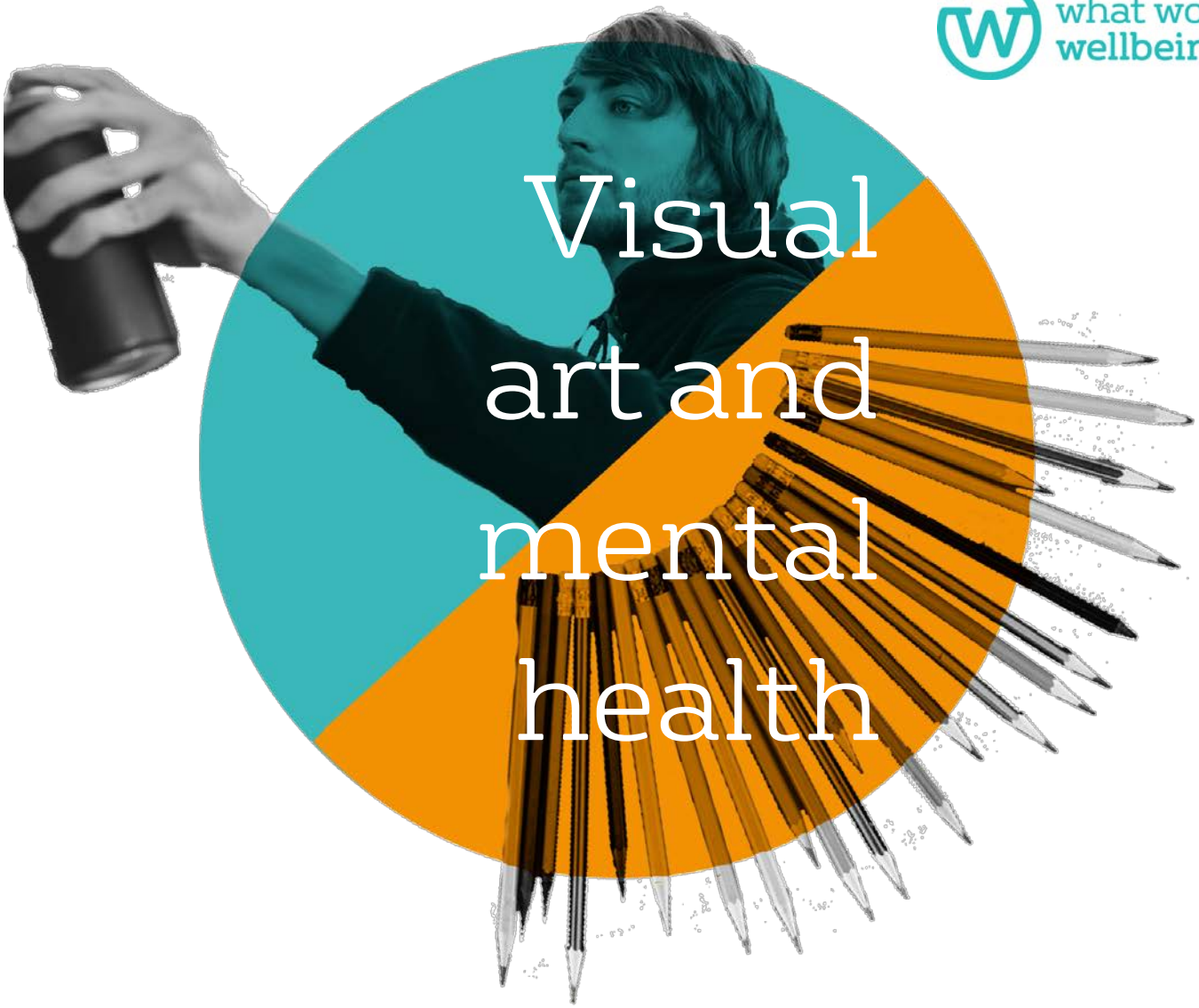
what works wellbeing



Visual art and mental health

A systematic review of the subjective wellbeing outcomes of engaging with visual arts for adults ("working-age", 15-64 years) with diagnosed mental health conditions

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About the What Works Centre for Wellbeing

What Works Centre for Wellbeing is an independent organisation set up to produce robust, relevant and accessible evidence on wellbeing. We work with individuals, communities, businesses and government, to enable them to use this evidence to make decisions and take action to improve wellbeing.

The Centre is supported by the ESRC and partners to produce evidence on wellbeing in four areas: work and learning; culture and sport; community; and cross-cutting capabilities in definitions, evaluation, determinants and effects.

Culture and sport evidence team is comprised of researchers from:

Executive Summary

Introduction

The protocol for this review is registered on the PROSPERO International Prospective Register of Systematic Reviews (registration number: CRD42017061008).

This systematic review aimed to address the primary question: What are the subjective wellbeing outcomes of engaging with (taking part in, performing, viewing) visual arts for 'working-age' adults (15-64 years) with diagnosed mental health conditions?; and a related secondary question: What are the processes by which the subjective wellbeing outcomes are achieved?

Methods and review approach

The review included empirical research that examined the relationship between visual arts interventions and subjective wellbeing in working-aged people with diagnosed mental health conditions, published from January 2007–April 2017. Grey Literature completed from January 2014-April 2017 was also included.

Two independent researchers searched ten electronic databases for studies using keywords related to visual arts, mental health and wellbeing. After removing duplicates the searches returned 4,820 texts for screening. The search results were split and independently reviewed by teams of two researchers, firstly via a title and abstract screen, and secondly by a full paper assessment. Eight published articles were agreed to be relevant to the scope and focus of this review. Six evaluation reports (grey literature) from UK-based visual arts programmes were also included. Researchers independently extracted data and assessed study quality using standardised forms. Thematic synthesis is provided in an examination of the overall findings, integrating the results from the published and grey literature.

Characteristics of included studies

The eight included studies comprise works from four countries - the UK, Australia, Sweden and the USA. The published articles include data from 163 participants, of which 102 were female and 61 male. We also include data from six UK-based grey literature studies.

The published texts were five qualitative studies, two quantitative, and one predominantly quantitative, but using mixed-methods. This latter was the single small-scale RCT included in the final selection of studies. Common limitations were: small study sample, weak intervention, researcher bias, and a lack of follow-up data.

The visual arts practices used included; painting or drawing, art appreciation and viewing, making and exhibiting art, and more general creative and craft activities such as ceramics or sculpture.

Numerous wellbeing measures were used in the quantitative published literature, with very little consistency. Concepts such as self-worth, self-esteem, confidence, depression, and anxiety featured in these studies and the utilised measures were scrutinised for evidence of self-reported evidence of subjective wellbeing. Meta analysis was not appropriate for this review. The qualitative studies presented accounts drawn primarily from interview data, but also thematic analysis of questionnaire responses and – in the one mixed-method study - from participants' written accounts.

The grey literature presented a range of visual arts interventions, including: photography, textiles, painting, mosaic-making, drawing, painting, sewing, collaging, printing, ceramics, and design practices; group-based creative arts; exhibiting artworks; self-directed creative art; and viewing art. Evaluation approaches used in the reports included: surveys, focus groups, interviews, wellbeing questionnaires, case studies, personal testimonies, and observations. The strongest reports adopted a mixed-methods approach and presented pre- and post-intervention data. Data gathered from the evaluations tended to be relatively small-scale, which was a limitation in the majority of reports.

Summary of study findings

Methodologically, the quality of the studies is not consistently high. Confidence in the five included qualitative studies was judged to be at the moderate level. For the quantitative studies, one was judged to be of very low quality and one of moderate quality. For the single, mixed-methods study, the reviewers considered it to be of moderate quality regarding the quantitative data, and judged the qualitative data to be of moderate level. Nonetheless, projects based on engaging with visual arts in non-clinical settings show that such engagement can be liberating, and transformative – in "normalising" ways - for participants.

In the quantitative studies, there is moderate quality evidence that drawing mandalas can reduce symptoms of trauma for those suffering from post-traumatic stress disorder (PTSD, one study) and that engaging in cultural activities can improve self-reported health and reduce symptoms of exhaustion for women with burnout (one study). There is low-quality evidence that taking part in arts and crafts, such as ceramic painting, flower arranging, and assembling leather belts or models in plastic or wood, can improve quality of life for those suffering from PTSD.

The qualitative articles in the review provide evidence that participation in the visual arts can create conditions in which wellbeing can be enhanced. Themes emerging from the five qualitative studies included; 'social enrichment and relationship building' through doing art practices with others; 'achievement and appreciation' from completing an art project, or simply regularly attending art sessions; using the intervention as a 'stepping stone' to taking part in other arts projects, or activities; a 'distraction or escape' from stigma or the trials of day-to-day life; 'doing and not talking' and establishing the basis of a new sense of identity when participants immerse themselves in a new and creative practice.

All the grey literature pointed to the value of engagement with the visual arts for heightened wellbeing, evidenced by the use, in four of the projects, of the Warwick

Edinburgh Mental Well-being Scale (WEMWBS). Themes from the evaluations included: improved confidence; identity gain – for instance, identifying people as members, not participants; connecting with others and reducing social isolation; belonging – for instance, intergroup bonding; doing - immersion in creative practice; and participation and engagement as a form of journey or stepping-stone - for instance, continuation in arts practice, employment or volunteering.

Strengths and limitations of the review

The number of hits (4,820) following initial searches means it is possible that some relevant evidence has not been included in this report. The focus on a specific target age group (15-64 years) will have excluded evidence from studies that have aggregated data across younger and older age groups in their analysis. However, in an effort to be inclusive we have included a small amount of data concerning participants who sit just outside of our age range. We undertook a comprehensive search strategy to identify all existing eligible studies (key texts) published within the search dates. The pre-publication of our protocol on PROSPERO ensures methodological transparency and militates against potential post-hoc decision-making, which can introduce bias to the process.

Dual screening of searches and data extraction and independent quality assessment using GRADE/CERQual schema for judging the quality of evidence ensured a rigorous process. The use of the GRADE/CERQual criteria introduces an element of subjective judgement. A consistent approach to judgements across the different interventions has been applied but it should be recognised that these judgements are open to interpretation.

Using published studies as the sole evidence increases the potential risk of publication lag, wherein possible important new evidence that has not yet been included in published reports is not identified and included. However, the grey literature review does include recent unpublished data from evaluations completed between 2014-2017. The quality of the grey literature, in their focus on context-specific processes, and, notably, the consistency of outcome data (through the use of WEMWBS), gives their findings some credibility.

Implications for research policy and practice

Wellbeing represents a key element of policy-making in the UK government's Department for Culture Media and Sport and this has stimulated a growing body of evidence on the relationship between the visual arts and wellbeing. However, with our focused review question, we have uncovered only a small number of relevant peer-reviewed research studies.

The lack of published evidence identified in this review should not, though, blur the policy need. There is scope to build evidence on wellbeing outcomes of the visual arts for those with mental health conditions through well-designed, rigorous and consistent research methods which are underpinned by relevant theory and use established methods of analysis.

It is not possible to conclude that findings in this review are generalizable across countries, yet there is no reason why the core themes that emerge from the findings should not be relevant to a wide range of social and cultural contexts. It is the political and policy context that remains less certain and predictable.

National and local policymakers should ensure that the partnerships of mental health professionals, artists and researchers are more adequately resourced, properly sustained, and informed by consistent and recognised evaluation methodologies and frameworks. This would facilitate a better understanding of the long-term benefits and wellbeing outcomes for those for whom innovative forms of visual art interventions have proved influential and potentially life-enhancing. Partnership funding across the governmental, private and voluntary sectors should be secured to support more extensive research, focusing in particular upon the long-term benefits of interventions and the sustainability of particular interventions and outcomes.

Training for wellbeing evaluation that captures the outcomes of the interventions and disseminates the findings across the interconnected political, practitioner, professional and research spheres would be invaluable. Both academic and non-academic dissemination would be essential in order to achieve the most effective research, policy and practice-based outcomes.

A systematic review of the subjective wellbeing outcomes of engaging with visual arts for adults ("working-age", 15-64 years) with diagnosed mental health conditions

July 2017

Introduction

Background

The potential for arts-based initiatives to promote wellbeing and mental health is recognised, and some evidence has reinforced anecdotal claims (Clift, 2012). Visual arts interventions have been shown to reduce anxiety and improve mood (Bell and Robins, 2007), enhance self-reported health (Johansson et al., 2001), promote personal growth through skill acquisition and improve self-esteem and quality of life (Hacking et al., 2006), and prevent re-admission to psychiatric hospitals (White, 2004). In clinical healthcare, people are commonly regarded as patients (Smith, 2002), whereas in arts-based initiatives, people can become artists with genuine control over what they are doing or creating (Argyle and Bolton, 2005). Argyle and Bolton (2005) found that practical involvement in visual arts provided a range of health and wellbeing benefits for vulnerable and mentally ill participants. They also highlight the relatively low cost of administering something simple, such as a drawing group, which can have a highly valuable outcome for people and communities (Argyle and Bolton, 2005).

Mental health conditions represent almost 50% of all illnesses in people younger than 65 years (Uttley et al., 2015). Whilst mental health problems account for a high degree of sickness, the NHS budget to treat people with mental illness is relatively modest, and the costs (from unemployment, sick leave, crime, etc.) and impact of mental illness on an individual and community level are significant. The Organisation for Economic Co-operation and Development (OECD) estimated that - in 2015 – mental health problems cost the UK economy approximately £80 billion (Naylor et al., 2016). Therefore, the NHS has come under increasing pressure to initiate cost-effective alternatives to better manage the needs of people suffering from mental health conditions (Uttley et al., 2015). It is recognised increasingly that visual arts projects can reduce the burden on the NHS (White, 2004), by encouraging community relationships and providing skills that increase personal expression and control (Malley et al., 2002). In the words of Michael Marmot, the degree to which people are able to participate in their community and exercise control over their own lives, provides a 'critical contribution to psychosocial well-being and health' (Foot, 2012: 3).

Previous evidence reviews in this field have focused on; the wellbeing and mental health benefits of arts attendance and participation (Toma et al., 2014); the clinical effectiveness and cost-effectiveness of art therapy for those with non-psychotic mental health conditions (Uttley et al., 2015); the wellbeing outcomes of participatory arts for older adults (Castora-

Binkley et al., 2010); the therapeutic benefits of creative activities on mental wellbeing (Leckey, 2011); and the impact of art, design and environment in a mental healthcare setting (Daykin et al., 2008). The evidence in the aforementioned reviews generally points to positive wellbeing outcomes for participants involved in visual/creative art interventions and projects. However, it is widely acknowledged that a substantial degree of evidence supporting these claims lacks reliability and validity, and is indistinct in the clarity of key terms, such as 'mental health' and 'wellbeing' (Leckey, 2011). Whilst visual arts interventions are increasingly understood as a public health resource which can support health and wellbeing, there needs to be a higher level of robust and critical evidence of their effectiveness, outcomes and real costs (Public Health England, 2016). Systematic reviews play a crucial role in gathering and extracting meaningful and influential evidence, but are equally valuable in locating gaps in research, exposing methodological inadequacies (and triumphs) and identifying future, more rigorous, research objectives.

To our knowledge, this is the first systematic review to specifically focus on the subjective wellbeing outcomes associated with visual arts participation for working-age adults (15-64 years) who have been diagnosed with a mental health condition.

The protocol for this review is registered on the PROSPERO International Prospective Register of Systematic Reviews (registration number: CRD42017061008).

Research Questions

1. What are the subjective wellbeing outcomes of engaging with (taking part in, performing, viewing) visual arts for adults ("working-age", 15-64 years) with diagnosed mental health conditions?

2.What are the processes by which the subjective wellbeing outcomes are achieved?

Funding

This review was supported by the evidence review programme within the UK What Works Centre for Wellbeing, and funded by the Economic and Social Research Council, UK (Grant Ref: ES/N003721/1).

Methods

Types of studies

We included studies that assessed the relationship between visual arts interventions and subjective wellbeing in working-aged people with diagnosed mental health conditions. We included empirical research: quantitative, qualitative or mixed methods, outcomes or process evaluations, published from January 2007–April 2017. A ten-year publication date-range was identified only after a period of research team consultation and test database searches. Wellbeing research in the field of visual arts and mental health is relatively new, and a ten-year range captures relevant and recent work and reduces the impact of publication lag and potentially dated research. We also identified systematic reviews for the

purposes of hand-searching the reference lists. Grey literature published from 2014-2017 was also included.

Types of participants

We included studies which focused on adults ("working-age", 15-64 years) with a diagnosed mental health condition, but excluded those with dementia. The population included any group or individual taking part in, performing or viewing visual arts, but not as paid professional artists. We included studies from countries economically similar to the UK (i.e. other high income countries with similar economic systems). Countries in which the studies are based were: Sweden, Australia, the USA and the UK.

Types of outcome measure

Included studies measured or reported subjective wellbeing using any recognised method or measure. A summary of the wellbeing measures used in the studies included in this review can be found in Appendix 1. Any health-economic component whose key outcomes were the outputs from cost, cost-utility, cost-effectiveness, cost-benefit and cost-consequence analyses, was disregarded for the purposes of this review.

Types of intervention

Our focus was on participatory visual art interventions including making, viewing, and performing/presenting. We excluded art therapy for clinical outcomes (e.g. physical health symptoms, morbidity and mortality), but included arts-based wellbeing interventions offered by a range of professionals and volunteers. We also excluded evidence relating to paid professional artists and clinical procedures such as surgery, medical tests and diagnostics.

Comparison

We included studies with an alternative intervention or usual routine/care, including inactive comparators or historical/time-based comparators/comparison groups.

Search methods for identification of reviews

Electronic searches

Electronic databases were searched using a combination of controlled vocabulary (MeSH) and free text terms. Search terms were incorporated to target empirical evidence on visual arts, mental health and wellbeing. We used specific filters to identify health economic evaluations. The OVID MEDLINE search strategy can be found below. All database searches were based on this strategy but were appropriately revised to suit each database. The following databases were searched from 2007-2017:

- PsychInfo
- OVID MEDLINE

- Eric
- Arts and Humanities Citation Index (Web of Science)
- Social Science Citation Index (Web of Science)
- Science Citation Index (Web of Science)
- Scopus
- PILOTS
- CINAHL
- International Index to Performing Arts (IIPA)

For the review of health economic evaluations we separately searched the following databases:

- OVID MEDLINE
- Scopus
- CINAHL
- NHS EED (NHS Economic Evaluation Database)
- HTA Technology Assessment database

Search Strategy (OVID MEDLINE)

1. MeSH descriptor: [well being]
2. well-being
3. wellbeing
4. “visual art*”.mp
5. drawing.mp
6. painting.mp
7. sculpture.mp
8. craft*.mp
9. handicraft.mp
10. ceramics.mp
11. pottery.mp
12. printmaking.mp
13. knitting.mp
14. woodwork.mp
15. textiles.mp
16. tapestry.mp
17. dressmaking.mp
18. “clothes making”.mp
19. upholstery.mp
20. crochet*.mp
21. illustration.mp
22. photography.mp
23. video.mp
24. filmmaking.mp
25. “moving image”.mp
26. animation.mp
27. “computer games”.mp

28. “digital art”.mp
29. “internet art”.mp
30. “performance art”.mp
31. “community art”.mp
32. “body painting”.mp
33. “body art”.mp
34. “face painting”.mp
35. graffiti.mp
36. “street art”.mp
37. “public art”.mp
38. “urban design”.mp
39. “landscape architecture”.mp
40. “participatory art”.mp
41. gardening.mp
42. “land art”.mp
43. “interior design”.mp
44. “interior decoration”.mp
45. “graphic design”.mp
46. (1 or 2 or 3) and (4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18, or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45)
47. “mental health”.mp
48. “mental illness”.mp
49. anxiety.mp
50. phobias.mp
51. “mood disorders”.mp
52. depression.mp
53. bipolar.mp
54. “postnatal depression”.mp
55. “seasonal affective disorder”.mp
56. mania.mp
57. hypomania.mp
58. “obsessive compulsive disorder”.mp
59. “psychotic disorders”.mp
60. schizophrenia.mp
61. hallucinations.mp
62. delusions.mp
63. paranoia.mp
64. “split personality”.mp
65. “personality disorder”.mp
66. “dissociative identity disorder”.mp
67. stress.mp
68. psychosis.mp
69. “panic disorder”.mp
70. “panic attacks”.mp
71. addiction.mp
72. “substance abuse”.mp

73. “eating disorder”.mp
74. anorexia.mp
75. bulimia.mp
76. “binge eating”.mp
77. “body dysmorphic disorder”.mp
78. “post traumatic stress disorder”.mp
79. “tic disorders”.mp
80. “quality of life”.mp
81. self-esteem.mp
82. loneliness.mp
83. “life adj satisfaction”.mp
84. happiness.mp
85. worthwhileness.mp
86. anxiety.mp
87. (46) and (47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58 or 59 or 60 or 61 or 62 or 63 or 64 or 65 or 66 or 67 or 68 or 69 or 70 or 71 or 72 or 73 or 74 or 75 or 76 or 77 or 78 or 79) and (80 or 81 or 82 or 83 or 84 or 85 or 86)
88. limit to humans, peer reviewed articles, age range 15-64.

Searching other sources

The reference lists of all relevant reviews from the last five years were hand-searched to attempt to identify additional relevant empirical evidence. A search of UK grey literature was conducted via an online call for evidence, employment of expert input, review of key sector websites and a Google search (see Appendix 5). Grey literature was included if it was a final evaluation or report on empirical data, had the evaluation of visual arts interventions as the central objective, was published 2014-2017, and included details of authors (individuals, groups or organisations).

Identification of studies for inclusion

Search results were independently checked by two review authors. Initially the titles and abstracts of identified studies were reviewed. If it was clear from the title and abstract that the study did not meet the inclusion criteria it was excluded. Where it was not clear from the title and abstract whether a study was relevant the full article was checked to confirm its eligibility. The selection criteria were independently applied to the full papers of identified reviews by two review authors. Where two independent reviewers did not agree in their primary judgments they discussed the conflict and attempted to reach a consensus. If they could not agree then a third member of the review team considered the title and a majority decision was made. Studies in any language were considered, although no foreign language texts are included in this review. A table of excluded studies can be found in Appendix 2.

Data collection and analysis

Data extraction and management

Data were extracted independently by two review authors using a standardised form (Appendix 3). Discrepancies were resolved by consensus. Where agreement could not be reached a third review author considered the paper and a majority decision was reached.

For quantitative evidence of intervention effectiveness, the data extraction form included the following details:

- evaluation design and objectives (the interventions studied and control conditions used, including detail where available on the intervention content, dose and adherence, ethics)
- sample (size, representativeness, reporting on drop-out, attrition and details of participants including demographics and protected characteristics where reported)
- the outcome measures (the scales used and the collection time-points, independence, validity, reliability, appropriateness to wellbeing impact questions)
- analysis (assessment of the methodological quality/risk of bias)
- results and conclusions
- the presence of possible conflicts of interest for authors

For qualitative evidence of intervention effectiveness the data extraction form included the following details:

- research design and objectives (interpretive, examining subjective experiences of participants, ethics)
- data collection (type/form, appropriateness, recording, theoretical justification)
- participants (numbers and details including demographic, recruitment strategy, theoretical justification)
- analysis (rigour, assessment of methodological quality, identification of bias/involvement of researcher, attribution of data to respondents, theoretical justification, relevance to wellbeing impact question)

Our protocol allowed us to contact the authors of articles in the event that the required information could not be extracted from the studies if this was essential for interpretation of their results. We did not need to do this with the published literature.

Assessment of methodological quality of included studies

We used the quality checklists for quantitative and qualitative studies as detailed in the What Works Centre for Wellbeing methods guide, and GRADE and CERQual approaches, to assess the quality of the included studies, and to inform the 'confidence' rating of each of the nine findings reported in the Thematic Synthesis.

The authors of included studies assessed the methodological quality/risk of bias in their research in a variety of ways. We refer to the judgements made by the authors of studies regarding the quality of evidence/risk of bias and report it within the context of our assessment of the quality of a study itself. Combining authors' own assessments and our own judgements in the checking process using GRADE criteria, we distinguished in the review process between evidence/studies of high, moderate, low, or very low quality.

Search Results

Search results (published literature)

After the removal of duplicates, the electronic searches included 4,820 records for screening. Of these, 98 were retained after title and abstract screening and the full-texts were then assessed. An additional two texts (total = 100) were considered following hand-searching of the reference lists of systematic reviews in the field of visual arts, mental health and wellbeing. Ninety-two records were excluded following full-text review. The full search screening process is illustrated in Figure 1. The search and screening process identified eight published studies concerning visual arts, mental health and wellbeing for working-aged people (aged 15-64 years). The full list of included studies can be found in the references section and Table 1.

Characteristics of included studies

The included studies examined the effects of various visual arts interventions for participants with diverse mental health conditions. A range of wellbeing outcomes was reported. The review does not include interventions for people living with dementia, since there is an existing evidence review base for this population group (see for example – Beard et al., 2012; and Windle et al., 2014). Similarly, this review has focused exclusively on a working-age population, as there has already been some focus on aging population groups in this subject area (see for example - Mental Health Foundation, 2011). Mental health conditions in the published materials included; psychosis, schizophrenia, substance abuse disorder, post-traumatic stress disorder, anxiety, depression, obsessive compulsive disorder, bipolar, and mixed chronic mental illnesses.

The review includes five qualitative studies, two quantitative studies, and one predominantly quantitative study using mixed-methods. There was a noteworthy lack of substantial, large-scale Randomised Controlled Trial (RCTs) studies in the published literature, with just a single small-scale RCT included in the final selection. Our team used established criteria for judging the quality of evidence. All five qualitative studies were judged to be of moderate quality. One of the quantitative studies was judged to be of very low quality, one of moderate quality. For the single, mixed-method study, the reviewers considered it to be of moderate quality in both its quantitative and qualitative aspects. Common limitations emerging from the texts were: small study sample, weak intervention, researcher bias, and a dearth of follow-up data. A summary of the characteristics of the included papers is presented in Table 1.

Grey literature searches

The grey literature search was undertaken concurrently with the Culture and Sport systematic review on visual arts, mental health and wellbeing. A call for UK-wide grey literature evidence on the wellbeing impacts of visual arts interventions for working-age people with mental health conditions, was presented on the What Works Centre for Wellbeing website between May and June 2017. The focus was on collecting, evaluating and synthesising the most recent work in the field, in order to assess contemporary approaches. The call therefore only targeted evaluation reports completed from 2014 and 2017.

Additionally, and in conjunction with the What Works Centre for Wellbeing, our team conducted an extended systematic search of grey literature. Specifically, colleagues (i) contacted known experts in the field for submissions of unpublished reports, (ii) placed regular prompts on social media outlets (i.e. Facebook, Twitter and LinkedIn), (iii) provided daily reminders during mental health awareness week in May, (iv) reviewed websites of prominent visual arts organizations, (v) searched the British Library EThOS website for unpublished PhD dissertations, and (vi) conducted a web search using the key words – 'visual art, mental health and wellbeing', and reviewing titles of the first 100 hits.

Despite operating an extensive and thorough search strategy, and extending the submission deadline by four weeks, a total of only 12 submissions was screened by the research team, of which six met the inclusion criteria. Submissions reviewed for eligibility included nine received through the call for evidence, with three obtained via the extended search for grey literature. No PhDs were included. Reasons for exclusion were 'not visual art intervention', 'not working-age population, 'not published between 2014-2017', and/or 'not wellbeing related'. Table 2 presents a summary of the grey literature (six evaluation reports) included in this review. In order to capture project details we used an adapted version of the Public Health England Arts and Health Evaluation Framework (Daykin with Joss, 2016) to record information such as: project activity, aims, location, setting, timescale, population, costs and reported outcomes. The team also recorded evaluation details where reported, including rationale, method, costs, data collection and analysis techniques, and findings (see Appendix 4).

Projects reported in the grey literature covered a range of visual arts interventions for working-age adults with mental health conditions, comprising: mixed-arts workshops, including photography, textiles, painting, mosaic-making, drawing, painting, sewing, collaging, printing, ceramics, and design practices; group-based creative arts; exhibiting artworks; self-directed creative art, enabled through discussion and tutorage; and viewing art. Evaluation approaches used in the reports included: surveys, focus groups, interviews, wellbeing questionnaires (i.e. WEMWBS), case studies, personal testimonies, and observations. The strongest reports adopted a mixed-method approach and presented pre- and post-intervention data. Data gathered from the evaluations tended to be relatively small-scale, which in most cases limited the precision of the evidence presented. Small sample size and inconsistent participant data are acknowledged as limitations in the majority of reports.

Figure 1. PRISMA flow diagram of the search screening process

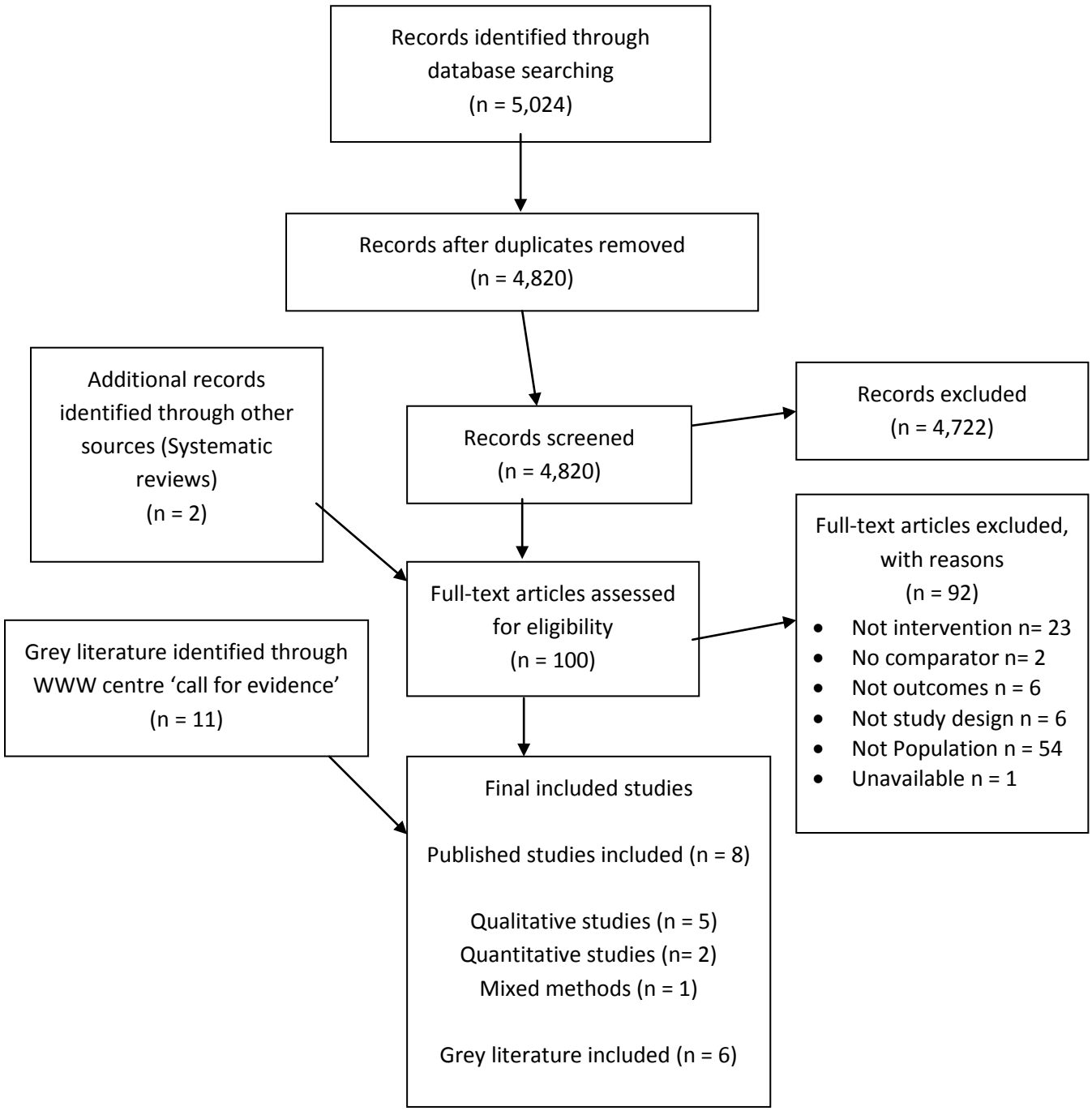

Table 1: Characteristics of included studies

Authors	**Date**	**No of Participants** (recruited and completed)	**Participant Description** (include protected characteristics)	**Intervention/comparison**	**Outcomes and measures (quant) / methods (qual) used**	**Study Design**	**Conclusions**	**Limitations**
Colbert, S. Cooke, A. Camic, P. and Springham, N.	2013	N =12	Gender: 6 male, 6 female. Age: late twenties to early sixties. Ethnicity: 11 white British, 1 Middle Eastern. Mental health condition: 4 had schizophrenia, 1 had bipolar disorder, 1 had schizoaffective disorder, 1 had both bipolar and schizoaffective disorder, 5 staff.	The intervention included viewing, discussing and making art within an art gallery setting. There were 4 weekly sessions each lasting 2.5 hours No control group	Qualitative interviews at end of intervention	Qualitative	The findings suggest that some individuals used art-related concepts to modify the dominant narrative within their personal narrative. A community narrative regarding a different staff–client relationship, characterised by validation, commonality, friendship and genuineness, emerged within the group. The intervention was depicted as promoting recovery and wellbeing, mainly through achievement, and described as more successfully addressing bonding social capital than bridging social capital.	Small participant base with two participants withdrawing prior to completion. An inclusion criterion was an interest in art and findings may well be different in a group with no pre-existing interest in art.
Detweiler, M. Self, J. Lane, S. et al.	2015	Recruited: N = 49 Completed: N=24	Gender: 23 male, 1 female. Age: M = 46.4 (SD = 11.9).	Occupational therapy (OT): chose from a large variety of crafts, such as ceramic painting, flower arranging, and	(1) The Quality of Life Enjoyment and Satisfaction Questionnaire–Short Form (Q-LES-	Randomized pilot study.	Analysis of the tests suggests that over the course of the interventions, both groups improved on	High dropout, and low completion rate. Short treatment period.

Authors	Date	No of Participants (recruited and completed)	Participant Description (include protected characteristics)	Intervention/comparison	Outcomes and measures (quant) / methods (qual) used	Study Design	Conclusions	Limitations
			Mental health condition: 19 had 1 or more pre-existing medical conditions and were taking an average of 4 medications (SD = 4). All participants had at least 2 psychiatric diagnoses, with alcohol dependence being the most common primary diagnosis (n = 17), followed by cannabis dependence (n = 3), opioid dependence (n = 2), amphetamine dependence (n = 1), and opioid abuse (n = 1). 19 participants also had a secondary diagnosis of substance dependence (n = 18) or abuse (n = 1), 14 had a tertiary diagnosis of substance dependence (n = 13) or abuse (n = 1).	assembling of leather belts or models in plastic or wood. Horticultural therapy (HT): gardening activities such as adding soil to garden boxes, planting seeds, watering, weeding, and harvesting the vegetables and flowers. Both groups attended supervised HT and OT sessions 1hr/day, 5 days/week for 3 weeks.	Q-SF) (2) The Alcohol Craving Questionnaire (ACQ-NOW) (3) The Posttraumatic Stress Disorder Checklist Civilian Version (PCLC) (4) The Center for Epidemiologic Studies Depression Scale (CES-D)		some of the wellbeing outcomes but there was no significant difference between the 2 groups. The HT group improved on the PCLC (PTSD) (p=0.035), CES-D (depression) (p<0.001), and Q-LES-Q-SF (QoL) (p=0.001) measures post-test compared to baseline, whereas the OT group had significant within group improvements on the ACQ-NOW (alcohol craving) (p=0.04), CES-D (depression) (p=0.05), and Q-LES-Q-SF (QoL) (p=0.029).	No control group.
Henderson, P. Rosen, D. and Mascaro, N.	2007	N = 36 Intervention : N=19, Control N=17.	Undergraduate students. Gender: 8 male, 28 female Age: 18 to 23 (M =18.4,	The drawing sessions took place across 3 consecutive days, with all participants drawing for a total of 20 minutes	(1) Symptom severity of PTSD (The PDS Scale; Foa, 1995).	RCT	There were no significant differences between the mandala and the control group in the measures of	Small sample size. Gender imbalance in sample.

Authors	Date	No of Participants (recruited and completed)	Participant Description (include protected characteristics)	Intervention/comparison	Outcomes and measures (quant) / methods (qual) used	Study Design	Conclusions	Limitations
			SD = .934). Types of trauma: assault (n = 3), auto accident (n = 4), death or suicide of a family member or close friend (n = 7), physical abuse (n = 4), separation of parents or other family stressor (n = 4), serious health concern of family or self (n = 4), sexual abuse (n = 4), verbal abuse (n = 2), and witness to a traumatic event (n = 4). Severity of the trauma: ranged from 10 to 36 (mean trauma severity= 21.47, SD = 7.08).	each session. Drawing Mandalas: drew a large circle on their paper and then filled the circle with representations of feelings or emotions related to their trauma using symbols, patterns, designs and colours. Control condition: drew an object as detailed as they could.	(2) The Beck Depression Inventory, Second Version (BDI-II; Beck, Steer, and Brown, 1996). (3) The Spiritual Meaning Scale (SMS; Mascaro, Rosen, and Morey, 2004). (4) The Pennebaker Inventory of Limbic Languidness (PILL; Pennebaker, 1982). (5) The State–Trait Anxiety Inventory (STAI; Speilberger, 1983) Outcomes measured at Baseline (Time 1), completion of the intervention (Time 2) and at 1-month follow-up (Time 3).		depression (BDI-II), spiritual meaning (SMS), anxiety (STAI), or physical symptoms (PILL) at the end of the intervention or after 1 month follow up. However, there were significantly less PTSD symptoms (PDS) in the mandala condition compared to the control group at 1 month follow up [F(1, 35) = 6.615, p <.015].	

Authors	**Date**	**No of Participants** (recruited and completed)	**Participant Description** (include protected characteristics)	**Intervention/comparison**	**Outcomes and measures (quant) / methods (qual) used**	**Study Design**	**Conclusions**	**Limitations**
Lawson, J. Reynolds, F. Bryant, W. and Wilson, L.	2014	N = 8	Gender: 5 male, 3 female. Age: 39-65 (median age 45). Mental health condition: Self-identified as having mental health problems such as anxiety and/or depression. In addition to these problems, 2 reported diagnoses of schizophrenia, 2 with obsessive compulsive disorder, and 1 with a personality disorder.	'Ways of Seeing' 2-year community-based arts project. Art skills workshops and gallery visits and created their own artistic responses to the selected artwork and public exhibition. No control group	Qualitative semi structure interviews 10 months into the 2-year project. Exploring experiences of people during their engagement in the 'Ways of Seeing' community-based arts project.	Qualitative	The findings reveal several ways in which a protracted community arts project influences the subjective well-being of people who access mental health services. Participants experienced the arts project as improving self-worth, emancipating self from illness labels, offering a sense of belonging, enabling acquisition of valued skills, and offering meaningful occupation and routines. Some regarded their developing creative skills as improving their self-management of mental health. However, some anticipated the project's ending with anxiety	Interviews conducted half way through the project. Participants who had an acquired brain injury were not distinguished from participants who attributed their mental health problems to other issues. One transcript was of limited use as the respondent had a speech impediment.
Makin, S. and Gask, L.	2012	N = 15	Gender: 7 male, 8 female Age: 22- 62 Ethnicity: White British	'Time Out' Arts on Prescription service: 2 x 2 hour sessions/week. Guided by professional artists through a series of activities e.g. drawing and painting, pottery,	Thematic analysis of responses to questionnaires.	Qualitative	For some people with common and chronic mental health problems of depression and anxiety, an arts-based therapeutic programme aided the process of	Relatively small sample size. Recruitment of participants by the project mental health worker may have

Authors	Date	No of Participants (recruited and completed)	Participant Description (include protected characteristics)	Intervention/comparison	Outcomes and measures (quant) / methods (qual) used	Study Design	Conclusions	Limitations
			Mental health condition: Persistent anxiety and depression who had already tried a psychological 'talking'-based therapy	gardening, photography and more. No control group			recovery, characterized as returning to normality, through enjoying life again, returning to previous activities, setting goals and stopping dwelling on the past.	focused upon those with particularly positive experiences, so under-representing any negative aspects of the programme.
Stickley, T. and Hui, A.	2012	N = 16	Gender: 8 male, 8 female Ethnicity: 13 White British, 1 Black British, 1 Asian, 1 Afro-Caribbean. People who were using or had used mental health services	Arts on prescriptions programme of work. 10-week blocks of sessions led by professional artists in community locations. Most sessions mixed media. No control group	In-depth interviews about specific aspects of people's lives in relation to engagement with Arts of prescription programme of work.	Qualitative narrative inquiry	Participants experienced Arts on Prescription as a creative and therapeutic environment. It was considered a safe place where they could be creative with others who share similar experiences. Participants experienced social, psychological and occupational benefits.	Small sample size.
Thomas, Y. Gray, M. McGinty, S. and Ebringer, S.	2011	N = 4	Gender: male Age: 40-65 Ethnicity: 1 Australian Aboriginal Homeless adults using a drop-in centre	Ongoing art facility at a drop-in centre for homeless people No control group	Qualitative participant observation and interviews	Qualitative	The study demonstrates how participating in a meaningful activity such as art contributes to the goal of community participation for people who are chronically homeless. The pull towards occupational engagement with others is evident through the	Small sample size. The inclusion of the art programme facilitator and drop-in manager could have created a bias in emphasising positive benefits of the programme.

Authors	**Date**	**No of Participants** (recruited and completed)	**Participant Description** (include protected characteristics)	**Intervention/comparison**	**Outcomes and measures (quant) / methods (qual) used**	**Study Design**	**Conclusions**	**Limitations**
							participant's motivation to regularly attend the art project and the continuity and routine they attest to as a result.	
Viding, G. Osika, W. Theorell, T. et al.	2015	Intervention : N = 36 Control: N = 12	Gender: Female Age: 41 - 70 (M = 53.8, SD= 8.15) Mental health condition: Diagnosed with burnout/ exhaustion symptoms (KEDS score 2 +)	A 'Cultural Palette' activity group: 6 activities - interactive theatre, movie, vocal improvisation and drawing, dance, mindfulness training and musical show. Sessions were 90 minutes, once a week over a 3-month period. Control: no intervention	(1) Karolinska Exhaustion disorder scale (KEDS) (2) Sense of Coherence (SOC) (3) Toronto Alexithymia Scale (TAS) (4) self-rated health (SRH) Outcomes measured at baseline, 3 months (after the intervention completion) and 6 months (three months after the intervention)	Quantitative randomised comparative study	Participants in the intervention group had significantly improved outcomes in measures of exhaustion (KEDS) (P< 0.001), alexithymia (TAS) (P=0.007), and self-rated health (SRH) (P<0.001) compared to the control group. However, there was no statistical difference between the 2 groups in their sense of cohesion.	Study limited to women with exhaustion symptoms.

Findings of Included Papers

Study participants

The review includes published data from 163 participants (61 male, 102 female) from four countries – the UK, Australia, Sweden and the USA. Whilst qualitative studies outweigh the number of quantitative texts included in this review, most of these participants (108) were involved in small-scale and localised quantitative studies, including a randomised sample design and a pilot study. Studies included male and female adults in the age range 15-64. Where documented, ethnic backgrounds included White Caucasian (the predominant category), Asian, Australian Aboriginal, and Afro Caribbean. In the grey literature participants were both male and female and in some cases data on adults, included in samples that also included children, were extracted from the overall data-base and findings. Generally grey literature was included if the report or evaluation revealed informative findings for the evidence review, particularly in cases or contexts where the evidence from published studies was limited.

Types of visual arts interventions

In the published literature

The most common form of intervention reported was based on arts participation programmes, two of them (Stickley and Hui, 2012; Makin and Gask, 2011), in the English cities of Nottingham and Salford respectively, based in the referral initiative Arts on Prescription (AoP). One study included viewing, discussing and making paintings and was located at Dulwich Picture Gallery in London (Colbert et al., 2013). A community-based arts programme in a museum in Woking, Surrey, England (Lawson et al., 2014) involved studying and making artwork, and curating an exhibition. A programme of occupational therapy for military veterans in Virginia, USA, provided arts and crafts activities as the focused intervention (Detweiler, 2015). Drawing mandalas was the specific practice considered in a study of undergraduates (Texas, USA) with post-traumatic stress disorder (Henderson et al., 2007). A drop-in centre for the homeless, in Queensland Australia, provided the setting for an art programme anchored in sketching and painting on paper or canvas (Thomas et al., 2011). A 'cultural palette' including drawing provided the activity for subjects in a Swedish study (Viding et al., 2015). Several interventions were led by arts practitioners or a combination of health professional, arts specialist and/or researcher. Interventions ranged from three days to two years.

In the grey literature

A variety of UK-based visual arts activities and projects was reported in the grey literature, though the specific nature of the arts activity or practice was not always clear. Interventions included painting, drawing and a range of creative and craft practices. Interventions were in all cases led by practitioners and facilitators, in numerous cases working with researchers.

Wellbeing measures

A wide variety of wellbeing-focused measures and methods was used in the published literature, with little consistency on the nature of *subjective wellbeing.* Concepts such as self-worth, self-esteem, confidence, depression, and anxiety featured in the studies and the utilised measures were scrutinised for evidence of self-reported evidence of subjective wellbeing. Personal, or subjective, wellbeing has been measured in the UK by the Office of National Statistics (ONS), but only since 2011. The questions used in the UK's Annual Population Survey (APS) to monitor personal wellbeing are (1) Overall, how satisfied are you with your life nowadays? (2) Overall, to what extent do you feel the things you do in your life are worthwhile? (3) Overall, how happy did you feel yesterday? (4) Overall, how anxious did you feel yesterday? No included study used these questions, but the measures (quantitative) and rich textual descriptions (qualitative) presented in the published studies provided evidence relevant to the overall wellbeing debate.

The quantitative studies in the included studies employed the outcome measures listed in Appendix 1.

Summary of Results

Following a section of short summaries of the qualitative papers, complementing tabulated data in Table 1, descriptions of the grey literature, and summaries of the three quantitative papers, a thematic synthesis is provided of the overall findings, integrating the results from the three types of sources. The synthesis of the results reported in the qualitative papers and the grey literature involved an initial stage of manual coding of the findings reported in individual articles and reports, followed by the generation of descriptive categories which framed the interpretive findings that constitute the thematic synthesis.

Summaries of qualitative papers and grey literature

We provide here short summaries of the five published qualitative studies, the qualitative element in one of the included quantitative studies, and the six pieces of grey literature. The voices of the subjects in the specific settings and contexts of the studies are essential to the thematic synthesis, where direct quotes of subjects/respondents are reported in italics.

1. Colbert et al., 2013, "The art-gallery as a resource for recovery for people who have experienced psychosis", *The Arts in Psychotherapy*, 40: 250-56.

The Colbert study is a small-scale qualitative intervention rooted in a social constructionist epistemology which holds that multiple understandings of reality or of a selected phenomenon can be valid at any one time. The study was located in the Dulwich Picture Gallery in London, England, and comprised seven client-participants and five staff-participants. The client-participants were recruited via a complex needs service in a mental health NHS trust; the staff-participants were one educator and one coordinator from the gallery staff, one art therapist, and two NHS staff – an occupational therapist and an occupational therapist technician – who accompanied the clients. Staff-participants undertook the same activities as the client-participants.

The intervention involved interactive sessions in which a painting was introduced by the museum educator; participants then sketched/drew whatever they chose, in the gallery, with the educator on hand to field queries about any of the paintings and not just the one that had been the focus of the first session. The group then moved into the gallery's studio and all were invited to create an art-work, with the art therapist acting as facilitator and the educator still available as a source of support or encouragement.

2. Lawson et al. (2014) "'It's like having a day of freedom, a day off from being ill': Exploring the experiences of people living with mental health problems who attend a community-based arts project, using interpretive phenomenological analysis", *Journal of Health Psychology*, 19/6: 765-777.

This is a small study based on interviews with eight participants (five men, three women, aged 39-65 [median age 45]) who self-identified as having long-term mental health problems such as anxiety, depression, and schizophrenia. More particularly, two of the subjects/participants reported diagnoses of schizophrenia, two of an obsessive-compulsive disorder, and one of a personality disorder. The methodological/theoretical framework of the study is that of interpretive phenomenological analysis (IPA).

The eight subjects were recruited as established participants in a community arts programme, *Ways of Seeing* (WoS), based in The Lightbox, a museum in Woking, Surrey, UK. They were not referred by any formal mental health services. The eight were recruited 10 months into the two-year project, from a total group of 25 who were engaged in the art-making phase of the project. Overall, the project involved art skills workshops, gallery visits and the creation of their own artistic responses to selected artworks, culminating in a public exhibition. None of the eight had previous experience of community art-making.

3. Thomas et al., 2011, "Homeless adults engagement in art: First steps towards identity, recovery and social inclusion", *Australian Occupational Therapy Journal*, 58: 429-436.

This small-scale study is based in a phenomenological approach generating "semi-structured and conversational purposive interviews" with four male participants, including one Aboriginal, who used a drop-in centre for the homeless in Queensland, Australia. The interviewees had been participating in an Arts Programme running for two years at the time the interviews were conducted. All four were raised in non-indigenous families, though one was identified as Aboriginal; and all four were middle-aged, between 40 and 65 years. Eight participants had been initially identified as interview subjects, but issues related to acute psychosis and cognitive impairment meant that this number was halved, due to ethical considerations as well as practical constraints.

The Arts Programme provided a three-hour weekly activity, run by a non-government organisation, in art-skills germane to sketching and drawing. It included, initially, specific drawing skills and broadened out into the provision of opportunities for participants to develop and use their own painting styles and art skills. Artistic styles included traditional Aboriginal artwork, portraits, still life, and landscapes, and the activities beyond painting included crafts: some participants created necklaces, bracelets with beads, and a fishing line. Attendance on the programme was voluntary, though sobriety was a "condition" of attendance.

4. Makin and Gask, 2011, "'Getting back to normal": the added value of an art-based programme in promoting 'recovery' for common but chronic mental health problems", *Chronic Illness*, 8/1: 64-75.

This is a qualitative study of subjects engaged in an *Arts on Prescription* (AoP) programme, Start 'Time Out', run in Salford, UK, 15 of whom were interviewed (30-90 minutes) relating to how the programme and the process of participation "helped with specific symptoms of anxiety and depression", and with the "recovery" process. The sample comprised eight women and seven men, all White British (age range 22-62 years). The topics for the interview prioritised the respondents' views on how AoP had helped with how s/he functioned in everyday life, with the prospect of getting back to work, and with anything else "involved in recovery". The concept of "recovery" framed the overall study. All respondents had previous experience of talking treatments/therapies, and in interview they were also asked how AoP differed from such treatments.

The AoP "service" offered up to two two-hour sessions weekly, with all materials and equipment provided. Professional artists were on hand to guide participants through activities including drawing, gardening, painting, photography, pottery, "and more". The project could last up to six-months, after which a participant could join what is described as "the member-led art group".

5. Stickley and Hui, 2012, "Social prescribing through arts on prescription in a UK city: participants' perspectives", *Public Health*, 126: 574-579.

This small-scale study is framed as a qualitative narrative enquiry, based on 16 in-depth interviews conducted with participants in an *Arts on Prescription* (AoP) programme in the English city of Nottingham, UK. The AoP initiative is, it is noted at the beginning of the article, anchored in the humanistic psychology of Carl Rogers, and the narrative inquiry employed in the study "draws on the Aristotelian account of human morality as developed and transmitted through the meaning-making activity of story-telling". The 16 interviewees in the study (eight male, eight female) were self-selecting, though all AoP participants had been referred by mental health professionals in the primary and secondary care sectors, and also the voluntary sector. One male was Asian, one female was Afro-Caribbean; the rest were White British. No ages were specified. In the AoP participants attended sessions led by professional artists, held in community-based venues, and engaged in artistic practices across mixed media, in groups of usually no more than 10 participants.

6. Henderson et al., 2007, "Empirical study on the healing nature of mandalas", *Psychology of Aesthetics, Creativity and the Arts*, 1/3: 148-154.

This is a study of undergraduate students, with 19 in the study/intervention group and 17 in the control group, all with self-reported traumas. The study explores the healing potential of drawing mandalas, referencing the influence of Jungian theory and Buddhist spiritual thinking, and includes a qualitative dimension based on written descriptions by participants of the symbolic meaning of mandalas. These were written at the 1-month follow-up session after the end of an intervention that involved three consecutive days of sessions, in which participants made drawings of mandalas for a total of 20-minutes each session.

7. Cohan et al., *An Evaluation of Hive Connecting Creativity*, May 2017, Leeds Beckett University, UK.

Hive, a charity in Shipley, Yorkshire, UK, has provided creative courses for people with low to moderate mental health problems, "with the aim of improving wellbeing". Participants in the evaluation were drawn from three programmes provided by Hive, all with the shared aim to "improve people's health and wellbeing, their connections to others and their self-confidence by encouraging creativity in a group setting". One programme focuses upon creativity, runs for ten weeks and culminates in a show or an exhibition, another is based on creative eco-therapy, and the third is a drop-in session covering a range of activities such as drawing, crafting, pottery, woodwork and sewing.

8. Willis Newson, 2015, *Evaluation of "Your Future" 2014-15* (client Roses Theatre, Tewkesbury, Gloucestershire, UK).

This is an evaluation of an "innovative cross art-form project" that provided - in 2014-15, the third year that the project ran - a 20-week programme of activities at six arts venues across the county of Gloucestershire, UK, for women, young people and children who had experienced domestic abuse. The project aimed to improve the emotional and mental wellbeing of the participants, looking to affect their confidence and self-esteem, and to reduce social isolation. Activities included mosaic-making, ceramics and textiles.

9. Jones, *Make It 2016 Evaluation Report*, Public and Community Learning, Tate Liverpool, UK.

Make It was a UK-based community-learning partnership between the art gallery Tate Liverpool, Mersey Care NHS Foundation Trust and the City of Liverpool College. It aimed to engage vulnerable young people (aged 18-25) in the arts, targeting those who had been living with mental health issues. The first phase was a flexible four-week series of sessions in a non-clinical supportive and creative environment at the Tate Liverpool gallery, based on the partners' co-design of an Access Course that used "art and creativity as a wellbeing tool". It was an introductory phase, using the gallery as a learning resource, exploring the gallery and experimenting with materials and ideas. Four students registered for phase one at the beginning of the course, a fifth joining at the end of phase one; five – though not the same five – registered for phase two.

10. Calvert, compiled by, July 2016, *A Report on Art in Healthcare's Art Project for Baronscourt Surgery: Developing an Arts-Based Social Prescribing Service Using an Occupational Therapy Model*, Art in Healthcare, Edinburgh, UK.

This report evaluates a small-scale pilot arts-based social prescribing service, Art in Healthcare, which, from 2015-2016 sought to engage "patients of the surgery in participatory art workshops aiming to improve their health and wellbeing while producing artworks for the walls of the surgery". Art in Healthcare had been running art workshops since 2011, and this one was based upon five participants at the Baronscourt Surgery in Edinburgh, UK. The participants were characterised by anxiety or depression linked to social isolation, limited budget/income, unemployment, being middle-aged, and living in the community but with a reliance on regular visits to General Practitioners (GPs). The project

combined an Occupational Therapy model with the arts-prescribing process, the participants attended art workshops over four weeks, and their own works were then hung on the surgery walls and a celebration organised for family and friends.

11. Allan, text by, November 2015, *Arts on Prescription: Arts-based Social Prescribing for Better Mental Wellbeing*, Cultural Commissioning Programme, UK.

This report summarised the key outcomes of three partnerships in which arts activities were prescribed to individuals experiencing mental health issues**.** A consortium of seven third-sector organisations delivered 'Colour Your Life', commissioned by Durham County Council's Public Health Team. The consortium manager reported that "the outcomes we see are a growth in confidence, being able to cope and wanting to give back". In part, it grew from a successful *Arts on Prescription* (AoP) initiative. Consortium "members" were referred by a variety of organisations but could also self-refer. Those referred could join a ten-week programme, fully funded. Qualitative and quantitative data have been generated in evaluations, though these have been selective, targeting particular cohorts.

12. Designs in Mind, 2017, *Designs in Mind: A Studio of Designer Makers Referred Through Mental Health Service 2016-2017 Impact Reports*, Oswestry, UK.

Designs in Mind (DM) states "the challenge" at the opening of this report: 1 in 3 of GP appointments relates to mental health; lives are at risk because the support people need is frequently unavailable when they need it; and for many the stigma of mental health is a burden greater than the illness itself. DM's response is to create high-quality ambitious and experimental art and design work for participants/members, setting creative challenges, fostering friendship networks and supporting members identify a sense of purpose in their lives. Members have created numerous art pieces, including a 40m-mosaic path, ward signs, felt wall-hangings, a 2msq mosaic entranceway, and Perspex birds. DM has also been commissioned by large businesses to design and make awards (trophies).

Table 2: Summary of grey literature titles, authorship and organisation

Author (year)	Submission Title/Web Link	Organisation
Joanna Allan (2015)	Arts-based social prescribing for better mental wellbeing	Arts on Prescription
Amelia Calvert (2016)	A Report on Art in Healthcare's Art Project for Baronscourt Surgery	Art in Healthcare
Susan Coan, Jenny Woodward and Sarah Patrick (2017)	An Evaluation of Hive Connecting Creativity	Hive and Leeds Beckett University
Alison Jones (2016)	Make It 2016 Evaluation Report	Tate Liverpool, Mersey Care NHS Foundation Trust and the City of Liverpool College
Willis Newson (2015)	Evaluation of Your Future 2014-15	Roses Theatre (Gloucestershire County Council)
Catherine Wilks (2017)	Designs In Mind Impact Report 2016-2017	Designs In Mind

Summary of quantitative papers and results

1. Detweiler et al., 2015, "Horticultural Therapy: A pilot study on modulating cortisol levels and indices of substance craving, posttraumatic stress disorder, depression, and quality of life in veterans", *Alternative Therapies*, 21/4: 36-41.

The study assessed the effect of Horticultural Therapy (HT) against non-horticultural Occupational Therapy (OT) - arts and crafts groups engaged in ceramic painting, flower arranging, and assembling leather belts or models in plastic or wood - on cortisol levels (not relevant to this review), depression, symptoms of posttraumatic stress disorder (PTSD), alcohol cravings, and quality of life. The two groups attended supervised HT and OT sessions five hours a day, three days a week, for three weeks.

Observed trends suggest that HT and OT could modulate stress in veterans, in decreasing depressive symptoms. Separate 1-way analyses of covariance (ANCOVA), with the baseline scores as the covariate, compared scores between groups on The Quality of Life Enjoyment and Satisfaction Questionnaire–Short Form (Q-LES-Q-SF; Endicott et al., 1993), The Alcohol Craving Questionnaire (ACQ-NOW; Singleton et al., 1995), The Posttraumatic Stress Disorder Checklist Civilian Version (PCLC; Weathers et al., 1991), and The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). A repeated measures ANOVA test was also used to examine the pre- and post-test differences within each group.

Q-LES-Q-SF: Both the HT and OT group significantly improved in QoL scores post-intervention compared to pre-intervention (HT group p=0.001, OT group p=0.029), however there was no significant difference in QoL between the HT and OT groups post-intervention

(p=0.2). ACQ-NOW: Participants in the OT group had significantly improved scores post-intervention compared to pre-intervention (p=0.04). There was no significant difference in the HT group (p=0.118) nor was there a significant difference between the 2 groups post-intervention (p=0.475). PCLC: Participants in the HT group had significantly improved scores post-intervention compared to pre-intervention (p=0.039). There was no significant difference in the OT groups pre-to post-test scores (p=0.135), nor was there a significant difference between the 2 groups post-test scores (p=0.784). CES-D: Both the HT and OT groups significantly improved post-test compared to pre-test (HT p<0.001, OT p=0.05), but there was no significant difference between the 2 groups post-test (p=0.201).

In summary, results from the one-way ANCOVAs showed that there was no significant difference between the groups on any of the self-reported outcome measures. Within-group comparisons showed that the HT group improved on the PCLC (PTSD) (p=0.035), CES-D (depression) (p<0.001), and Q-LES-Q-SF (QoL) (p=0.001) measures post-test compared to baseline, whereas the OT group had significant within-group improvements on the ACQ-NOW (alcohol craving) (p=0.04), CES-D (depression) (p=0.05), and Q-LES-Q-SF (QoL) (p=0.029). This shows that over the course of the interventions, HT activities and OT activities including arts practices, produced some improvement of wellbeing outcomes, but with no significant difference between the 2 groups.

2. Henderson et al., 2007, "Empirical study on the healing nature of mandalas", *Psychology of Aesthetics, Creativity and the Arts*, 1/3: 148-154.

This study measures the benefits of the creation of mandalas for those suffering from post-traumatic stress disorder (PTSD). The mandalas drawing sessions took place across three consecutive days, with each participant drawing for a total of 20 minutes each session.

Henderson et al. (2007) measured symptom severity of Post-Traumatic Stress Disorder (PTSD) (The PDS; Foa, 1995), symptoms of depression (The Beck Depression Inventory, Second Version [BDI-II]; Beck, Steer, and Brown, 1996), the extent to which an individual believes life has a purpose (The Spiritual Meaning Scale [SMS]; Mascaro, Rosen, and Morey,2004; Mascaro and Rosen, 2006), state and trait anxiety (The State–Trait Anxiety Inventory [STAI]; Speilberger, 1983), and physical symptoms (The Pennebaker Inventory of Limbic Languidness [PILL]; Pennebaker, 1982). For each measure, a one-way analyses of covariance (ANCOVA) was conducted comparing the mandala and the control group, controlling for differences in baseline scores of the outcome being tested.

There were no significant differences between the mandala and the control group in the measures of depression, spiritual meaning, anxiety, or physical symptoms at the end of the intervention or after 1-month follow up. However, there were significantly fewer PTSD symptoms in the mandala-drawing group compared to the control group at 1 month follow up [F(1, 35) = 6.615, p <.015]. To clarify, descriptive statistics for PDS measure show the following, Mandala group - Baseline: M=19.37 (SD 7.06), post intervention: M=18.05 (SD 9.71), 1 month follow up: M=13.42 (SD 8.45). Control - Baseline: M=15.71 (SD 6.89), post intervention: M=15.41 (SD 8.49), 1 month follow up: M=15.47 (SD 8.62).

3. **Viding et al., 2015, "'The culture palette' – a randomized intervention study for women with burnout symptoms in Sweden", *British Journal of Medical Practitioners*, 8/2.**

The study examined the extent to which exhaustion, sense of coherence, alexithymia and self-rated health among women with burnout symptoms, can be positively affected by cultural activities. The intervention comprised six cultural activities: interactive theatre, movies, vocal improvisation and drawing, exploring dance, mindfulness and contemplation, and musical show. Every session lasted for 90 minutes.

Participants completed questionnaires at baseline (prior to the sessions), three months (after the intervention completion) and at six months (three months after the intervention). They measured the mean change across time in the summary scores for each measure. They analysed the results for each outcome measure using Linear Mixed Models which adjusted for baseline results. Group (intervention and control) and time (baseline, three month and six months) were set as fixed factors. The Karolinska Exhaustion disorder scale (KEDS), Sense of Coherence (SOC), Toronto Alexithymia Scale (TAS) and Self-rated health (SRH) were utilised.

KEDS: there was a statistically significant two-way interaction (P<0.001) with a decreased mean from baseline to three and six months respectively in the intervention group whereas in the control group there was no change. The mean difference between groups at 6 months was 9.9 (SE=3.0), in favour of the intervention group. SOC: The intervention group showed slight increases in SOC scores over time (baseline M= 118.0 SD= 28, 3-month M= 121.1 SD= 30.5, 6-month M= 123.9 SD=28.2) but there was no significant difference between groups' mean scores. TAS: There was a statistically significant decrease in the intervention group compared to the control group in the total TAS score (P=0.007), the mean difference between the groups at six months was 5.4 (SE=2.2), in favour of the intervention group. It was also significant for two of the subscales; difficulty describing (P=0.004, 2.4 (0.9)), and difficulty recognizing (P=0.051, 2.6 (1.3)), but not for external orientation (P=0.334, 0.5 (0.8)). SRH: There was a statistically significant difference between the groups (P<0.001) where mean scores increased over time in the intervention group, but decreased in the control group (mean difference not reported).

In summary, participants in the intervention group had significantly improved outcomes in measures of exhaustion (KEDS) (P< 0.001), alexithymia (TAS) (P=0.007), and self-rated health (SRH) (P<0.001), but there was no statistical difference between the two groups in their sense of cohesion.

Table 3: Summary of numerical data from included quantitative studies

Author (date)	Intervention	Outcome description	Baseline		Follow up 1		Follow up 2		Limitations
			Intervention Numbers Mean (SD)	Control Numbers Mean (SD)	Intervention Numbers Mean (SD)	Control Numbers Mean (SD)	Intervention Numbers Mean (SD)	Control Numbers Mean (SD)	
Detweiler, M. Self, J. Lane, S. et al. (2015)	Occupational Therapy (crafts) vs horticultural therapy. 1hr/day, 5 days/week for 3 weeks	(1) The Quality of Life Enjoyment and Satisfaction Questionnaire–Short Form (Q-LES-Q-SF) (2) The Alcohol Craving Questionnaire (ACQ-NOW) (3) The Posttraumatic Stress Disorder Checklist Civilian Version (PCLC) (4) The Center for Epidemiologic Studies Depression Scale (CES-D)	NR		covariate-adjusted Mean Scores (SD - NR) **OT group** Q-LES-Q-SF: N = 10 M = 61.22# ACQ-NOW: N = 11 M = 1.61# PCLC: N = 9 M = 46.99 CES-D: N = 9 M= 21.31#	covariate-adjusted Mean Scores (SD - NR) **HT group** Q-LES-Q-SF: N = 12 M = 71.05# ACQ-NOW: N = 13 M=1.91 PCLC: N = 8 M= 48.52# CES-D: N = 12 M = 15.61#	n/a		High drop-out, low completion rate. The treatment period was short, and no control group was included (although there is a comparator). Reporting isn't clear and participants are unaccounted for. Small sample and low power.
Henderson, P. Rosen, D. and Mascaro, N. (2007)	Mandala drawing vs drawing an object. 3 x 20 min sessions, over 3 days.	(1) Symptom severity of PTSD (The PDS Scale; Foa, 1995). (2) The Beck Depression	N = 19 PDS: M = 19.37 (7.06) BDI-II: M = 17.95	N = 17 PDS: M = 15.71 (6.89) BDI-II: M = 15.35	N = 19 PDS: M = 18.05 (9.71) BDI-II: M = 16.63 (11.74)	N = 17 PDS: M = 15.41 (8.49) BDI-II: M = 13.35 (7.03)	N = 19 PDS: M =13.42 (8.45)* BDI-II: M = 13.95	N = 17 PDS: M = 15.47 (8.62) BDI-II: M = 13.06	Small sample size and gender imbalance.

Author (date)	Intervention	Outcome description	Baseline		Follow up 1		Follow up 2		Limitations
			Intervention Numbers Mean (SD)	Control Numbers Mean (SD)	Intervention Numbers Mean (SD)	Control Numbers Mean (SD)	Intervention Numbers Mean (SD)	Control Numbers Mean (SD)	
		Inventory, Second Version (BDI-II; Beck, Steer, and Brown, 1996). (3) The State–Trait Anxiety Inventory (STAI; Speilberger, 1983) (4) The Spiritual Meaning Scale (SMS; Mascaro, Rosen, and Morey, 2004). (5) The Pennebaker Inventory of Limbic Languidness (PILL; Pennebaker, 1982).	(9.26) STAI-State: M = 45.05 (10.75) SMS: M = 64.05 (6.81) PILL: M = 127.5 (29.84)	(7.11) STAI-State: M = 49.05 (12.29) SMS: M = 64.88 (13.08) PILL: M = 123.6 (24.28)	STAI-State: M = 41.16 (11.30) SMS: M = 62.83 (9.19) PILL: M = 120.8 (29.71)	STAI-State: M = 44.05 (10.12) SMS: M = 63.05 (13.87) PILL: M = 123.0 (22.47)	(9.50) STAI-State: M = 40.95 (11.54) SMS: M = 63.79 (10.49) PILL: M = 114.9 (24.13)	(8.55) STAI-State: M = 42.0 (13.26) SMS: M = 64.94 (12.38) PILL: M = 121.1 (16.91)	
Viding, G. Osika, W. Theorell, T. et al. (2015)	A 'Cultural Palette' of 6 activities (90 mins, once a week over 3 months) Vs no intervention	(1) Karolinska Exhaustion disorder scale (KEDS) (2) Sense of Coherence (SOC) (3) Toronto Alexithymia Scale (TAS)	KEDS: N=35 M=31.7 (8.4) SOC: N=33 M= 118.0 (28.0)	KEDS: N=12 M= 32.7 (8.2) SOC: N=12 M= 117.2 (29.9)	KEDS: N=34 M= 23.6 (8.6) SOC: N=33 M=121.1 (30.5) TAS: N=31	KEDS: N=12 M= 34.9 (9.2) SOC: N=12 M= 112.8 (30.3) TAS: N=12	KEDS: N=33 M= 23.7 (10.1)* SOC: N=34 M=123.9 (28.2)	KEDS: N=12 M= 33.9 (8.7) SOC: N=12 M= 115.1 (24.2) TAS:	Limited to women with exhaustion symptoms. Did not control for outside activities, such as doing walks in nature.

Author (date)	Intervention	Outcome description	Baseline		Follow up 1		Follow up 2		Limitations
			Intervention Numbers Mean (SD)	Control Numbers Mean (SD)	Intervention Numbers Mean (SD)	Control Numbers Mean (SD)	Intervention Numbers Mean (SD)	Control Numbers Mean (SD)	
		(4) self-rated health (SRH)	TAS: N=34 M=48.3 (13.4) SRH: N=36 M= 4.8 (1.9)	TAS: N=12 M= 49.7 (13.1) SRH: N=12 M= 5.2 (1.5)	M= 45.6 (13.9) SRH: N=36 M= 6.0 (1.9)	M= 51.3 (13.3) SRH: N=12 M= 4.6 (1.9)	TAS: N=34 M=42.4 (10.8)* SRH: N=35 M= 6.4 (1.9)*	N=12 M= 49.8 (13.9) SRH: N=12 M=3.6 (1.6)	

Key
*p<0.05 between groups
#p<0.05 from baseline to follow up within groups
NR: not reported

Overall Themes from Published Sources and Grey Literature

Adults suffering from mental health conditions – many of whom have endured long-term experiences of anxiety and depression – report that they experience existential problems connected with loneliness, isolation, a lack of focus for projected activity, and low levels of self-worth and self-esteem. The articles and reports in this review - across the spectrum from the statistical quantitative work to the phenomenological qualitative studies, and the reports and evaluations in the grey literature – confirm that sustained engagement in or with the visual arts can create conditions in which self-esteem and confidence are restored. This can offer people a sense of future and re-engagement with others – "bonding" within groups, as some studies report. But for such positive subjective wellbeing outcomes to be understood fully, more resources are needed in the sector to enable longitudinal studies of participants to be undertaken. The more innovative projects need to be more realistically resourced with collectively committed teams of researcher-practitioners working together on more standardised measures of wellbeing outcomes and documentation of participants' experiences and perceptions of their subjective wellbeing.

Methodologically, the quality of the studies is not consistently high. Limitations include small samples and lack of pre- and post-intervention data. There is evidence, nevertheless, that projects based on activity programmes undertaken in non-clinical settings can be experienced as liberating, potentially transformative – in "normalising" ways - for participants. As we bring the findings of the review together, the emerging themes confirm how much work needs to be done - and what kind of work – if visual arts interventions and visual art practices are to deliver their full potential for the enhanced subjective wellbeing of adults who have been suffering from mental health conditions. These nine themes are discussed in an integrated analysis of the evidence from the qualitative, quantitative, and grey literature sources. We also comment on the level of confidence that we have in each of these findings on the basis of the application of Grade/CERQual criteria.

Thematic synthesis of evidence

1. *Social dimensions and human relationships*: "Bonding" was an important theme, as recognised explicitly in two of the studies (Colbert et al., 2013; and Stickley and Hui, 2012). Subjects gained much through forms of renewed association with others. Both studies referenced Robert Putnam's study *Bowling Alone* (2000), in which he discusses bonding as an exclusive form of social capital, as opposed to 'bridging' which is inclusive across social groupings. Putnam observes that "bonding capital bolsters our narrower selves" (p. 23) but for people with mental health conditions the recognition by and respect from others in the bonding dynamic is an important source of self-esteem and growing confidence; the visual arts experiences could reinforce this. The development of "a greater sense of self" (Thomas et al., 2011) was central to, and further stimulated by, such bonding processes. Increasing self-confidence within a group was a major form of subjective wellbeing for many, and was fostered by the bonding relationship. Community (Thomas et al., 2011), making new friends (Colbert et al., 2013), engaging with others (Lawson et al., 2014), helping each other (Makin & Gask, 2011), a sense of belonging (Cohan et al., 2017), social contact (Willis Newson, 2015), reduced social isolation (Calvert, 2016), meeting new people (Allan, 2015), expanded social networks (Wilks, 2017) – such examples of a social dimension reduced the social isolation of individuals, a common thread in the majority of the studies/sources. We are

confident that this evidence, drawing upon findings from a range of studies and evaluations, can inform policy and practice in the field.

2. *Stepping-stone/journey*: Several papers show how participants see and use the intervention as a 'stepping stone' (Makin and Gask, 2011), reaffirming a term previously acknowledged in practice and research in the field. Such a metaphor implies a renewed openness to the future (Stickley and Hui, 2012). Making art is seen as "*one more step in a big journey*" (Colbert et al., 2013). The negative side of this might be the fear of the world 'out there', and pressure to fulfil a task; only a few participants, though, expressed such a fear. We have moderate confidence in this evidence, coming as it does from a limited number of studies.

3. *Achievement/appreciation*: Tackling a task, taking on a project, these aspects of everyday life that come in a routine way to many, are what many subjects in the studies had been lacking until their engagement with the visual arts. Attendance itself on a regular basis was a form of achievement for some (Lawson et al., 2014), and participants in several studies (Thomas et al., 2011; Makin & Gask, 2011; Lawson et al., 2014) appreciated the regular visual arts orientated routine, which offered some sense of continuity and stability which may have previously been absent in their lives. The making element, the capacity to produce and sometimes display or exhibit artefacts or artworks, could generate respect in ways that made participants feel appreciated. Ten participants in one study (Colbert et al., 2013) stated that the project had contributed to their wellbeing, with "achievement, the physical process of art-making and distraction" seen as "enhancing recovery and wellbeing". We have moderate confidence in this evidence, as the sample sizes are relatively small.

4. *Distraction/safe haven*: The most effective interventions took place in stigma-free public spaces, such as galleries or museums, or community centres, where the participants could feel that they were not defined by the mental health world or system. Well-supported by a facilitator or a team of specialists, participants could relax in such a safe haven and in engaging with the art and any related task, find a distraction from their everyday anxieties. Programmes such as Arts on Prescription created a safe space where participants could be creative with others who share similar experiences (Stickley and Hui, 2012). With engagement in a non-threatening environment homeless members of a regular weekly art group could focus away from the problems of everyday life: "*Everything that is buzzing around up here in my brain just disappears when I sit down there and pick up these brushes*" (Thomas et al., 2011). Immersion in an activity provided the possibility of "*a few hours where your mind is occupied and absorbed by what you're doing ... so it takes your mind off reality for a while"* (Makin & Gask, 2011). We have moderate confidence in this evidence, which is drawn from relatively few small-scale studies.

5. *Doing/action, not talking*: To take on a commitment and enter a programme is a giant stride for people who have been experiencing chronic social isolation, and the 'doing not talking' (Makin and Gask, 2011) was a critical feature of the interventions for numerous individuals. Talking therapies may be an important source of self-understanding, but engagement with and immersion in an activity could establish the basis of a new sense of identity, as others – tutors, facilitators, artists – expressed interest in what you were doing, not "*what your condition is*", as one respondent put it. For the homeless (Thomas et al., 2011), a weekly arts programme acted as a centrepiece of the individual's week, a form of

"engagement in meaningful occupation" that could foster improved wellbeing. We have relatively low confidence in the evidence underpinning this finding, as the evidence is drawn from two small-scale studies.

6. *Confidence building*: Acquiring new skills can boost confidence and self-esteem, in making art and exhibiting, in a private view for families or friends (Jones, 2016; Calvert, 2016). Meeting new people can reduce everyday fears: "*It's made me a happier person. My depression isn't as bad. I'm not as scared of doing new things and meeting new people. It has changed my life*" (Allan, 2015). The art practice in a supportive context was a source of increased confidence, restoring "*self-worth*", the project bringing the person "*back in the world*" (Lawson et al., 2015). A member/participant at *Designs in Mind* observed that "*before I came here I very rarely left the house. I couldn't talk. When I look back to how I was then to how I am now - it is an enormous change. This place has taught me new skills. Slowly my confidence has come back…I now realise that there is a future. I do a lot more out and about now - I can go to the shops, I take my son to school now on my own which I could never do before. My life has expanded, it has opened up. Before it was isolated and closed off to everything.*" (Wilks, 2017). We have moderate confidence in the evidence supporting this theme, as common findings are reported in a range of evaluations and projects.

7. *Identity gain*: Engaging with and in the visual arts can provide a foundation for the renewal of identity - "*you're not treated like a weirdo, you're allowed to be you*" (Stickley & Hui, 2012). In one study (Lawson et al., 2014) seven out of eight subjects agreed that engagement in art was enabling them to forge an identity beyond the over-determining influence of their mental illness; this was greatly helped by the ways in which they felt treated as normal members of the public in the museum/gallery: "*stepping into their world and being welcomed in*", and, the quote from the article's title, "*it's like having a day of freedom*". Identity gain through an increased sense of belonging in engaging in visual arts with others has reduced mental-health labelling and stigma as felt by participants (Lawson et al., 2014). The process of recovery through re-narrativisation can also contribute to a renewal of identity (Colbert et al., 2013). Participants who become members or volunteers can experience beneficial changes in their sense of identity (Wilks, 2017). We have relatively low confidence in the evidence on identity gain, but recognise it as an important emergent theme.

8. *Improved quality of life*: An arts and crafts group, suffering from PTSD, engaged in ceramic painting, flower arranging, and assembling leather belts or models in plastic or wood, for three days a week, five hours a day, over three weeks, significantly improved Quality of Life scores post-intervention compared to pre-intervention (Detweiler et al., 2015). Improved self-rated health can also be a positive effect of cultural activities for women who are experiencing burnout (Viding et al., 2015). We have low confidence in this evidence due to the methodological limitations and low quality of the studies.

9. *Reduction in trauma symptoms and reduced exhaustion*: Drawing mandalas – seen as sources of healing in a tradition including the influence of Jungian theory and Buddhist spiritual thinking - across three consecutive days, for only twenty minutes each session, can reduce symptoms of trauma for those suffering from PTSD (Henderson et al., 2007). Cultural activities can also reduce exhaustion for women with burnout (Viding et al., 2015). We have moderate confidence in the evidence on these effects, which is drawn from one focused

and specific study of moderate quality, and relevant aspects of the second, low qualitry study.

The use of the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) has shown in a number of settings - (Wilks, 2017; Allan, 2015; Willis Newson, 2015; Cohan et al., 2017) – how sustained engagement in visual arts and art/design practices can achieve considerable improvement in wellbeing for people suffering from long-term addiction or depression.

Summary of Key Findings and Discussion

The evidence from the studies is on the whole of moderate quality. The one small-scale, mixed-methods RCT, a US study with an undergraduate sample, showed that a focus upon a particular drawing practice – drawing mandalas – can decrease symptoms of trauma compared to a control group, according to data taken at a one-month follow-up point. On other measures, such as those concerning anxiety, there were no significant differences. The mandala-drawing exercise effect was specific to symptoms of post-traumatic stress, and two participants confirmed the positive outcomes in snapshot personal testimonies. The study recognised the Buddhist view of the mandala as a meditative tool, and acknowledged that the use of the mandala as a therapeutic tool was first proposed by Carl Jung. Its findings should therefore be seen as a form of testing-out of a long-established proposition. Another quantitative study of moderate quality showed that a range of activities in a 'cultural palette' could decrease burnout symptoms for a sample of women in Sweden, as well influencing improvements in their self-rated health. A study of US military veterans with stress and anxiety conditions produced low to very low quality evidence questioning the positive effects of artistic activity, as compared with horticultural therapy undertaken by another group.

The qualitative studies, all rated as of moderate evidence quality, nevertheless produced clear findings. Common to several of these studies, all in the UK (London, Salford, Nottingham, Woking) was a focus upon visual arts-based interventions in a local *in situ* setting, a gallery, or an up-and-running programme; a setting that was seen as safe and a form of haven, also outside of the 'mental health system' as some saw it. The voices of subjects in these studies indicate the importance of social contact, intra-group bonding and support, improved confidence, achievement and accomplishment, an immersive distraction in art-making, and potential re-formation of identity for enhanced subjective wellbeing. A study in Queensland, Australia, confirmed the capacity of art-making as a meaningful activity contributing to community participation for chronically homeless individuals.

The evidence from the grey literature more than complements the key findings of published studies, in particular the qualitative ones. It expands the evidence base, and also demonstrates the importance of secure participation – what *Designs in Mind* in Oswestry, England, calls 'membership'. This breaks the language of client, participant or patient-dependency, and puts in place a longer-term trajectory of art and design activity, albeit with the risk of the practice itself becoming a new form of dependency rather than the 'stepping stone', as several studies observe, to a new phase of life.

The most convincing evidence from the three types of study summarised above confirms the importance of social capital and self-esteem in the enhancement of wellbeing for people

with mental health conditions. Engagement with the visual arts – both viewing and producing/making, but even more so when the two are combined - can be a considerable force in this process. Small-scale the studies might be, in some cases over-reliant upon individual testimonies and lacking corroborative evidence or the test of triangulation. But the making, the looking, and the learning in the visual arts interventions have had positive wellbeing outcomes for the individuals in the studies.

Engagement with the visual arts can help people with mental health conditions overcome stigma and begin to see the possibilities – the life chances – that they may have thought have bypassed them. These are modest findings, then, but with significant potential consequences. It is some time since Erving Goffman (1963) demonstrated the deep-rooted consequences of stigma, suffered as a form of what he called 'spoiled identity', and Ralf Dahrendorf (1979) argued convincingly for the importance of life-chances for all in a contemporary participatory democracy. The adults in the studies and reports in this systematic review are testimony to the capacity of visual arts to help people overcome stigma and see once more a future based upon life-chances and opportunity.

To conclude this section of the report on findings, it is useful to restate the research questions, and to add the answers that have emerged to those questions, before going on to comment on the quality base of the published works, the strengths and limitations of the review, and the wider context in which these findings can be understood.

1. What are the subjective wellbeing outcomes of engaging with (taking part in, performing, viewing) visual arts for adults ("working-age', 15-64 years) with diagnosed mental health conditions? The answer, in summary, is, for the participants/respondents:

- reduction in felt and reported levels of depression and anxiety
- increase in self-respect, self-worth and self-esteem
- re-engagement with the wider, everyday social world (enhanced social capital)
- potential renegotiation of identity through practice-based forms of making or doing

2. What are the processes by which the subjective wellbeing outcomes are achieved? The answer is threefold. Intervention projects should:

- secure safe-space and havens for interventions
- recognise the value of non-stigmatising settings
- support and sustain collaborative facilitation of programmes and sessions.

Secondary analysis of the UK database *Understanding Society* reports that, among people with a history of depression, engagement in visual art is positively related to both life satisfaction and mental health, though viewing visual art is more strongly related to SWB than producing visual art, particularly among females (Dolan and Testoni, 2017). Variability across particular forms of the visual arts is also noted. In this systematic review, the positive subjective wellbeing outcomes identified in the studies were not shown to be applicable to men rather than women, to people in middle-age rather than to young adults. The increases in wellbeing were – with the exception of 15-20 year olds who were not represented, as far as we could see, in the studies - experienced by both male and female adults across the age

range from young adulthood to the early sixties.

Completeness of included evidence

The included, published literature in the review includes one small-scale RCT (Randomised Control Trial), a randomized pilot study, and several cohort studies (pre/post-test data-collection) of a relatively small-scale qualitative kind. These, as noted earlier in this review, came from studies in the UK, the USA, Sweden, and Australia. Of the eight published articles, five qualitative studies met our inclusion criteria and though there is an issue of the (methodological) quality level of such work, these publications confirm that qualitative research methods have the potential to provide revealing – potentially rich - insights into the sources and types of wellbeing benefits that can accrue from engagement with the visual arts by people with mental health conditions. Such insights are still more arrestingly displayed in the best evaluations among the grey literature. Six such reports/evaluations generate corroborative and accumulative evidence – albeit, to reiterate, from varied quality levels - from the perspectives of the subjects, on the wellbeing benefits of engagement with the visual arts. The six cases from within the UK are from the North, North-West, or North-East of England (3), Scotland (1), and the English/Welsh border (2).

Quality of the included evidence

The review includes no studies that have been categorised as of high quality. Of the three quantitative studies, two were of medium quality and one of low quality. On the basis of the GRADE approach to assessing quality, the controlled design in the small-scale RCT on drawing mandalas (Henderson et al., 2007) produces convincing evidence on the benefits of a particular, highly focused practice, suggesting that a single form of visual arts practice can have positive wellbeing outcomes. The other quantitative study that registered relatively highly within the medium evidence rating (Viding et al., 2015) identified the benefits of a 'cultural palette', mixing practice and performance including film and drawing, but alongside other artistic practices and mindfulness training. From even the stronger of the quantitative analyses, then, we cannot conclude that a broad set of artistic or visual arts practices is more or less beneficial to participants than is a focus upon a particular visual arts practice. The five qualitative studies were all graded as of medium quality, a judgement based upon the limited samples in the study or the possible bias in a sample, such as the sample in the strongest of these studies (Colbert et al., 2013), which, as the authors recognised, was characterised by a shared declared interest in art across the participants. Overall, then, the quality evidence on the subjective wellbeing outcomes is moderate, as there is relatively little evidence from the small-scale studies in terms of volume of participants (numbers in study samples ranged from 4–48); also, the question of sample bias, as just discussed, is not uncommon in interventions and studies of this small and specialised scale.

The grey literature generated research findings of both a qualitative and a quantitative kind, and in the best quality cases combined measures of wellbeing at pre- and post-intervention points, using the WEMWBS questionnaire, and complementing these descriptive data with interviews and/or focus group commentaries. Some reports constructed case studies of individuals, in extended quotations. Given our review is concerned with the visual arts and their effects upon levels of wellbeing, it was good to see, in several of these reports, stills

and/or short films of the artwork produced by participants, and the settings in which they worked both individually and collectively in producing these artworks. The best reports employed forms of inductive analysis identifying core themes, in some cases – where researchers were funded to carry out an evaluation – generating studies of higher quality than some of the published studies. The weaker reports were unclear on the processes of research design or were hampered and limited in significance by very small samples in intervention groups, or by over-reliance upon prominent voices in small sample populations. Only a minority of the grey literature reports had sought and gained ethics approval for the evaluation.

Strengths and limitations of the review process

The large number of hits following initial searches was reduced by rigorous screening processes. The combination of a focus upon working-age people, who have experienced mental health conditions, a range of visual arts practices/interventions, and the requirement to identify evidence relating to subjective wellbeing, meant that few studies met the search criteria. It is undoubtedly possible that some relevant evidence has been overlooked, though we have sought to be inclusive when, for instance, a sample included one or two subjects over the age of 64, or included minors and children though presenting evidence discretely in the case of adult respondents. We are confident that the comprehensive search strategy has ensured that the final sample of published works and grey literature reports/evaluations is a valid representation of existing eligible studies published within the prescribed search dates. The pre-publication of our protocol on PROSPERO has also ensured methodological transparency, deflecting any potential post-hoc decision-making that might have biased, or threatened the objectivity of, the process. We have taken all measures, in a collaborative team effort, to ensure that dual screening of searches and data extraction, and independent quality assessment of included reviews, have underpinned a rigorous overall process.

It is recognised that to take published studies as the sole evidence in response to a precise research question can increase the potential risk of publication lag; in such a circumstance, important new evidence not yet included in published reports may remain unidentified and therefore excluded. Alternatively, such evidence may be thin on the ground because the methodological breakthrough has not yet occurred that would provide works and studies answering any new and precise research question. In such a scenario, smaller-scale qualitative studies can be innovative and ground-breaking, as can modestly framed project or intervention-based initiatives that generate well-researched outcomes and reliable evidence. It is such a situation that provides the context of this systematic review, in which quantitative studies have less profile and impact than do qualitative studies; and the latter are in some ways in turn exceeded in significance by the credible evaluations and reports anchored in practitioner-led interventions and initiatives. In this reversal of orthodoxy, the apparently suggestive or merely speculative becomes the source of understanding, potential progress and research-related policy and social action. An alleged limitation thus becomes a strength.

The use of the GRADE and CERQual approaches will inevitably introduce an element of subjective judgement. A consistent approach to judgements of the quality of different and

diverse interventions and studies has been adopted throughout the screening process; it must nevertheless be held in mind that any such judgements could be disputed, and at the very least will be open to interpretation.

Implications for research, policy and practice

Some published studies from the UK included in this review captured a particular policy moment, when the model of Arts on Prescription (AoP, sometimes known as Arts on Referral) was emerging, fuelled by a dual commitment to a) help people with mental health conditions access the perceived benefits of engagement in and/or with the arts, and b) identify ways of supporting people with mental health issues re-engage with the everyday world whilst simultaneously reducing dependency upon health services including regular attendance at GP (general practitioner) surgeries and practices. Stockport, in the north of England, is recognised as the site of the first implemented case of the named AoP initiative. In the broader debate on arts and health in the UK, the Department of Health of the Conservative government of 1988 produced an 'arts and healthcare' report, and it has also been recognised that the (New) Labour government of 1997 broadened the arts and health agenda, so that by 2007 'arts and health' was an established item on the government agenda (Stickley and Hui, 2012). It is therefore important to recognise that in the UK context interventions in this field have a relatively long-standing cross-political and growing significance. That we have found there to be little substantial evidence on the efficacy of the emerging model or intervention is therefore a serious outcome of the review, and raises important concerns across policy, practice and research.

It is not possible to conclude that findings in this review are generalizable across countries, though there is no reason why the core themes that emerge from the findings should not be relevant to a wide range of social and cultural contexts. It is the political and policy context that remains less certain and predictable. With common findings across both the qualitative and quantitative published studies included in this review, and the reports from the grey literature, there is a clear message for national and local policymakers concerning the visual arts and mental health:

- engagement with visual arts can support forms of re-engagement with other people in a local culture and community
- visual arts activities, of various kinds, can reduce depression and social isolation
- interventions are most effective when located in safe but non-stigmatising settings, facilitated by empathetic teams of practitioners/researchers.

The visual arts and related artistic, creative and craft practices have the potential to enhance the subjective wellbeing of adults affected and afflicted by mental health conditions. The potential of this for phased progress towards recovery, for building community engagement, for the re-employment of people whose confidence has been rebuilt and restored, some of whom have thrived with the new identity of 'artist', is substantial.

National and local policymakers should, therefore, ensure that the partnerships of mental health professionals, artists and researchers are more adequately resourced, properly

sustained, and informed by evaluation methodologies and frameworks that could explore the long-term benefits and wellbeing outcomes of those for whom innovative forms of intervention have proved life-changing.

The lack of published evidence identified in this review should not blur the policy need. In one sense understanding has not greatly advanced in the field in the last decade, in that the dearth of large-scale RCT-based studies continues; as Bungay and Clift (2010) showed, "extensive searches of databases such as Medline and Cinahl found little published empirical research that focuses specifically" (p. 279) upon AoP (Arts on Prescription) schemes. They argued persuasively, though, that "qualitative methodologies are most appropriate to capture the experiences of participants" (p. 280) on such schemes, and noted the value of and drew upon the findings of project reports and evaluations in the 'grey' literature. The findings of our systematic review echo and reaffirm Bungay and Clift's important observations, and that in itself is an important finding concerning the state of research in the sphere of the visual arts and mental health. Our findings do demonstrate, though, an accumulating evidence base on *subjective* wellbeing, and its expressed dimensions as illustrated in both published studies and grey literature. Also, in answering the second research question, we provide guidance on 'what works' wellbeing for the populations concerned. Bungay and Clift stated with confidence that available evidence indicated "that participation in creative activities with others promotes well-being and social inclusion" but that "the mechanisms involved are as yet uncertain" (2010, p. 280). In identifying the importance of safe-space and havens for interventions, the value of non-stigmatising settings, and the importance of collaborative facilitation of programmes and sessions, this review brings a greater degree of certainty to the question of the mechanics of implementation.

Subjective wellbeing outcomes and benefits of engagement with the visual arts can change the everyday lives and the life-chances of people who have been trapped by their condition in an increasingly claustrophobic and constrained world. Partnership funding across the governmental, private and voluntary sectors should be secured to support more extensive research, focusing in particular upon the long-term benefits of interventions and the sustainability of interventions and outcomes. Employing established research techniques combined with appropriate theory, and using standardised measures of wellbeing, such research would take further our understanding of the capacity of the visual arts to contribute to the enhancement of wellbeing for adults coping with mental health issues. Such work could also inform an increased understanding of the precise contexts and mechanisms of intervention effectiveness.

In the practical and professional sphere, forms of collaborative provision should be encouraged, so that teams of specialists can deliver interventions that are appropriately monitored, and rigorously and consistently evaluated. Training for wellbeing evaluation that captures the outcomes of the interventions and disseminates the findings across the interconnected political, practitioner, professional and research spheres would be invaluable. Both academic and non-academic dissemination would be essential in order to achieve the most effective research, policy and practice-based outcomes.

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Appendix 1: Summary of quantitative wellbeing measures used (published studies)

Measurement Tool	Outcome Measure	Description	Scoring/interpretation	Validity/reliability
The Quality of Life Enjoyment and Satisfaction Questionnaire–Short Form (Q-LES-Q-SF; Endicott et al., 1993)	Quality of Life, enjoyment, satisfaction.	This test is a 14-item self-report instrument used to assess overall quality of life, enjoyment, and satisfaction in specific life domains.	Responses are scored on a 5-point scale ("very poor" to "very good)," and scores indicate the individual's level of self-assessed quality of life, ranging from "significantly above average" to "significantly below average." The scoring of the Q-LES-Q-SF involves summing only the first 14 items to yield a raw total score. The last two items are not included in the total score but are standalone items. The raw total score ranges from 14 to 70. The raw total score is transformed into a percentage maximum possible score. A score of 70 = 100% and 14 = 0%.	The internal consistency coefficients at screening, baseline, and endpoint were high (0.87, 0.90, 0.89, respectively) as was the 1-week test-retest intraclass correlation coefficient of reliability (0.78). The correlations of the PQ-LES-Q total score with concurrent measures of severity of illness were in the moderate range (e.g., Global Clinical Impression of Severity, −0.40; Children's Global Assessment Scale, 0.36; Children's Depression Rating Scale total score, −0.45), as were the correlations with measures of change between baseline and endpoint (e.g., Clinical Global Impression of Severity, −0.34; Children's Global Assessment Scale, 0.33; Children's Depression Rating Scale total score, −0.45).
The Alcohol Craving Questionnaire (ACQ-NOW; Singleton et al., 1995)	1. urges and desires to drink alcohol. 2. intent to use alcohol. 3. anticipation of positive outcome 4.anticipation of relief from withdrawal and negative outcome 5. lack of control over use	The ACQ-NOW is a 47-item self-administered, multidimensional state measure of acute alcohol craving adapted from the Cocaine Craving Questionnaire of Tiffany et al. As such, it measures 4 dimensions (subscales) of alcohol craving labelled Emotionality, Purposefulness, Compulsivity, and	7-point Likert-type scale ranging from "*Strongly disagree*" to "*Strongly agree.*"	Items were administered to 219 subjects who had used alcohol at least once in the last 30 days (Singleton et al., 1995). Following procedures in Tiffany et al. (1993), responses (with reverse-keyed items inverted) were subjected to separate exploratory factor analyses using principle-axis extraction for factor determination with squared multiple correlations as communality estimates. Both SAS and SPSS FACTOR procedures were used for these analyses. The number of factors extracted from each questionnaire was determined on the basis of three criteria: eigenvalues greater than I, the results of scree tests, and the clarity of

Measurement Tool	Outcome Measure	Description	Scoring/interpretation	Validity/reliability
		Expectancy.		the simple structure. Given that the factors within each questionnaire were likely to be intercorrelated, the factors were rotated to simple structure using oblique procedures and principal components analyses. These procedures yielded four factors with eigenvalues of 18.62, 3.73, 2.03, and 1.42 accounting for 41.4%, 8.3%, 4.5%, and 3.1%, respectively, of the common factor variance. Subscales for the first-order factors were estimated from the assignment of unit weights (0 or I) to items on the basis of loadings (correlations) derived from the reference vector structure matrix. Only items with factor loadings exceeding .30 on both procedures were retained.
The Posttraumatic Stress Disorder Checklist Civilian Version (PCLC; Weathers et al., 1991)	Screening individuals for PTSD.	The PCL is a 17-item self-report measure reflecting DSM-IV symptoms of PTSD. The PCL-C (civilian) asks about symptoms in relation to generic "stressful experiences" and can be used with any population. This version simplifies assessment based on multiple traumas because symptom endorsements are not attributed to a specific event.	A total symptom severity score (range = 17-85) can be obtained by summing the scores from each of the 17 items that have response options ranging from 1 "Not at all" to 5 "Extremely". Scoring: 17-29: Little to no PTSD symptoms. 28-29: Some PTSD symptoms. 30–44: Moderate to Moderately High severity of PTSD symptoms. 45-85: High Severity of PTSD	The PCL-C demonstrated good internal consistency and retest reliability. Compared with alternative measures of PTSD, the PCL-C showed favourable patterns of convergent and discriminant validity (Conybeare et al. 2012). Evidence suggests that a 5-10 point change is reliable (i.e., not due to chance) and a 10-20 point change is clinically meaningful (Monson et al., 2008). Therefore, we recommend using 5 points as a minimum threshold for determining whether an individual has responded to treatment and 10 points as a minimum threshold for determining whether the improvement is clinically meaningful.

Measurement Tool	Outcome Measure	Description	Scoring/interpretation	Validity/reliability
			symptoms.	
The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977).	Depressive symptoms	The CES-D scale is a short self-report scale designed to measure depressive symptomatology in the general population. The items of the scale are symptoms associated with depression which have been used in previously validated longer scales.	Possible range of scores is 0 to 60, with the higher scores indicating the presence of more symptomatology.	It was found to have very high internal consistency and adequate test- retest repeatability. Validity was established by pat terns of correlations with other self-report measures, by correlations with clinical ratings of depression, and by relationships with other variables which support its construct validity. Reliability, validity, and factor structure were similar across a wide variety of demographic characteristics in the general population samples tested (Radloff, 1977).
The Beck Depression Inventory, Second Version (BDI-II; Beck, Steer, and Brown, 1996).	Depression (presence and degree. NOT a diagnostic instrument)	21-question multiple-choice self-report inventory for adolescents and adults. Evaluates 21 symptoms of depression (15 on emotions, 4 on behavioural changes, 6 on somatic symptoms). The 21 items cover sadness, pessimism, past failure, self-dislike, self-criticism, suicidal thoughts or wishes, crying, agitation, loss of interest, indecisiveness, worthlessness, loss of energy, changes in sleeping patterns, irritability, changes in appetite, difficulty concentrating, tiredness or fatigue, and	0-9 not depressed 10-18 mild-moderate depression 19-29 moderate-severe depression 30-63 severe depression	Beck reviewed 11 studies and the BDI was capable of discriminating between groups that contrasted in level of depression. Beck's original paper reported an internal consistency studies demonstrated a correlation coefficient of .86 for the test items, and the Spearman- Brown correlation for the reliability of the BDI yielded a coefficient of .93. Criticisms; BDI-IA only addresses six out of the nine DSM-III criteria for depression, self-reported (reporting bias), questionnaire therefore the way administered could affect outcome e.g. social desirability. If pt has a physical illness the physical symptoms such as fatigue may score higher but not reflect depression.

Measurement Tool	Outcome Measure	Description	Scoring/interpretation	Validity/reliability
		loss of interest in sex. Time to Administer: 5-10 minutes		
The Spiritual Meaning Scale (SMS; Mascaro, Rosen, and Morey, 2004).	Life meaning	A single scale, 14-item self-report inventory that measures the extent to which a person believes that life, or some force of which life is a function, has a purpose, will, or way in which individuals participate, independent of religious orientation.	Items rated on a 5-point scale ranging from I totally disagree to I totally agree.	Subjected to factor analysis with a population of undergraduates: SMS's items loaded on one major factor, with items loading on that factor between .46 and .70 (Mascaro et al., 2004). The 14 SMS items had a coefficient alpha of 0.89.
The Pennebaker Inventory of Limbic Languidness (PILL; Pennebaker, 1982).	Physical symptoms and sensations	54-item scale that assesses the frequency of common physical symptoms and sensations.	The overall score on the PILL is obtained by summing the total number of items for which the individual endorsed experiencing the symptom at least once every month. Items include physical symptoms such as runny or congested nose, chills, headaches, fever, and nausea (Epstein, 2005). Higher scores are associated with poorer health.	Cronbach alphas range from 0.88 to 0.91 and 2-month retest reliability ranges from 0.79 to 0.83.
The Karolinska Exhaustion disorder scale (KEDS; Besèr et al., 2014)	Exhaustion	9 item self-rating scale: Questions about concentration, memory, physical fatigue, endurance, recovery, sleep, hypersensitivity to sensory input, experience	KEDS consists of nine items with a scale range of 0-54. Higher scores mean higher level of exhaustion.	Reliability was satisfactory and confirmatory factor analysis revealed that ED, depression and anxiety are best regarded as different phenomena.

Measurement Tool	Outcome Measure	Description	Scoring/interpretation	Validity/reliability
		requirements, irritation and anger.		
Sense of Coherence (SOC; Antonovsky, 1979).	Coherence	The full SOC scale includes 29 items that relate to various aspects of an individual's life. Three theoretical components have been proposed: (1) comprehensibility-11 items (2) manageability-10 items; and (3) meaningfulness - 8 items.	The range of possible scores is 29 to 203; a higher value indicates a higher level of sense of coherence.	In 26 studies using SOC-29 the Cronbach alpha measure of internal consistency has ranged from 0.82 to 0.95. The alphas of 16 studies using SOC-13 range from 0.74 to 0.91
Toronto Alexithymia Scale (TAS; Bagby et al., 1994).	Alexithymia	The TAS is a 20-item instrument that is one of the most commonly used measures of alexithymia. Alexithymia refers to people who have trouble identifying and describing emotions and who tend to minimise emotional experience and focus attention externally	Items are rated using a 5-point Likert scale whereby 1 = strongly disagree and 5 = strongly agree. The total alexithymia score is the sum of responses to all 20 items, while the score for each subscale factor is the sum of the responses to that subscale. The TAS-20 uses cut-off scoring: equal to or less than 51 = non-alexithymia, equal to or greater than 61 = alexithymia. Scores of 52 to 60 = possible alexithymia.	Demonstrates good internal consistency (Cronbach's alpha = .81) and test-retest reliability (.77, $p<.01$). Validity: Research using the TAS-20 demonstrates adequate levels of convergent and concurrent validity. The 3 factor structure was found to be theoretically congruent with the alexithymia construct. In addition, it has been found to be stable and replicable across clinical and nonclinical populations.
Self-rated health scale (SRH)	Single measure of current overall health	Single item scale, measuring self reported health at the time of questioning.	Likert scale 1-5 (excellent to poor). A higher score indicates poorer health.	Studies show that the reliability of self-rated health is good and that it is a valid measure of current health (Lundberg and Manderbacka, 1996).

Appendix 2: Table of excluded studies with reasons for exclusion

Authors	Year	Title	Reason for Exclusion
Abbotts, J; Spence, W.	2013	Art and wellbeing in a deprived Scottish community	**Population**
Adams-Price C.E., Steinman B.A.	2007	Crafts and generative expression: A qualitative study of the meaning of creativity in women who make jewellery in midlife	**Population**
Ali K, Gammidge T, Waller D.	2014	Fight like a ferret: a novel approach of using art therapy to reduce anxiety in stroke patients undergoing hospital rehabilitation.	**Population**
Allain G.	2011	An art-based healing process: The Aurukun creative livelihoods project at the Wik and Kugu Arts and Craft Centre	**Outcome**
Arroyo, C; Fowler, N	2013	Before and after: A mother and infant painting group	**Intervention**
Ashman J	2016	Growing Healing One Garden at a Time.	**Population**
Barley E., Robinson S., Sikorski J.	2012	Primary-care based participatory rehabilitation: Users' views of a horticultural and arts project	**Intervention**
Beesley K., White J.H., Alston M.K., Sweetapple A.L., Pollack M.	2011	Art after stroke: The qualitative experience of community dwelling stroke survivors in a group art programme	**Population**
Berna G., Ott L., Nandrino J.-L.	2014	Effects of emotion regulation difficulties on the tonic and phasic cardiac autonomic response	**Population**
Brady C., Moss H., Kelly B.D.	2017	A fuller picture: Evaluating an art therapy programme in a multidisciplinary mental health service	**Comparator**
Brown D.K., Barton J.L., Gladwell V.F.	2013	Viewing nature scenes positively affects recovery of autonomic function following acute-mental stress	**Population**
Burns J.M., Webb M., Durkin L.A., Hickie I.B.	2010	Reach out central: A serious game designed to engage young men to improve mental health and wellbeing	**Intervention**
Cabassa L.J., Parcesepe A., Nicasio A., Baxter E., Tsemberis S., Lewis-Fernández R.	2013	Health and wellness photovoice project: Engaging consumers with serious mental illness in health care interventions	**Outcome**
Chung B., Jones L., Jones A., Corbett C.E., Booker T., Wells K.B., Collins B.	2009	Using community arts events to enhance collective efficacy and community engagement to address depression in an African American community	**Population**

Authors	Year	Title	Reason for Exclusion
Crawford M.J., Killaspy H., Barnes T.R.E., Barrett B., Byford S., Clayton K., Dinsmore J., Floyd S., Hoadley A., Johnson T., Kalaitzaki E., King M., Leurent B., Maratos A., O'Neill F.A., Osborn D.P., Patterson S., Soteriou T., Tyrer P., Waller D.	2012	Group art therapy as an adjunctive treatment for people with schizophrenia: Multicentre pragmatic randomised trial	**Intervention**
Crone D.M., O'Connell E.E., Tyson P.J., Clark-Stone F., Opher S., James D.V.B.	2013	'Art Lift' intervention to improve mental well-being: An observational study from UK general practice	**Population**
Crone D.M., O'Connell E.E., Tyson P.J., Clark-Stone F., Opher S., James D.V.B.	2012	It helps me make sense of the world: The role of an art intervention for promoting health and wellbeing in primary care-perspectives of patients, health professionals and artists	**Population**
Czamanski-Cohen J., Sarid O., Huss E., Ifergane A., Niego L., Cwikel J.	2014	CB-ART-The use of a hybrid cognitive behavioral and art based protocol for treating pain and symptoms accompanying coping with chronic illness	**Intervention**
Ellis-Hill, C; Gracey, F; Thomas, S; Lamont-Robinson, C; Thomas, PW; Marques, EMR; Grant, M; Nunn, S; Cant, RPI; Galvin, KT; Reynolds, F; Jenkinson, DF	2015	HeART of Stroke (HoS)', a community-based Arts for Health group intervention to support self-confidence and psychological well-being following a stroke: protocol for a randomised controlled feasibility study	**Study Design**
Eren N., Öğünç N.E., Keser V., Bikmaz S., Şahin D., Saydam B.	2014	Psychosocial, symptomatic and diagnostic changes with long-term psychodynamic art psychotherapy for personality disorders	**Intervention**
Eriksson T., Westerberg Y., Jonsson H.	2011	Experiences of women with stress-related ill health in a therapeutic gardening program	**Intervention**
Fildes D., Cass Y., Wallner F., Owen A.	2010	Shedding light on men: The Building Healthy Men Project	**Population**
Gonzalez M.T., Hartig T., Patil G.G., Martinsen E.W., Kirkevold M.	2011	A prospective study of existential issues in therapeutic horticulture for clinical depression	**Intervention**

Authors	Year	Title	Reason for Exclusion
Gorini A., Riva G.	2008	The potential of Virtual Reality as anxiety management tool: A randomized controlled study in a sample of patients affected by generalized anxiety disorder	**Study Design**
Herrero, MR	2011	This is not a game	**Study Design**
Hunt L., Nikopoulou-Smyrni P., Reynolds F.	2014	"It gave me something big in my life to wonder and think about which took over the space ⋯ and not MS": Managing well-being in multiple sclerosis through art-making	**Population**
Ingeberg M.H., Wikstrøm B.-M., Berg A.	2012	The essential dialogue: A Norwegian study of art communication in mental health care	**Population**
Jensen A., Stickley T., Edgley A.	2016	The perspectives of people who use mental health services engaging with arts and cultural activities	**Unavailable from BL - Embargoed**
Jones M., Kimberlee R., Deave T., Evans S.	2013	The role of community centre-based arts, leisure and social activities in promoting adult well-being and healthy lifestyles	**Population**
Joyce J., Warren A.	2016	A Case Study Exploring the Influence of a Gardening Therapy Group on Well-Being	**Intervention**
Kam M.C.Y., Siu A.M.H.	2010	Evaluation of a horticultural activity programme for persons with psychiatric illness	**Intervention**
Karpavičiūtė S., Macijauskienė J.	2016	The impact of arts activity on nursing staff well-being: An intervention in the workplace	**Population**
Kelaher M., Dunt D., Berman N., Curry S., Joubert L., Johnson V.	2014	Evaluating the health impacts of participation in Australian community arts groups	**Population**
Kenning, G	2015	Fiddling with Threads: Craft-based Textile Activities and Positive Well-being	**Population**
Ketch, RA; Rubin, RT; Baker, MR; Sones, AC; Ames, D	2015	Art appreciation for veterans with severe mental illness in a VA Psychosocial Rehabilitation and Recovery Center	**Outcome**
Kim	2013	A randomized, controlled study of the effects of art therapy on older Korean-Americans' healthy aging	**Population**
Kim M.K., Kang S.D.	2013	Effects of art therapy using color on purpose in life in patients with stroke and their caregivers	**Population**
Kunin-Batson, A; Steele, J; Mertens, A; Neglia, JP	2016	A randomized controlled pilot trial of a Web-based resource to improve cancer knowledge in adolescent and young adult survivors of childhood cancer	**Population**

Authors	Year	Title	Reason for Exclusion
Lal S., Ungar M., Leggo C., Malla A., Frankish J., Suto M.J.	2013	Well-being and engagement in valued activities: Experiences of young people with psychosis	**Intervention**
Laroque F., Sudres J.-L.	2015	Depressive patient in art-therapy: Benefits and practical recommendations [Le patient dépressif en art-thérapie: Évaluation des bénéfices et recommandations pratiques]	**Intervention**
Le,Diem H.;Cropley,David H.;Gleaves,David H.	2015	Examining the relationship between mental health, creative thought, and optimism	**Population**
Lengen C.	2015	The effects of colours, shapes and boundaries of landscapes on perception, emotion and mentalising processes promoting health and well-being	**Intervention**
Li X., Zhang Z., Gu M., Jiang D.-Y., Wang J., Lv Y.-M., Zhang Q.-X., Pan H.-T.	2012	Effects of plantscape colors on psycho-physiological responses of university students	**Population**
Liddle J.L.M., Parkinson L., Sibbritt D.W.	2012	Painting pictures and playing musical instruments: Change in participation and relationship to health in older women	**Population**
Lipe A.W., Ward K.C., Watson A.T., Manley K., Keen R., Kelly J., Clemmer J.	2012	The effects of an arts intervention program in a community mental health setting: A collaborative approach	**Intervention**
M. Clave-Brule, A. Mazloum, R.J. Park, E.J. Harbottle, and C.L. Birmingham	2009	Managing anxiety in eating disorders with knitting	**Comparator**
Margrove K.L., Pope J., Mark G.M.	2013	An exploration of artists' perspectives of participatory arts and health projects for people with mental health needs	**Population**
McEvoy P.M., Erceg-Hurn D.M., Saulsman L.M., Thibodeau M.A.	2015	Imagery enhancements increase the effectiveness of cognitive behavioural group therapy for social anxiety disorder: A benchmarking study	**Intervention**
McMillan I.A.	2011	Wellbeing through woodwork.	**Study design**
Mizock L., Russinova Z., Decastro S.	2015	Recovery narrative photovoice: Feasibility of a writing and photography intervention for serious mental illnesses	**Outcome**
Morton L., Ferguson M., Baty F.	2015	Improving wellbeing and self-efficacy by social prescription	**Intervention**
Müllersdorf M., Ivarsson A.B.	2012	Use of Creative Activities in Occupational Therapy Practice in Sweden	**Population**

Authors	Year	Title	Reason for Exclusion
Müllersdorf M., Ivarsson A.-B.	2016	What, Why, How – Creative Activities in Occupational Therapy Practice in Sweden	**Population**
Murphy F.C., Barnard P.J., Terry K.A.M., Carthery-Goulart M.T., Holmes E.A.	2011	SenseCam, imagery and bias in memory for wellbeing	**Population**
Nanda, U., Eisen, S., Zadeh, R., Owen, D.	2011	Effect of visual art on patient anxiety and agitation in a mental health facility and implications for the business case	**Outcome**
Potash J.S., Chan F., Ho A.H.Y., Wang X.L., Cheng C.	2015	A Model for Art Therapy–Based Supervision for End-of-Life Care Workers in Hong Kong	**Population**
Quinn N., Shulman A., Knifton L., Byrne P.	2011	The impact of a national mental health arts and film festival on stigma and recovery	**Population**
Regehr K.	2012	Pink Ribbon Pin-Ups: Photographing femininity after breast cancer	**Population**
Renton A., Phillips G., Daykin N., Yu G., Taylor K., Petticrew M.	2012	Think of your art-eries: Arts participation, behavioural cardiovascular risk factors and mental well-being in deprived communities in London	**Population**
Reynolds L., Broadbent E., Ellis C.J., Gamble G., Petrie K.J.	2007	Patients' drawings illustrate psychological and functional status in heart failure	**Population**
Rheingold, AA; Danielson, CK; Davidson, TM; Self-Brown, S; Resnick, H	2013	Video Intervention for Child and Caregiver Distress Related to the Child Sexual Abuse Medical Examination: A Randomized Controlled Pilot Study	**Population**
Rhind C., Mandy W., Treasure J., Tchanturia K.	2014	An exploratory study of evoked facial affect in adolescent females with anorexia nervosa	**Population**
Riley, J., Corkhill, B., Morris, C.,	2013	The benefits of knitting for personal and social wellbeing in adulthood: findings from an international survey	**Population**
Roghanchi M., Mohamad A.R., Mey S.C., Momeni K.M., Golmohamadian M.	2013	The effect of integrating rational emotive behavior therapy and art therapy on self-esteem and resilience	**Intervention**
Rollins J.	2011	Arousing curiosity: When hospital art transcends	**Study Design**
Rose T., Shdaimah C., de Tablan D., Sharpe T.L.	2016	Exploring wellbeing and agency among urban youth through photovoice	**Population**
Sahlin E., Ahlborg G., Jr., Tenenbaum A.,	2015	Using Nature-Based rehabilitation to restart a stalled process of rehabilitation	**Intervention**

Authors	Year	Title	Reason for Exclusion
Grahn P.		in individuals with Stress-Related mental illness	
Schiltz, L; Ciccarello, A; Ricci-Boyer, L	2015	Being ashamed of oneself. Interest of arts psychotherapies for the rehabilitation of people in social exclusion	**Intervention**
Singer S., Götze H., Buttstädt M., Geue K., Momenghalibaf A., Böhler U.	2010	The effects of an art education program on competencies, coping, and well-being in outpatients with cancer-Results of a prospective feasibility study	**Population**
Singh B.	2011	The therapeutic effects of art making in patients with cancer	**Population**
Skingley A., De'Ath S., Napleton L.	2016	Evaluation of edna: Arts and dance for older people	**Population**
Solway, R; Thompson, L; Camic, PM; Chatterjee, HJ	2015	Museum object handling groups in older adult mental health inpatient care	**Population**
Speed, Lesley	2010	In the Community: A Handshake and a Smile: Video-Making, Young People and Mental Health	**Outcome**
Stańko M.	2008	Art therapy as a professional method of help for cancer patients [Arteterapia jako metoda profesjonalnej pomocy chorym na nowotwory]	**Study Design**
Stickley T., Hui A., Souter G., Mills D.	2016	A community arts programme for older people: An evaluation	**Population**
Taylor K., Fletcher I., Lobban F.	2015	Exploring the links between the phenomenology of creativity and bipolar disorder	**Intervention**
Teti M., Pichon L., Kabel A., Farnan R., Binson D.	2013	Taking pictures to take control: Photovoice as a tool to facilitate empowerment among poor and racial/ethnic minority women with HIV	**Population**
Thyme K.E., Sundin E.C., Wiberg B., Öster I., Åström S., Lindh J.	2009	Individual brief art therapy can be helpful for women with breast cancer: A randomized controlled clinical study	**population**
Trevisani F, Casadio R, Romagnoli F, Zamagni MP, Francesconi C, Tromellini A, Di Micoli A, Frigerio M, Farinelli G, Bernardi M	2010	Art in the hospital: its impact on the feelings and emotional state of patients admitted to an internal medicine unit.	**Population**
Van Den Berg A.E., Custers M.H.G.	2011	Gardening promotes neuroendocrine and affective restoration from stress	**Intervention**

Authors	Year	Title	Reason for Exclusion
van den Berg AE, van Winsum-Westra M, de Vries S, van Dillen SM	2010	Allotment gardening and health: a comparative survey among allotment gardeners and their neighbours without an allotment.	**Intervention**
Wang, XX; Rodiek, S; Wu, CZ; Chen, Y; Li, YX	2016	Stress recovery and restorative effects of viewing different urban park scenes in Shanghai, China	**Population**
Warber S.L., Dehudy A.A., Bialko M.F., Marselle M.R., Irvine K.N.	2015	Addressing "nature-deficit disorder": A mixed methods pilot study of young adults attending a wilderness camp	**Population**
Ward Thompson C., Aspinall P., Roe J., Robertson L., Miller D.	2016	Mitigating stress and supporting health in deprived urban communities: The importance of green space and the social environment	**Population**
Watson M., Douglas F.	2012	It's making us look disgusting ... and it makes me feel like a mink ... it makes me feel depressed!: Using photovoice to help 'see' and understand the perspectives of disadvantaged young people about the neighbourhood determinants of their mental well-being	**Population**
Webber, Jo; Hinds, Joe; Camic, Paul M.	2015	The well-being of allotment gardeners: A mixed methodological study	**Population**
Weimann H., Rylander L., Albin M., Skärbäck E., Grahn P., Östergren P.-O., Björk J.	2015	Effects of changing exposure to neighbourhood greenness on general and mental health: A longitudinal study	**Population**
Weinstein N., Hodgins H.S., Ryan R.M.	2010	Autonomy and control in dyads: Effects on interaction quality and joint creative performance	**Population**
Wilson, C; Kent, L	2016	A qualitative study of 2Create: A mental health service user-led art group	**Population**
Windhorst E., Williams A.	2015	"It's like a different world": Natural places, post-secondary students, and mental health	**Population**
Wood, CJ; Pretty, J; Griffin, M	2016	A case-control study of the health and well-being benefits of allotment gardening	**Intervention**
Yang, C.	2016	Instagram Use, Loneliness, and Social Comparison Orientation: Interact and Browse on Social Media, but Don't Compare	**Population**

Reasons for Exclusion:

- **Population** - Does not include the population of interest. i.e. 15-64 years old participants, worldwide, with a mental health condition, excluding paid professionals.
- **Outcome** - Does not include outcomes of interest i.e. subjective wellbeing measured as an outcome measure using a recognised measure/method (note if there is also relevant data for health economic component - cost, cost-utility, cost-effectiveness, cost-benefit and cost-consequence analyses).
- **Intervention** - Does not include interventions of interest i.e. interventions focused on visual arts. We will exclude evidence relating to paid professional artists and clinical procedures such as surgery, medical tests and diagnostics.
- **Study design** – Is not a study design of interest i.e. primary study with empirical data of wellbeing outcomes and processes by which wellbeing outcomes are achieved. Quantitative, qualitative or mixed methods. Published between 2007-2017.
- **Systematic review** – Systematic/Evidence reviews are excluded.
- **Comparator** – does not use a comparator (i.e. no visual arts, usual routine).

Appendix 3: Data extraction form

Title, Author, year	
Study objectives	
Study design	
Method of allocation to study group	
Outcomes and measures used (relevant to review) (Include scale(s) used and time-points)	
Intervention (brief description of the intervention used)	
Details of analysis (Include type of analysis i.e. quantitative/qualitative/mixed,and method and/or process of analysis e.g. thematic analysis/statistical analysis, any subgroup analysis and any methods used in the treatment of missing data)	
Participants included (at baseline and follow up in <u>each group</u>) (Source/recruitment, eligible and selected, number, age restrictions, exclusions, gender)	
Intervention(s) and comparison group(s) (Type, content, intervener, duration, method, mode or timing of delivery)	
Results (Key numerical results including proportions experiencing relevant outcomes in each group, means, medians, standard deviations, ranges and effect sizes with precision estimates e.g. confidence intervals/ p values whether or not significant [if P values are not reported this should be stated]. For qualitative data what categories/themes were found, results drawn by authors and evidence provided. Identify any inadequately reported missing data	
Protected characteristics (Methods and findings that relate to protected characteristics [age, sex, gender reassignment, sexual orientation, disability, race, religion, pregnancy/maternity, marriage/civil partnerships] and income and/or socio-economic status.	
Limitations identified	
Review conclusions (for each comparison made)	
Conflicts of interest and sources of funding	
Ethical procedures reported	
Grade/CERQual Rating	

GRADE and CERQual for judging certainty / quality of evidence

Quantitative: Grade

Type of evidence	Randomized trial = high Observational study = low Any other evidence = very low
Decrease grade if **(Each quality criteria can reduce the quality by one or, if very serious, by two levels.)**	• Serious or very serious limitation to study quality (e.g. Important inconsistency; major uncertainty about directness; imprecise or sparse data; high probability of reporting bias
Increase grade if	• Strong evidence of association—significant relative risk of > 2 (< 0.5) based on consistent evidence from two or more observational studies, with no plausible confounders (+1) • Very strong evidence of association—significant relative risk of > 5 (< 0.2) based on direct evidence with no major threats to validity (+2) • Evidence of a dose response gradient (+1) • All plausible confounders would have reduced the effect (+1)
Grade Rating / Range	High quality evidence Moderate quality evidence Low quality evidence Very low quality evidence

Qualitative: CERQual

Increase confidence if	• Study is well designed with few limitations • Evidence applicable to context (perspective or population, phenomenon of interest, setting) specified in objectives • Findings/conclusions supported by evidence and provide convincing explanation for patterns found • Data supporting findings is rich and good quality
Decrease confidence if (Each quality criteria can reduce the quality by one or, if very serious, by two levels)	• Serious or very serious limitations in design or conduct of the study • Evidence is not relevant to the study objectives • Findings/conclusions are not supported by the evidence • Data is poor quality and inadequate to support findings
CERqual Confidence Rating / Range	**High confidence** It is highly likely that the review finding is a reasonable representation of the phenomenon of interest **Moderate confidence** It is likely that the review finding is a reasonable representation of the phenomenon of interest **Low confidence** It is possible that the review finding is a reasonable representation of the phenomenon of interest **Very low confidence** It is not clear whether the review finding is a reasonable representation of the phenomenon of interest.

Appendix 4: Grey literature data extraction tool

Part 1. Project details

Author details
Project aims
Project partners
Commissioner(s) and funding sources
Type of arts or sport intervention
Project description
Target population
Project costs

Part 2: Evaluation details

Evaluation aims and objectives
Conducting the evaluation
Type of evaluation and evaluation design
Evaluation budget
Data collection procedures
Sampling, selection and recruitment of participants
Evaluation timeline
Ethics and consent
Data analysis
Key findings
Findings from process evaluation

Appendix 5: Grey literature search strategies

To ensure that our searching methods were rigorous, the research team and What Works Centre for Wellbeing (WWW) completed searches for grey literature in addition to the database searches for published academic material. The following methods were used to identify appropriate grey literature:

1. The WWW sent out a 'call for evidence' welcoming relevant research evaluations and reports from colleagues working within the sector. The request for evidence, whilst open to all, was specifically targeted at experts and organisations (e.g. Mind, Birkbeck College, Cool Tan Arts) known to be active in this field of enquiry. The call was originally open for 1-month, but owing to a very-low response rate, the call was promoted for a further month and advertised extensively via social media (e.g. Twitter, Facebook and LinkedIn) and colleague networks. Daily reminders of the evidence call were sent out throughout mental health awareness week.

2. Web searches were conducted by screening the first 100 'hits' when searching using key words in a 'Google' search. The core key words used were: 'visual arts, mental health and wellbeing'. We also searched separately with the addition of the terms 'intervention' and 'adults'. This search strategy did not identify grey literature included in the final review.

3. Through contacts within our networks, we have also submitted a blog piece as part of this systematic review work-package. Molly Mathieson, founder and chief executive of the New Note Orchestra, based in Brighton, East Sussex, has written the blog piece for this review. The New Note Orchestra is a performance-led music group created for people who are in recovery from alcohol or substance abuse.