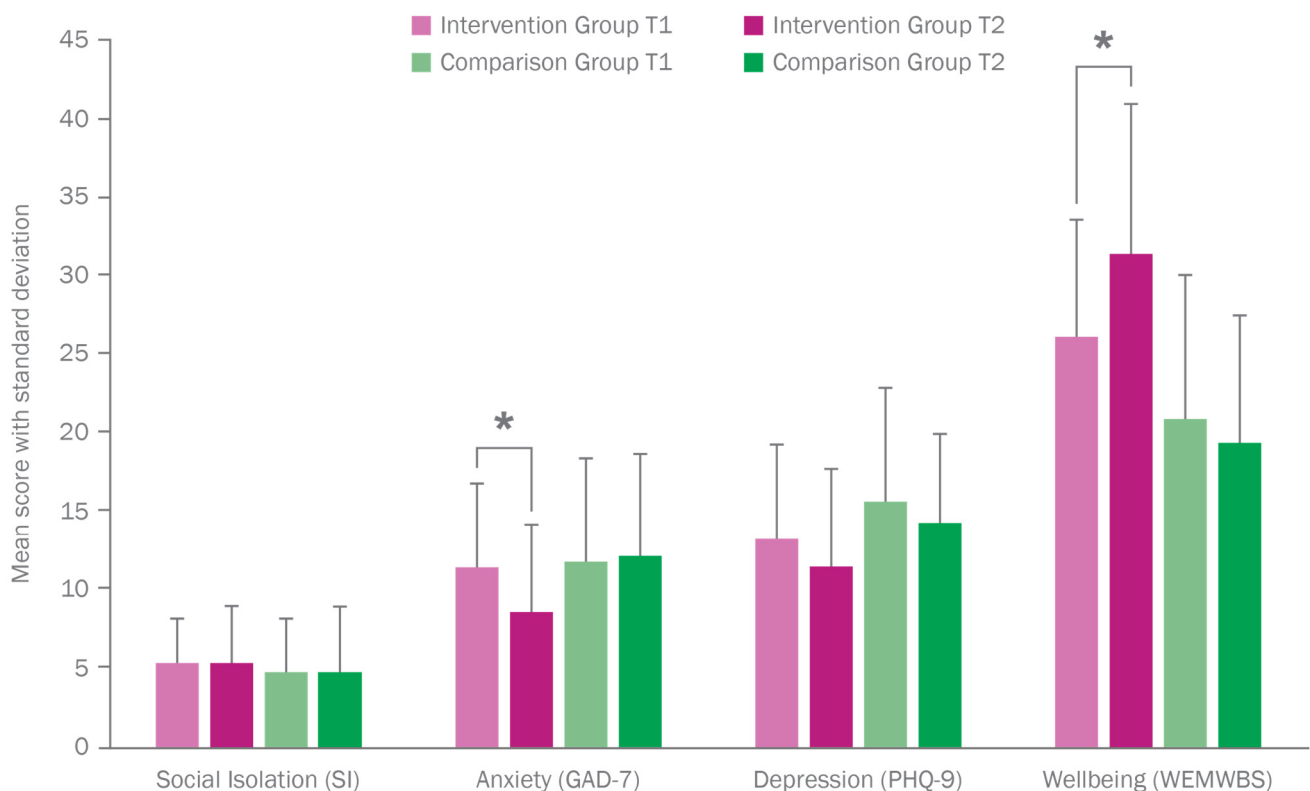
The following outcomes were assessed before and after participation in the programmes, using validated and reliable psychological measures (see [Appendix 1](#) for information about how mental health and wellbeing is measured), as follows:

- Wellbeing (Warwick Edinburgh Mental Wellbeing Scale [WEMWBS]. 14 items, score 1–5; higher scores represent more positive wellbeing)
- Anxiety (General Anxiety Disorder Assessment [GAD-7]. 7 items, score 1–4; higher scores represent higher levels of anxiety)
- Depression (Patient Health Questionnaire [PHQ-9]. 9 items, score 1–4; higher scores represent increasing severity of depression)
- Social isolation (4 item measure, derived from a broader measure of social isolation developed and validated during the national study of arts and mental health)

In addition, semi-structured interviews were held with participants before and after the programme, with the aim of exploring their expectations and experiences of Arts on Prescription.

Forty-two individuals were included in the study, over two locations and time periods. The results for the quantitative outcomes are shown in Figure 11.

Figure 11. Social isolation, anxiety, depression and well-being scores before and afterwards



* $p < 0.05$.

The study found that participation in the Arts on Prescription programme resulted in positive outcomes for 78% of participants, through an increase in mental wellbeing and/or a decrease in social isolation, anxiety or depression. In addition, 44% participants reported a decrease in social isolation after completing the programme. 61% participants meanwhile reported a decrease in anxiety, 67% reported a decrease in depression and 83% reported an increase in wellbeing over the course of the programme.

Interestingly, 10 of the total 34 intervention participants made a recovery from depression. When considering only the 21 individuals with moderate or severe depression (represented by PHQ-9 scores above 10 at enrolment are considered) in the analysis, the recovery rate increases to almost 50%.

By using a no-intervention comparison group, this study demonstrated that a community-based arts programme can result in improvements in various aspects of mental wellbeing, as measured by validated and reliable scales. The author acknowledges the need for a larger sample size in order to increase the reliability of the results, and this is to be addressed by the scaling-up of the programme that is currently underway.

4.2.6. Art participation programmes are likely to be cost-effective from a healthcare perspective, and may result in overall savings for the public sector compared to current standard-of-care alone

(McDaid and Park, 2013⁵¹)

Arts and Minds commissioned an economic evaluation of Arts on Prescription (AoP), which had two main purposes:

1. To quantify the **resources** needed to run the AoP programme
2. To evaluate the **cost-effectiveness** of AoP

Resource Use

The researchers used a questionnaire to collect data on the costs of all resources needed to run AoP. Resources that were donated in-kind or provided at a discount were adjusted to the commercial rate. The costs presented in Table 5 are the total from four series of AoP, of which two were carried out in a city centre location and two in a rural location. Each series consisted of 12 sessions lasting approximately 2.5 hours, and a maximum of 12 participants could be included in each series (the actual number of participants across these four series was 44 rather than 48).

Table 5. Resource costs for 48 sessions of Arts on Prescription

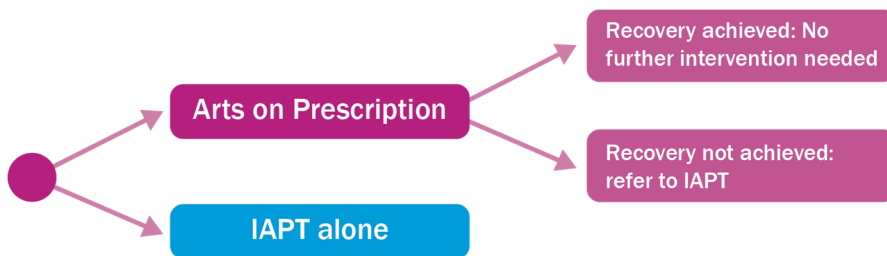
Category	Example items	Total cost
Administrative Costs	<ul style="list-style-type: none"> • Staff costs • Rent • Utility bills 	£15,300
Set-up Costs	<ul style="list-style-type: none"> • Stakeholder meetings • Fundraising • Recruitment 	£336
Session Costs	<ul style="list-style-type: none"> • Counsellor • Artists • Venue • Materials • Childcare* • Refreshments 	£13,693 [£13,183 paid, £510 in-kind]
Event costs	<ul style="list-style-type: none"> • Launch events • Social events 	£6,710 [£4,019 paid, £2,691 in-kind]
Total costs		£36,039
Cost per participant		£819

*A crèche service was only provided for one series (12 sessions) at a cost of £1,375

Cost-effectiveness

The cost-effectiveness of AoP was assessed in comparison to the Individual Access to Psychological Therapies (IAPT) programme offered by the NHS (see [Box 4: Principles of Health Economics](#) for an explanation of the concepts presented in this section). IAPT can be offered in a low-intensity or a stepped-up format; this evaluation considered both options separately. IAPT was launched in 2008, and by 2012 had been used by more than 1 million people, achieving recovery rates of more than 45%.²⁵ However, there is evidence that it may not be cost-effective according to the definitions normally used by the NHS.⁶³ The researchers assumed that AoP would be used as a step to proceed an IAPT programme; ie. if a full recovery (defined as achieving a score <10 on the PHQ-9) is not achieved then the individual will be referred to IAPT, as summarised in Figure 12.

Figure 12. Treatment pathways explored in the economic evaluation

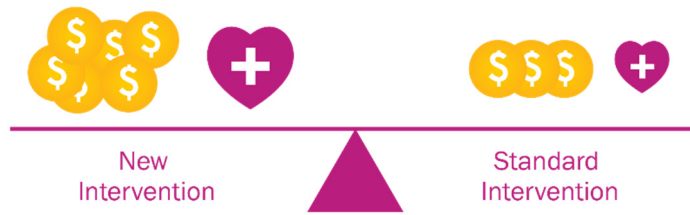


Due to the limited statistical evidence on the effectiveness of AoP in terms of achieving clinical recovery from depression, the researchers judged that it would be most appropriate to carry out a threshold cost-effectiveness analysis. Rather than asking “Is AoP cost-effective compared to

IAPT alone?” this analysis posed the question “**What level of recovery would need to be achieved following AoP in order for it to be cost-effective compared to IAPT alone?**”.

Box 4: Principles of Health Economics

Health economics is used to help manage resources in a way that will have the maximum impact on healthcare provision. Unfortunately, there are not enough resources in the economy to allow unlimited use of the healthcare system.



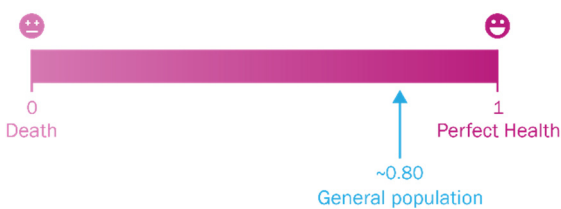
Cost-effectiveness Analysis

Health economists use a technique called cost-effectiveness analysis to weigh up the different healthcare options available. When a new intervention is developed, decision-makers have to consider both how well the intervention works and how much it will cost.

The **cost** of a treatment includes the immediate cost of the resources required, such as drug costs, staffing costs (eg. surgeons, counsellors), and wider costs such as venue hire or publicity for public health interventions. It is also necessary to consider subsequent costs of treating possible complications or adverse side effects, and follow-up costs such as consultations or assessments.

To measure the **effectiveness** of intervention, we have to look at changes in both life expectancy and quality of life. **Quality-Adjusted Life Years (QALYs)** are commonly used as a measure of effectiveness.

Quality-adjusted Life Years (QALYs)



QALYs are calculated by multiplying the number of life years gained by an individual's **quality of life**. Quality of life can be scored on a scale of 0 to 1. At 0 the patient is assumed to be dead, and at 1 they are in a state of perfect health; this is known as **health-related utility**. The general population is assumed to have a health-related utility of approximately 0.8. Utilities for various illnesses are determined from surveys of patients and the public.

The health-related utility scale

Disability-adjusted Life Years (DALYs)

Closely related to QALYs, DALYs incorporate the sum of years of life lost due to premature mortality, combined with the number of healthy life years lost due to a negative health condition. As with QALYs, DALYs use a scale from 0 to 1, but the scale is reversed ie. 0 represents perfect health and 1 represents death.

Incremental Cost-effectiveness Ratio (ICER)

When comparing two alternative treatments, the ICER is the ratio of the additional costs to the additional benefits, expressed as the cost per additional QALY gained. An ICER is calculated by dividing the increase in cost by the increase in effectiveness.

$$ICER = \frac{\text{Incremental cost } (C_A - C_B)}{\text{Incremental effectiveness } (E_A - E_B)}$$

Willingness-to-pay Threshold

Decision-makers often use a willingness-to-pay threshold to set guidelines about how cost-effective an intervention should be. For example, the National Institute for Health and Care Excellence (NICE), who assess whether treatments should be paid for on the NHS, use a threshold of around £20,000 per QALY.

Limitations of Cost-effectiveness Analysis

ICERs are commonly used when deciding which interventions should be publicly funded. The results can have a large societal impact depending on which treatments are recommended. This method of evaluation can be controversial; critics argue that you cannot put a price on life, and may potentially life-saving drugs have been dismissed due to their lack of cost-effectiveness. Cost-effectiveness analysis excludes a number of important societal considerations, such as:

- What are the economic gains from improved productivity in the work place?
- How does the new treatment impact the lives of family and friends?
- What is the stigma associated with an illness and its treatments?

Table 6. Parameters for the economic analysis of AoP

Item	Input
SF-6D* QALY mild depression	0.728
SF-6D QALY moderate depression	0.614
SF-6D QALY moderately severe depression	0.556
Recovery rate – low intensity IAPT intervention	0.55
Recovery rate – stepped up IAPT intervention	0.53
Participation rate in AoP sessions	0.64
Recovery rate with no intervention	0.18
Cost of assessment following self-referral to AoP	£95
Cost of GP consultation	£43
Cost of IAPT low intensity intervention per participant	£475
Cost of IAPT stepped up intervention per participant	£1,557
Costs of poor mental health due to depression	£1,563
Cost of lost employment due to depression	£11,847

*The SF-6D is a measure of quality of life which can be used to quantify the impact of mental health problems. AoP: Arts on Prescription; GP: General Practitioner; IAPT: Individual Access to Psychological Therapies; QALY: Quality-adjusted life-year.

Using the parameters shown in Table 6, the researchers modelled the probabilities that participants would achieve recovery following AoP or IAPT alone, and calculated the costs and benefits in each case. They found that from the perspective of the health payer (ie. the NHS) only, a recovery rate of at least 37.3% for GP-referred AoP would need to be achieved for AoP to be considered cost-effective, assuming a willingness-to-pay threshold of £20,000 per QALY. Given that 10/21 patients (47.6%) achieved the recovery threshold in the effectiveness evaluation of AoP, it is very likely to be cost-effective. When the wider societal costs are taken into account, such as the cost of lost employment due to depression, then AoP is likely to be cost-saving overall.

McDaid and Park varied each input to the model separately to test whether AoP would remain cost-effective under a range of different conditions. They found that the cost-effectiveness is affected by changing the costs, participation rates and recovery rates of AoP or IAPT, but that AoP is still found to be cost-effective under the majority of conditions.

Wider implications

The evaluation focused solely on the economic benefits of reducing levels of depression. However, the clinical evaluation by Potter (2013)⁴⁵ demonstrates that AoP also contributes to a reduction in anxiety and social isolation, and an increase in wellbeing. Although these outcomes are not independent of each other, the effectiveness of AoP is likely to be a higher than estimated within this evaluation. On the other hand, they have included the full range of costs associated with the project, including those that were donated in-kind. With economies of scale as the project expands and with further optimisation of the processes involved, the costs per participant may fall in the future. It is therefore likely that the cost-effectiveness of AoP has the potential to be higher than calculated in this assessment.

The economic evaluation also considered the potential of AoP to deliver cost savings from a wider perspective than the NHS, which will be of interest to those who commission public sector services. Improvements in mental health and wellbeing led not only to a lower burden on health and welfare services, but also to an increase in positive contributions to society. If AoP achieves a depression recovery rate of just 16%, the productivity gains are estimated to offset the costs of the programme. As these gains are likely to lead to additional savings such as a reduction in welfare costs, the programme is likely to be cost saving from the wider public sector perspective.

4.2.7. The positive effect of arts-based programmes on mental health is also evident in the workplace

(Romanowska *et al.*, 2011⁶²)

Romanowska *et al.* examined the effect of an arts-based leadership programme, compared to a conventional one, on the mental stress levels of both managers and their subordinates.

Individuals were eligible for inclusion as managers in the study if they were in a formal managerial position with ≥ 4 subordinates. Participants were organised into 25 pairs, matched by age, gender and occupation, then members of each pair were randomised to either an arts-based (built on an experimental theatre form, a collage of literary text and music, followed by writing and discussions focused on existential and ethical problems) or a conventional leadership programme (including group psychology, organisation and leadership theories, and with an emphasis on democracy, employee participation, group functioning, communication and feedback). All participants attended an initial three-day leadership training course and then started their respective intervention, which consisted of 12 three-hour sessions over a period of approximately one year.

Each participating leader was asked to select four of their subordinates. The leaders and their subordinates each filled in a questionnaire concerning mental health, and provided a blood sample to allow measurement of biological parameters (serum cortisol, which is sensitive to adverse working environments, and dehydroepiandrosterone-sulfate [DHEA-s], known to vary with improving or deteriorating life conditions).

- Poor mental health was measured using a summary score (15 items) of the following outcomes:
 - Emotional exhaustion (Maslach Burnout inventory, standardised for use in Sweden; 5 items scored 1–6; higher scores signify lower emotional exhaustion)
 - Sleep disturbance (Karolinska Sleep Questionnaire; 4 items scored 1–6; higher score signify more disturbed sleep)
 - Depressive symptoms (Hopkins Symptom Checklist [SCL-90], Hamilton Depression sub-scale. 6 items scored 1–5; higher scores signify more depressive symptoms)
- Covert coping, which is an indicator of patterns of avoidance in the work environment, a negative outcome that has been associated with poor employee health (8 items scored 1–4; higher scores signify more covert coping)
- Performance-based self-esteem, established as an important correlate of employee burnout (2 items scored 1–5; higher scores signify more performance-based self-esteem)

The main analysis was performed on participants (managers and subordinates) that completed assessments at baseline and at 18 months. A statistical analysis was used to test for differences between the two groups in how the outcome measures changed over time. After 18 months a pattern was clearly visible with an advantage for the art-based group. Compared to the conventional group, participants in the art-based group experienced a significant improvement in mental health ($n=51$, $p=0.014$), covert coping ($n=47$, $p=0.007$) and performance-based self-esteem ($n=51$, $p=0.005$).

4.3. Challenges Faced in Developing the Evidence Base for Arts and Health

As illustrated above, there is evidence available to support the value of arts on prescription-style programmes in improving health and wellbeing. However, studies providing such evidence are relatively few in number, despite the need to develop and strengthen the evidence base being identified over a decade ago. There are a number of reasons why this may be the case:

- Many arts-based programmes are complex interventions, with many facets that may contribute to improved outcomes, for example providing structure, building confidence and working in a group. The relative contribution of these may be different in different populations, and in different individuals. Therefore the process (or 'mechanism') by which these interventions improve outcomes is not easily understood.
- The people delivering arts on prescription-style projects may not be trained in evidence development, and as such their programmes are not designed in such a way as to maximise the value of their research. For example, there is a wide range of outcomes that can be assessed, and the measures used are often not standardised. This means that it is difficult to draw comparisons between studies, or to pool evidence from different studies together, as is done in meta-analyses.
- Even when programmes are considering the quality of evidence that can be generated in their study design, restrictions of the context in which such programmes are delivered can limit the extent to which this can be applied. For example, assigning a control group is not always practical, yet where a control or comparison group is not included, determining causality is then problematic.
- Importantly, evaluations take resources as well as expertise. Where insufficient time and support is allocated to evaluating a programme, the quality of the data gathered, and hence the strength of the results, can be compromised.

People involved in strengthening the evidence base for arts on prescription-style programmes are working in various ways to overcome these challenges. For example, realist evaluation can be used to explore generative methods of the outcomes seen. Additionally, an increasing number of programmes are partnering with research institutions in order to ensure their programmes are designed in a way as to maximise research value; research bodies are also publishing best practice research and evaluation guidelines with this intention.

4.4. Conclusion

Despite the challenges faced, the strength of the evidence base for arts in health generally, and arts on prescription-style programmes specifically, has increased somewhat in recent years. There is now high quality evidence of the value of arts on patient outcomes, including a small body of evidence on how this may translate into economic benefits. However, studies producing such evidence are still relatively few in number, and the strengths of their conclusions are often limited by factors such as small sample sizes. Going forwards, in order to build the evidence base for arts on prescription-style projects, it will be important to work to improve the design of more programmes and evaluations so that the quality of the evidence generated is improved. Also essential to this will be the coordination of efforts, such that evidence from different studies/programmes can complement each other and therefore be effective as a whole.

Appendix 1: Measuring Mental Health and Wellbeing

How is impact measured?

Information may be gathered through standardised **questionnaires**, which include both validated scales used across populations, as well as original scales specially designed for a population-specific intervention or outcome measure. While questionnaires collect quantitative data, **interviews** allow descriptive, qualitative responses that may be analysed by looking for patterns of meaning within the data that provide insight into an individual's thoughts and feelings.

Information may be sought from:

- **Healthcare professionals.** Physicians and psychologists provide professional diagnoses and treatment of mental illnesses.
- **Patients.** Patients provide 'experts by experience' perspectives on living and coping with mental health problems.
- **Stakeholders.** Support workers and programme facilitators provide feedback on service use and delivery, such as observed impact on service users and gaps in practice.

Occasionally, **biological or biochemical outcomes** are also measured. These might include brain scans, or measures of hormones or brain chemicals that are suspected to be related to mental health and wellbeing. However, the relationship between these clinical measures and real-life symptoms of mental illnesses are not always clear.

What Measurement Tools are Available?

The development and use of standardised scales that have been tested and proven to be accurate allows comparisons between different interventions. This ensures that the delivery of interventions is informed by an understanding of what works. Table 7 shows some commonly-used scales used to measure outcomes related to mental health and wellbeing on both an individual and a population level.

Table 7. Measurement tools for mental health and wellbeing

Mental illness	
Revised Clinical Interview Schedule	Completed by the physician for detection of common mental disorders like depression and anxiety.
Hospital Anxiety and Depression Scale	Completed by the patient and comprises seven items each for depression and anxiety.
Beck Scales and Inventories	Completed by the patient and includes a series of scales or inventories assessing depression, anxiety, hopelessness or suicidal ideation.
General Anxiety Disorder Assessment (GAD-7)	Completed by the patient and asks seven questions to screen for generalised anxiety.
Patient Health Questionnaire (PHQ-9)	Completed by the patient and comprises nine items, scored on a scale of 0 to 3, to assess the severity of depression. This measure is validated for use in primary care.
Individual mental wellbeing	
Affectometer 2	A 40-item scale comprising 20 positive and 20 negative statements or adjectives. Mental health status is determined by the degree to which positive feelings outweigh negative ones. The scale has been validated for use in the UK.
Well Being Questionnaire 12	A 22-item, multi-dimensional scale assessing depression, anxiety, vitality or energy and positive wellbeing.

Box 5: Features of Measurement Tools

Reliability

Indicates whether a scale is measuring an attribute in a way that is reproducible and consistent. "Test-retest reliability" indicates whether a scale yields similar results on two or more administrations, assuming that there has been no actual change during the intervening period.

Responsiveness

Indicates whether a scale can detect changes that matter to respondents over time. The terms responsiveness and sensitivity to change are often used interchangeably.

Validity

The extent to which a scale accurately reflects the concept that it is intended to measure.

General Health Questionnaire	A 60-item scale (shorter versions are available) developed as a screening tool for identifying psychological distress among adults.
Individual social and occupational functioning	
Social Support Questionnaire – Brief	A 27-item scale assessing the availability and level of satisfaction with social support.
Work and Productivity Impairment	Assesses absenteeism, presenteeism and impairment to usual non-paid activities (studies, housework, etc).
Quality of life	
WHOQOL-BREF	A 26-item scale assessing physical health, psychological health, social relationships and the environment (such as financial resources, health and social care, transport, etc).
EQ-5D	A five-item scale assessing mobility, self-care, usual activities (such as work, study, housework, family or leisure activities), pain or discomfort and anxiety or depression.
Population mental health	
Warwick Edinburgh Mental Wellbeing Scale (WEMWBS)	A 14-item, positively-worded scale assessing emotions (happiness, life satisfaction) and psychological function (relationships with others, self-realisation). The WEMWBS was used in Scotland to monitor positive mental health across the population.
Positive and Negative Affect Schedule (PANAS)	Two mood scales with 10 items each that measure positive and negative emotions. The accuracy of PANAS has been tested in a UK adult population.

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