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Group-based active artistic interventions for adults with primary anxiety and depression: a systematic review

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ABSTRACT

Objectives This systematic review examined the potential benefit of all group-based performing arts interventions for primary anxiety and/or depression.

Setting Scholarly literature from any country or countries globally.

Data sources Three key bibliographic databases, Google Scholar and relevant citation chasing.

Primary and secondary outcome measures Depression and/or anxiety symptom severity, well-being, quality of life, functional communication or social participation.

Results Database searches returned a total of 63 678 records, of which 56 059 remained following dededuplication. From these database searches, a total of 153 records proceeded to full-text screening. These were supplemented by 18 additional unique full-text screening records from Google Scholar searches and citation chasing (12% of total). From a total of 171 records at the full-text screening stage, 12 publications (7%) were eligible for inclusion in this systematic review, each reporting on a separate study. Published from 2004 to 2021, these studies involved a total of 669 participants with anxiety and/or depression from nine countries and covered five broad artistic modalities: dance, music therapy, art therapy, martial arts and theatre. Dance was the most studied artistic modality (five studies), while there were three studies on art therapy, two on music therapy and one each on martial arts and theatre. The evidence was clearest for a benefit of arts therapies on depression and/or anxiety symptoms.

Conclusions This systematic review addresses all group-based active arts interventions in a focused population of primary anxiety and/or depression. The evidence suggests that the arts may be a useful therapeutic medium in this population. However, a substantial limitation of the evidence base is the lack of studies directly comparing different artistic modalities. Moreover, not all artistic modalities were assessed for all outcome domains. Therefore, it is not currently possible to determine which artistic modalities are most beneficial for which specific outcomes.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The study used systematic review methods to minimise subjectivity and bias.
⇒ This was, to our knowledge, the first systematic review to address a full range of artistic interventions in the context of a standardised outcome set in people with primary anxiety and/or depression.
⇒ Two reviewers independently conducted all screening, data extraction and risk of bias assessment, but only one suitably experienced reviewer was available to design and run the searches.
⇒ The systematic review could only consider English language publications for practical reasons.
⇒ Meta-analysis was not feasible due to clinical and methodological heterogeneity between studies—including population characteristics, study settings, interventions and comparators, and outcome measures—given the relatively small number of eligible studies.

INTRODUCTION

Anxiety and depression

Anxiety and depression are common[1 2] and related[3 4] mental health conditions. Pain has been identified as a potential mediating factor between chronic disease status and depression,[5] although psychological factors associated with chronicity may also be important.[6 7] Given the arts have typically been studied in the context of chronic health conditions, it is important to note this role for pain, and see how effective the arts are in primary anxiety and/or depression, where pain is unlikely to play such a role. Anxiety and depression are associated with increased disability, diminished well-being and increased use of health services, although people with these conditions may face particular challenges accessing health services.[8] It is important to note that the relationship between anxiety and depression and service use is complex and varies depending on the health system and symptom severity. Depression is also associated with increased mortality risk.[9]

Treatments for anxiety and depression

Treatment options for anxiety and depression have predominantly focused on two broad

approaches: pharmacological and psychological. The dominant approach in recent years within the psychological sphere has been cognitive–behavioural therapy (CBT) which is a problem-based talking therapy approach with a distinctive focus on the present exploring the links between thoughts, emotions and behaviour.[10] CBT has been shown to be effective for depression[11 12] and anxiety[13] and remains part of established practice.

Current pharmacological therapy for anxiety and depression is focused on selective serotonin uptake inhibitors, which operate by increasing the extracellular level of the neurotransmitter serotonin by limiting its reuptake into the presynaptic cell.[14] A meta-analysis has suggested that medication may be better for depression and CBT for anxiety,[15] although this remains controversial. This is because of different findings in different individual studies in the cited meta-analysis. Therefore, additional supplementary therapeutic options including lifestyle interventions have been considered. For example, in a population of people in long-term care, Atchison *et al*[16] found evidence of a benefit of a range of non-pharmacological treatments on anxiety levels.

The arts as a therapeutic modality for anxiety and depression

In recent years, there has been increased interest in the arts as a therapeutic modality across a range of indications, including Parkinson's disease,[17] in which mental health is an important issue. Participation in the arts has been shown to offer various psychological, social and health benefits, both intrinsic and instrumental, in the general population as well as many health conditions.[18] The social dynamic[19] of participatory[20] group-based[21 22] arts interventions may make them particularly relevant to conditions such as anxiety and depression, which have long-established psychological[23] and sociological[24] components.

There have been a large number of previous reviews on aspects of the arts in anxiety and depression (online supplemental file 1). These have been generally supportive of a benefit of the arts. However, systematic reviews to date have had three major limitations: (1) a focus only on a subset of potential arts interventions, (2) a lack of focus in the intervention criteria with both participatory and receptive arts therapies being included and (3) a lack of focus in population criteria. For example, Tang *et al*[25] included studies addressing populations as diverse as heart failure, end-stage kidney disease, paediatric brain tumour and dementia, as well as studies addressing depression and/or anxiety levels in general populations in which not all participants had depression and/or anxiety at baseline.

AIMS

We offer a systematic review investigating the clinical effectiveness of a full range of active group-based arts interventions in adults with primary anxiety and/or depression (ie, not secondary to another medical condition) to provide a comparative perspective not offered by existing reviews. The key rationale for the present review was as follows. No previous systematic review had provided all of the following in one review:

- Consideration of a full range of artistic interventions across all artistic modalities (eg, performing arts, visual arts) to provide a broad perspective.
- A focus solely on participatory, as opposed to receptive, arts interventions, in recognition of their different nature and the potential greater benefit of participatory interventions on psychological outcomes.[20]
- A focus solely on group based, as opposed to, individual arts interventions, in recognition of their different nature and the potential greater benefit of group interventions, due to the social component.[21 22]
- A focus solely on primary anxiety and/or depression, not secondary to another chronic medical condition. While anxiety and depression frequently do accompany other medical conditions, anxiety and depression in these contexts may present differently than primary anxiety and/or depression, due to biological mechanisms associated with the other condition (eg, in Parkinson's disease some of the pathways involved in the disease process are shared with the pathways involved in depression) and/or lived experiences associated with the other condition. Therefore, synthesising available evidence on primary anxiety and/or depression is of value.

METHODS

Design

A narrative systematic review method was used following PRISMA 2020 guidelines.[26] The review was not preregistered. A standardised protocol with no amendments was followed and is available from the authors. MSB was the lead reviewer. Proportionate second review was performed by RVN-H for 20% of records at each stage of the review process. There were few disagreements and where these arose, they were resolved by discussion. Additional detail and justification for the methods can be found in online supplemental file 2.

Data sources

Searches were conducted in February 2022 using three major scholarly databases MEDLINE (Ovid), EMBASE (Ovid), Web of Science (Clarivate Analytics). The search strategy (box 1) was developed in MEDLINE and translated for all other databases. Forward and backward citation chasing was conducted on all articles that underwent full-text screening in addition to relevant review articles. Supplementary searches were also conducted on Google Scholar. Full search details for each database are provided in online supplemental file 3.

Inclusion criteria

Records were screened initially by title and abstract and potentially relevant full texts were screened according to the following criteria:

Box 1 MEDLINE search strategy

"(exp Depression/ OR depression.mp OR exp Anxiety/ OR anxiety.mp OR exp Anxiety Disorders/ OR anxiety disorder*.mp OR exp Mental Health/ OR mental health.mp) AND (exp Art Therapy/ OR art* therap*.mp OR creative art*.mp OR exp Art/ OR performing art*.mp OR exp Music Therapy/ or music therap*.mp OR exp Dancing/ OR dance.mp OR dancing.mp OR dance therap*.mp OR exp Singing/ OR singing.mp OR exp Drama/ OR drama.mp OR theat*.mp OR exp Tai Ji/ OR tai ji.mp OR tai chi.mp OR taiji.mp OR exp Martial Arts/ OR martial art*.mp literary art*.mp OR exp Writing/ OR write.mp OR writing.mp OR exp Poetry as Topic/ OR poet*.mp OR graphic art*.mp OR painting.mp OR plastic art*.mp OR exp Sculpture/ OR sculpture*.mp OR decorative art*.mp OR fine art*.mp)"

- Peer-reviewed journal articles published in English with any date of publication. Alternatively a conference abstract since 2020 inclusive if no full-text publication available for the study. This time limit for conferences was introduced to focus on recent conference abstracts for which full-text papers are less likely to have had time to enter the published literature.
- Primary original randomised or non-randomised trials or quantitative observational studies (not n-of-one study or single case report).
- Studied adult human participants with anxiety and/or depression, by clinical diagnosis, recognised diagnostic criteria or self-report.
- Assessed an artistic intervention—performing, martial, literary, graphic, plastic and decorative arts were all eligible—administered in group form with active participation.
- Assessed clinical effectiveness (depression/anxiety symptom severity, well-being, quality of life, functional communication or social participation) of the arts intervention.

Data extraction

The following information was extracted for each included study: (1) bibliographic details, (2) country, (3) study profile, (4) participant profile, (5) inclusion criteria, (6) outcomes, (7) intervention content, (8) session leader experience and professional background, (9) intervention location, (10) intervention duration, (11) frequency of intervention, (12) nature of control, (13) content of control, (14) control session leader experience and professional background, (15) control location, 16) frequency of control and (17) study results for all of the following outcomes for which data were reported: depression/anxiety symptom severity, well-being, quality of life, functional communication and social participation.

Risk of bias assessment

Specialist Unit for Review Evidence (SURE) checklists[27] were used to systematically appraise risk of bias at the study level, using the appropriate checklist tailored to the methodology of each study. The use of SURE for risk of bias assessment in the context of arts interventions follows the precedent of two prior reviews by different review teams in different patient populations.[17 28]

Data synthesis

In light of substantial methodological and clinical heterogeneity, including recruitment strategies, country-level factors, study setting (such as community vs inpatient), population characteristics, the nature of the artistic intervention, the nature of the control arm and the assessment tools used for study outcome, thematic narrative synthesis was preferable to meta-analysis. The synthesis was structured first by outcome domain and second within each outcome domain by artistic modality.

Patient and public involvement

This is a systematic review of a broad range of arts interventions. There was no financial resource to recruit a sufficiently wide panel of public advisors to cover this range adequately. Therefore, patients were not involved in the conduct of the study. As this was a systematic review, there was no recruitment. MSB will respond to reputable media requests to disseminate findings more broadly.

RESULTS

Search results

Database searches returned a total of 63 678 records (MEDLINE 7361; EMBASE 25 271; Web of Science 31 046), of which 56 059 remained following the application of Endnote's dededuplication algorithms. From these database searches, a total of 153 records proceeded to full-text screening. These were supplemented by 18 additional unique full-text screening records from Google Scholar searches and citation chasing (12% of total). From a total of 171 records at the full-text screening stage, 12 records (12 studies) met the criteria for the current review (7%, online supplemental file 4) and 159 were excluded (online supplemental file 5). A PRISMA flow chart is provided (figure 1). Studies came from a total of nine countries (Australia, Brazil, China,

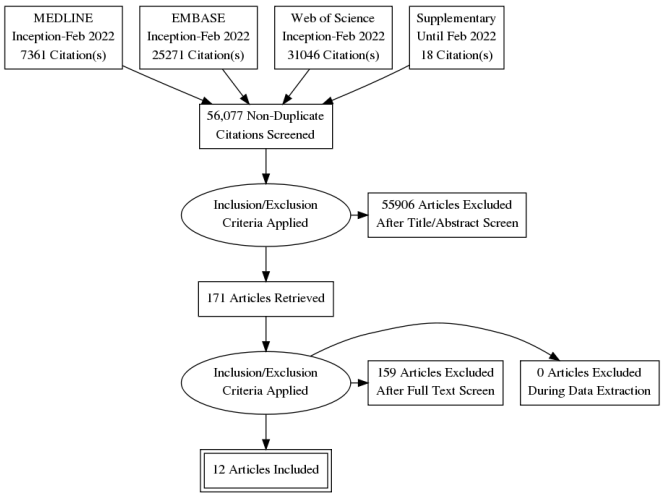

Figure 1 PRISMA flow chart.

Finland, Italy, Mexico, Taiwan, Thailand and the USA) and used a variety of quantitative designs, six involving randomised group allocation (online supplemental file 6).[29–34] Studies were published from 2004 to 2022 and involved a total of 669 participants with anxiety and/or depression. The number of participants (across all arms) ranged from 14 to 200 per study (median sample size 32.5). Studies covered five broad artistic modalities: dance, music therapy, art therapy, martial arts and theatre (online supplemental file 7). The countries studied were diverse in terms of culture, political characteristics and health system factors. Methodological limitations were common (online supplemental file 8) and SURE analysis (online supplemental files 9 and 10) highlights that common limitations included sampling (methods and sample size), unbalanced baseline characteristics and the absence of control groups (online supplemental file 11) in some studies. Detailed study-level results are tabulated in online supplemental file 12. Studies are profiled by artistic modality in online supplemental file 13.

Anxiety and/or depression symptom severity

All studies assessed severity of anxiety and/or depression symptoms. Punkanen *et al*[35] noted that two concepts are closely related—indeed distinguishing between anxiety and depression is known to be a common issue with assessment tools.

Among the five studies focusing on dance as an artistic modality, two[35 36] assessed dance/movement therapy,[37] one[38] assessed a dance programme based on Latin rhythms, one[34] assessed Argentine tango and one[39] assessed line dancing. Two studies[35 39] had no control group, one study[34] was randomised and one study[36] explicitly stated that arm allocation was in accordance with patient choice. Anxiety was measured by the Hospital Anxiety and Depression Scale-Anxiety subscale[40] in one study,[35] depression was measured by the Beck Depression Inventory[41] in two studies,[35–38] the Beck Depression Inventory-II[42] in one study[36] and the Geriatric Depression Scale[43] in one study,[39] while three studies used combined anxiety and depression scales-one study[34] using the Depression, Anxiety and Stress Scale-21,[44] one study[35] used the overall Hospital Anxiety and Depression Scale[40] and the other[36] using the Symptoms Check List-90[45] and Clinical Outcomes in Routine Evaluation-Outcome Measure.[46] Relevant translated versions were used where appropriate, which was also the case for other combinations of intervention and outcome. Across each these five dance studies, the dance intervention was associated with a statistically significant improvement in depression and/or anxiety outcomes—depending on measures analysed—over and above any control arm where relevant to the study design. Pylvänäinen *et al*[36] provided nuanced detail that the effect occurred during the intervention period rather than during the follow-up period, suggesting that the effect was likely attributable to the intervention.

Among the three studies assessing art therapy, one study[33] specifically assessed clay art therapy, one study[47] assessed art therapy based on expressive therapy continuum and media dimension variables and the other[32] assessed art therapy comprising guided imagery, artistic output and verbal reflections. The control group was standard care in two studies[32 47] but a non-directive visual art intervention in one study,[33] while two studies[32 33] were randomised. Anxiety was assessed in one study[32] by the Beck Anxiety Inventory,[48] depression was assessed in two studies[32 47] by the Geriatric Depression Scale,[43] in one study[32] by the Beck Depression Inventory,[41] in one study[33] by the Beck Depression Inventory-II,[42] and by the Short Portable Mental Status Questionnaire[49] in one study.[47] Across each of the three art therapy studies, there was a statistically significant benefit in terms of anxiety and/or depression outcomes over and above the control arm.

The two studies addressing music therapy[29 30] were relatively comparable in their content and included song writing and instrumental improvisation. The control group was standard care in Chen *et al*,[30] while in Atiwannapat *et al*[29] there were two comparison groups—receptive music therapy and counselling. Both studies were randomised. Anxiety was assessed in one study[30] using the State and Trait Anxiety Inventory,[50] while depression was assessed in one study each by the Montgomery-Asberg Depression Rating Scale,[51] Thai Depression Inventory[52] and Beck Depression Inventory.[41] In both studies, depression and/or anxiety scores improved more in the music therapy group than in the primary control group. In the Atiwannapat *et al*[29] study, statistical significance was not reached. However, this appears an artefact of the design of the statistical analysis in which the comparison was made across three groups, active music therapy, receptive music therapy and counselling. Both music therapy treatments were handled as interventions in the study, whereas receptive music therapy is seen as a control in this review as it does not meet the inclusion criteria as an intervention. The benefit of active over receptive music therapy was consistent for the MADRS outcome, but the magnitude of effect was smaller than for the comparison between active music therapy and counselling.

The one study[31] that assessed martial arts, in the form of tai chi, was randomised, used a waiting-list control group, and assessed depression using the Centre for Epidemiological Studies Depression Scale.[53] The Chinese version of the outcome measure was used. Participants in the tai chi group improved on this outcome over the course of the intervention period, while waiting list controls deteriorated over the same time period.

The one study[54] that assessed theatrical interventions, in the form of improvised theatre, was a single arm pre–post study. Anxiety was assessed using the Generalised Anxiety Disorder 7-Item scale[55] and depression using the Patient Health Questionnaire-9.[56] Scores on both depression and anxiety outcomes improved significantly over the course of the theatrical intervention period, although the lack of a control arm is problematic for interpreting the effect.

Well-being

A total of three studies[33–35] assessed well-being. Pinniger *et al*[34] assessed Argentine tango dance in a randomised controlled trial against mindfulness meditation and a waiting list control. Satisfaction with life improved more in the tango group (d=0.36) than the meditation (d=0.09) group, whereas self-esteem improved more in the meditation group (d=0.35) than the tango (d=0.17) group. Punkanen *et al*[35] assessed dance/movement therapy in a single-arm pre–post design. Both these studies assessed well-being using the Satisfaction with Life Scale[57] and observed statistically significant benefits for this outcome for the dance intervention, in the case of Pinniger *et al*[34] over and above the control arm. Nan and Ho[33] assessed clay art therapy in a randomised controlled trial against non-directive visual art and assessed well-being using the Body–Mind–Spirit Well-Being Inventory.[58] This captures well-being from quite a different perspective than the Satisfaction with Life Scale,[57] taking a holistic view on well-being, incorporating spirituality. A significant benefit for clay art therapy over and above the control arm was found.

Quality of life

A total of two studies[29 54] assessed quality of life. Atiwannapat *et al*[29] compared active group music therapy with receptive music therapy and counselling, while Krueger *et al*[54] assessed improvised theatre in a pre–post single arm design. Atiwannapat *et al*[29] used the Short Form Health-Related Quality of Life survey (SF-36),[59] in the Thai version, while Krueger *et al*[54] used the NeuroQol,[60] which is designed specifically for use in populations with neurological conditions. There was an improvement in SF-36 scores in the Atiwannapat *et al*[29] study, but statistical significance was not reached due to the way the analysis was constructed, as discussed above. Neither was statistical significance reached for the improvement in NeuroQol over and above the control arm, which may reflect the limitations of using a tool designed for neurological conditions and not specifically validated in a primary anxiety and/or depression context.

Functional communication

No studies assessed any arts therapies in relation to functional communication outcomes.

Social participation

A total of four studies[30 33 35 47] assessed aspects of social participation. Punkanen *et al*[35] assessed dance/movement therapy in a pre–post single-arm study and used the Relationship Questionnaire[61] to examine adult attachment styles. Statistically significant improvements on parameters from this instrument were observed, noting the limitation of the lack of a control group. Chen *et al*[30] assessed music therapy in a randomised controlled trial against standard care and used the Texas Social Behaviour Inventory,[62] which examines social competence, but also draws on concepts of self-esteem, which was not an outcome measure in the current review. A statistically significant improvement was observed in favour of the music therapy arm over and above the control arm. Two art therapy studies examined aspects of social functioning. Comparing clay art therapy to non-directive art therapy in a randomised controlled trial, Nan and Ho[33] used the General Health Questionnaire,[63] which includes an assessment of the inability to carry out normal functions, as well as the appearance of new and distressing experiences, which was not an outcome measure in the current review. Meanwhile, comparing art therapy based on expressive therapy continuum and media dimension variables with standard daily care of the long-term care institutes in a quasi-experimental design, Ching-Teng *et al*[47] used the Barthel index[64] and Karnofsky scale[65] to assess activities of daily living and physical activity capability respectively. Ching-Teng *et al*[47] did not present follow-up scores for any social participation measures, precluding a conclusion as to the potential benefit of the art therapy intervention, as only baseline pre-intervention scores were reported. Nan and Ho[33] did, however, find evidence in favour of a benefit of the art therapy intervention over control on the General Health Questionnaire.[63]

Main methodological concerns

The main methodological concerns that were applicable to the body of evidence as a whole included a relatively low overall number of studies meeting the inclusion criteria for this review, small sample sizes (lower bound 14, median 32.5 participants per study in total across arms), the absence of control groups in one quarter (n=3) of the included studies, considerable variation in the sampling frame between studies (one study[10] assessed a prison population while one study[6] included only female participants), uneven distribution of baseline characteristics between arms in some studies, considerable variation in the frequency and duration of interventions, substantial variability in which outcome domains were assessed for which artistic modalities and which assessment tools were used (especially with regard to assessing depressive symptoms), as well as a focus on statistical rather than clinical significance. Detailed analysis of risk of bias and study quality can be found in online supplemental file 9, accompanied by detailed risk of bias tables in online supplemental files 10 and 11.

DISCUSSION

Summary

This systematic review indicates that group arts interventions using active participation can impact positively on outcomes for people with primary anxiety and/or depression. The evidence was generally consistent for a benefit across studies for most outcome domains, although methodological limitations should be taken into consideration. No studies addressed functional communication. There was no conclusive evidence of a benefit on quality of life in either of the two studies that addressed this outcome,

although this may reflect limitations of the outcome measure in the Krueger *et al*[54] study and the analytical approach in the Atiwannapat *et al*[29] study. No study offered an analysis stratified by level of severity of anxiety and/or depression. Studies in major depression were largely consistent in their findings with studies including a broader range of participants, but due to differences in study settings it is not possible to compare the magnitude of effect in these different subpopulations. The lower number of studies identified compared with the pharmaceutical and psychological treatment literature is due to the arts for health being an emerging, rather than well-established, treatment option.

Interpretation of findings

In common with a recent review of performing arts interventions in Parkinson's disease,[17] dance was the most studied artistic modality. This means that there is most evidence for dance-based interventions. However, this does not necessarily imply that dance is the most effective artistic medium for intervention, only that it has been the most popular medium for researchers to use. This popularity seems to transcend particular disease areas and may reflect cultural factors that make dance popular. However, it was notable that choir-based singing interventions did not feature in the evidence base in the present review in contrast to the review on Parkinson's disease.[17] The reasons for this have not been explored in the literature. Furthermore, as per in the Barnish and Barran[17] review in Parkinson's disease, there were no directly comparative studies across artistic modalities. This is likely to reflect siloed working practices with research terms working on a specific artistic modality rather than across modalities, which is important to resolve moving forwards. This limitation precludes an assessment of which artistic modality offers the most benefit.

The findings from the present review support those from previous reviews that also showed a benefit for arts therapies in a depressed and/or anxious population. Meta-analysis was not feasible due to clinical and methodological heterogeneity, so while the present review observed a consistent benefit of arts therapy interventions over control groups where applicable for most outcome measures, it was not possible to generate a pooled estimate of the magnitude of effect. The present review presents evidence in a more focused population of primary anxiety and/or depression. The findings are consistent with prior reviews that found a benefit of arts therapy in different populations with depression. These include Tang *et al*[25] in a population of diverse depression including depression secondary to other medical conditions as well as by Boehm *et al*[66] and Tang *et al*[67] of different arts interventions in a context of depression secondary to breast cancer. However, due to the inability to conduct meta-analysis, it was not possible to assess whether the magnitude of effect was greater or smaller in a primary compared with a secondary depression context.

Strengths and limitations of the review

This was, to our knowledge, the first systematic review to address a full range of artistic interventions in the context of a standardised outcome set in people with primary anxiety and/or depression. Two reviewers independently conducted all screening, data extraction and risk of bias assessment, but only one suitably experienced reviewer was available to design and run the searches. The systematic review could only consider English language publications for practical reasons. Meta-analysis was not feasible due to clinical and methodological heterogeneity between studies—including population characteristics, study settings, interventions and comparators, and outcome measures—given the relatively small number of eligible studies. Included studies exhibited many methodological issues—including a lack of direct head-to-head studies between different artistic modalities, which limits the current implications of the findings.

Research implications

Further research is needed with greater methodological rigour before firm conclusions can be drawn on which particular arts therapy modalities offer the greatest benefits for people with anxiety and/or depression and for which outcomes. More commonality of outcomes could facilitate meta-analysis. There is a particular need for studies comparing different artistic modalities, which could facilitate a network meta-analysis. Single-arm studies should be avoided, since in the absence of a control group, it is not possible to determine the extent to which any observed benefit is attributable to biases such as a placebo effect resulting from receiving attention from session leaders as opposed to an effect related to the intervention itself. The area of functional communication requires investigation. Furthermore, further primary research and evidence syntheses, such as realist reviews or meta-syntheses could consider the potential mechanisms for the beneficial impact of the arts for mental health, and potentially map these onto the Multi-Level Leisure Mechanisms Network.[68]

CONCLUSION

Here, we present a systematic review focusing on the potential benefit of group-based active arts therapy for people with primary anxiety and/or depression. This differs from previous reviews by including all artistic modalities, focusing specifically on active group-based interventions and focusing on people with primary anxiety and/or depression, rather than assessing anxiety and/or depression levels in a general population or assessing populations with anxiety and/or depression secondary to other medical conditions or health-related circumstances. The results of this review highlight the potential positive use of group dance, music therapy, art therapy, martial arts and theatre—with active participation for depression and/or anxiety symptom severity, well-being, quality of life, functional communication or

social participation in people with primary anxiety and/or depression. However, methodological limitations, in particular the lack of studies directly comparing different arts therapy modalities, preclude drawing definitive conclusions regarding which artistic modalities offer the most benefit in this population, and whether different artistic modalities offer the greatest benefit for different outcome domains, or whether this would be consistent across domains. No evidence was identified regarding the functional communication outcome domain.

Contributors The work was managed and directed by MSB, who had the initial idea for the work. MSB and RVN-H both contributed to the acquisition, reviewing and interpretation of data. The first draft of the manuscript was written by MSB. RVN-H revised the manuscript for important intellectual content. Both authors reviewed the final submission version of the manuscript and approved the submission. Both authors take appropriate responsibility for the work they undertook. Overall responsibility for the work rests with MSB. This work was presented as an oral abstract at the 2022 Society for Social Medicine and Population Health Annual Scientific Meeting, Exeter, UK.

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Disclaimer All views in this article are the authors' own, and not necessarily those of their institutions nor bodies that fund their other research projects.

Competing interests MSB and RVN-H are experienced recreational musicians and have been involved in promoting the arts to the public. MSB declares having received expenses but not payment for arts promotion activities.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement All data relevant to the study are included in the article or uploaded as online supplemental information. The presented work is a systematic review. All relevant information is provided in the manuscript and appendices. This includes the data extraction form completed with the data from all included studies as used in the narrative synthesis analysis. As no meta-analysis was conducted, there is no analytical code.

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