
Evidence Map of Art Therapy

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Prepared by:

Evidence Synthesis Program (ESP) Center
West Los Angeles VA Medical Center
Los Angeles, CA
Paul G. Shekelle, MD, PhD, Director

Authors:

Principal Investigators:

Isomi M. Miake-Lye, PhD
Paul G. Shekelle, MD, PhD

Co-Investigators:

Eric A. Apaydin, PhD
Selene S. Mak, MPH, PhD

Research Associates:

Meron M. Begashaw, MPH
Jessica M. Beroes-Severin, BS



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PREFACE

The VA Evidence Synthesis Program (ESP) was established in 2007 to provide timely and accurate syntheses of targeted healthcare topics of importance to clinicians, managers, and policymakers as they work to improve the health and healthcare of Veterans. These reports help:

- Develop clinical policies informed by evidence;
- Implement effective services to improve patient outcomes and to support VA clinical practice guidelines and performance measures; and
- Set the direction for future research to address gaps in clinical knowledge.

The program is comprised of 4 ESP Centers across the US and a Coordinating Center located in Portland, Oregon. Center Directors are VA clinicians and recognized leaders in the field of evidence synthesis with close ties to the AHRQ Evidence-based Practice Center Program and Cochrane Collaboration. The Coordinating Center was created to manage program operations, ensure methodological consistency and quality of products, and interface with stakeholders. To ensure responsiveness to the needs of decision-makers, the program is governed by a Steering Committee comprised of health system leadership and researchers. The program solicits nominations for review topics several times a year via the [program website](#).

Comments on this evidence report are welcome and can be sent to Nicole Floyd, Deputy Director, ESP Coordinating Center at Nicole.Floyd@va.gov.

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This topic was developed in response to a nomination by Donna Faraone, Field Implementation Team Lead and Music Therapist/Office of Patient Centered Care and Cultural Transformation, David Otto, National Program Director/Recreation Therapy Service (10P4RR), and Ben Kligler, National Director/Coordinating Center for Integrative Health, for the purpose of supporting decisions related to the use of arts and humanities to improve Veteran health in the VHA. The scope was further developed with input from the topic nominators (*ie*, Operational Partners), the ESP Coordinating Center, the review team, and the technical expert panel (TEP).

In determining the scope of the report and methodology at the outset of this report, the ESP consulted several technical and content experts. Broad expertise and perspectives were sought. Divergent and conflicting opinions are common and perceived as healthy scientific discourse that results in a thoughtful, relevant systematic review. Therefore, in the end, study questions, design, methodologic approaches, and/or conclusions do not necessarily represent the views of individual technical and content experts.

The authors gratefully acknowledge 3ie for the use of their evidence gap map platform, and Roberta Shanman, MLS, for her contribution to this project.

Operational Partners

Operational partners are system-level stakeholders who have requested the report to inform decision-making. They recommend Technical Expert Panel (TEP) participants; assure VA relevance; help develop and approve final project scope and timeframe for completion; provide feedback on draft report; and provide consultation on strategies for dissemination of the report to field and relevant groups.

Donna Faraone, MPA, CPHQ
Field Implementation Team Lead/Music Therapist
Office of Patient Centered Care and Cultural Transformation (10NE)

David Otto, MME, MT-BC
National Program Director, Recreation Therapy Service (10P4RR)
Rehabilitation and Prosthetic Services (10P4R)

Ben Kligler, MD, MPH
National Director, Coordinating Center for Integrative Health
Office of Patient Centered Care and Cultural Transformation (10NE)

Technical Expert Panel (TEP)

To ensure robust, scientifically relevant work, the TEP guides topic refinement; provides input on key questions and eligibility criteria, advising on substantive issues or possibly overlooked areas of research; assures VA relevance; and provides feedback on work in progress. TEP members are listed below:

Judy A. Rollins
Author, Artist, Researcher – Americans for the Arts
Walter Reed National Military Medical Center

Patricia M. Shaffer
Deputy Director of Research & Analysis
National Endowment for the Arts

Cyndi Wilson
Field Implementation Team Consultant and Arts and Humanities Community Engagement
Coordinator, Office of Patient Centered Care and Cultural Transformation
VA Western New York Healthcare System

Teresa Bush-Zurn
Field Implementation Team Consultant
Office of Patient Centered Care and Cultural Transformation

Peer Reviewers

The Coordinating Center sought input from external peer reviewers to review the draft report and provide feedback on the objectives, scope, methods used, perception of bias, and omitted evidence. Peer reviewers must disclose any relevant financial or non-financial conflicts of interest. Because of their unique clinical or content expertise, individuals with potential conflicts may be retained. The Coordinating Center and the ESP Center work to balance, manage, or mitigate any potential nonfinancial conflicts of interest identified.

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ABBREVIATIONS TABLE

CAT	Creative arts therapies
CCT	Chinese calligraphy therapy
CPI	Creative psychological interventions
DMT	Dance/movement therapy
DSM	Diagnostic and Statistical Manual of Mental Disorders
ESP	Evidence Synthesis Program
MBAT	Mindfulness-based art therapy
NOAH	National Organization for Arts in Health
PTSD	Posttraumatic stress disorder
QoL	Quality of life
RCT	Randomized control trials
TBI	Traumatic brain injury
TEP	Technical expert panel
3ie	International Initiative for Impact Evaluation

EVIDENCE REPORT

INTRODUCTION

Many Veterans desire complementary and integrative health or alternative medicine modalities, and art therapy is one such option. Given VA's desire to promote evidence-based practice, this evidence mapping project aims to help provide guidance to VA leadership about the distribution of evidence on art therapy to inform policy and future directions for art therapy in VA.

The National Organization for Arts in Health (NOAH) identifies 6 “distinct regulated health professions” within the Creative Arts Therapies (CAT), which have “a definition of the profession, a legally defensible scope of practice, educational competencies, standards of practice, code of ethics, and evidence-based research.”^{1,2} These include art therapy, dance/movement therapy, drama therapy, music therapy, poetry therapy, and psychodrama therapy. Therapists within these disciplines are credentialed in accordance with national and state regulations and standards. While arts can be used in other ways within health care and public health, programs that are not led by trained therapists are considered distinct from Creative Arts Therapies. The focus for this report is on 1 of these 6 disciplines: art therapy.

Various types of art therapy have been used in the treatment of a variety of conditions, including schizophrenia,³ depression,⁴ and stroke rehabilitation.⁵ Given the breadth of conditions to which art therapy has been applied, we conducted an evidence mapping process to determine the distribution of evidence available for various health conditions, identify different gaps in evidence, and inform future research priorities. An evidence map is an overview of a broad research field that describes the volume, nature, and characteristics of research in a particular field.⁶

OBJECTIVE

The objective of this mapping project was to provide a visual overview of the distribution of evidence for art therapy, as well as an accompanying narrative to help stakeholders interpret the state of evidence to inform policy and future directions for art therapy in VA.

METHODS

TOPIC DEVELOPMENT

This topic was developed in response to a nomination by Donna Faraone, Field Implementation Team Lead and Music Therapist/Office of Patient Centered Care and Cultural Transformation, David Otto, National Program Director/Recreation Therapy Service (10P4RR), and Ben Kligler, National Director/Coordinating Center for Integrative Health. Given the nominators' interest in an overview of a broad field, an evidence mapping methodology was determined to be most appropriate for their needs.

SEARCH STRATEGY

We conducted broad searches from database inception through May 5, 2018 using terms related to art therapy in 2 databases: PubMed and PsycINFO (see Appendix A for full search strategy). We conducted 2 searches specific to study design for randomized controlled trials and systematic reviews, as well as a third, more general search that did not specify a study design.

STUDY SELECTION

All citations were reviewed by 3 independent reviewers (IML, EAA, SSM). Any citation chosen by a single reviewer was advanced to abstract screening. Abstracts were then reviewed on the DistillerSR platform⁷ in duplicate by 2 independent reviewers (IML, EAA, SSM) using an abstract screening form (see Appendix B); discrepancies were resolved through group discussion. If all data elements were captured sufficiently for evidence map categorization, then no full-text review was necessary. For publications where abstract data were insufficient or unclear, data extraction and full-text review were completed by 2 reviewers and verified by a third (IML, EAA, SSM) on DistillerSR using a slightly modified version of the abstract screening form (see Appendix C). All systematic reviews were reviewed in full text. All discrepancies were resolved with full group discussion. In order to be included, references needed to meet the following criteria:

Population: Individuals diagnosed with any medical condition. Reports of art therapy with healthy populations, such as general community members or college students, were excluded since they were not diagnosed with any condition. Pediatric populations were also excluded.

Intervention: Art therapy led by an art therapist, or therapy that combined multiple treatment modalities. Explicit descriptions of therapy led by other professionals or lay people (*eg*, artists, occupational therapists, nurses, volunteers, or self-led) were excluded. When the therapist/facilitator was unclear or unstated we included the reference. If the art was used for diagnostic, rather than therapeutic, purposes we excluded the reference. Some systematic reviews discussed a variety of treatments, including various Creative Arts Therapies.¹ If art therapy was included in such a review we would include the review.

Comparator(s)/control: Any

Context: Any health care-related setting

Outcome(s): Patient health outcomes

Timing: Studies published in 1980 or later. Particularly for studies pertaining to mental health outcomes, looking at studies since 1980—when the Diagnostic and Statistical Manual of Mental Disorders (DSM) III was published⁸—allowed for more consistency when referencing mental health diagnoses. The context of mental health care in the United States has evolved to an extent to which older studies may no longer be comparable to newer research. For instance, the diagnosis of posttraumatic stress disorder (PTSD) did not exist prior to the DSM III, and outdated diagnoses such as hysteria were still in use.⁹

Study design: Randomized control trials (RCT), quantitative impact evaluations presenting health outcome data, or systematic reviews. Case reports, descriptive quantitative studies with no health outcome data, and references that did not include original data (*eg* commentaries, non-systematic reviews) were excluded.

DATA ABSTRACTION

During abstract screening, basic data elements were collected from abstracts when possible, including the study design, intervention, and population (see Appendix B). If all data elements were captured sufficiently for evidence map categorization, then no full-text review was necessary. For publications where abstract data were insufficient or unclear, data extraction and full-text review were completed by 2 reviewers and verified by a third (IML, EAA, SMM) using a slightly modified version of the abstract screening form (see Appendix C). All systematic reviews were subject to full-text data abstraction, in order to capture the number of included studies and the main findings of each review.

Each systematic review was rated as low, medium, or high confidence, using the 3ie system.¹⁰ Per 3ie's description: "High, Medium and Low Confidence refers to confidence in conclusions about effects. It indicates the overall rating given to a systematic review based on a careful appraisal of the methods applied in a systematic review, using a standardised checklist." See Appendix D for the checklist used.

DATA SYNTHESIS

Our evidence mapping process resulted in a visual depiction of the evidence for art therapy, an online interactive map, as well as an accompanying narrative with ancillary figures and tables.

Evidence Map

The visual depiction uses a bubble plot format to display information on 4 dimensions: x-axis, y-axis, bubble color, and bubble size. This allowed us to provide 4 types of information about each included publication, as follows:

Treatment modality (y-axis): We included studies that employed either art therapy or a mixture/combination of art therapy modalities.

Health condition studied (x-axis): We grouped publications into categories of health conditions that were studied as described in study selection, above. The categories on the x-axis include: Alzheimer's/dementia, PTSD, mood disorders, cancer/palliation, schizophrenia/psychosis, other psychiatric health conditions, and other non-psychiatric health conditions.

Study design (bubble color): Each bubble is either gray, green, red, or orange. Any individual study, either an RCT or other type of impact evaluation, is included in the gray bubble for the particular health condition/treatment modality combination. Systematic reviews that are rated high confidence are in green, medium confidence in red, and low confidence in orange for their assigned health condition/treatment modality combination.

Number of publications (bubble size): Each bubble's size is directly proportional to the number of publications included in that study design within a specific health condition/treatment modality combination.

The evidence map figure also allows the reader to visualize gaps in the literature base, where there is no or little evidence for particular health conditions or treatment modalities.

In addition to producing the print version of the evidence map, we also used the data from our evidence mapping process to develop an online, interactive map. This map is running on the 3ie evidence gap map platform developed by the International Initiative for Impact Evaluation, 3ie.

Narrative Synthesis

The narrative synthesis expands upon the visual evidence map to provide more details from the included systematic reviews and additional synthesis from the mapping process. These include descriptions of the findings from systematic reviews, as well as a discussion of gaps and potential areas of future work.

PEER REVIEW

A draft version of the report was reviewed by technical experts and clinical leadership. Reviewer comments and our response are documented in Appendix E.

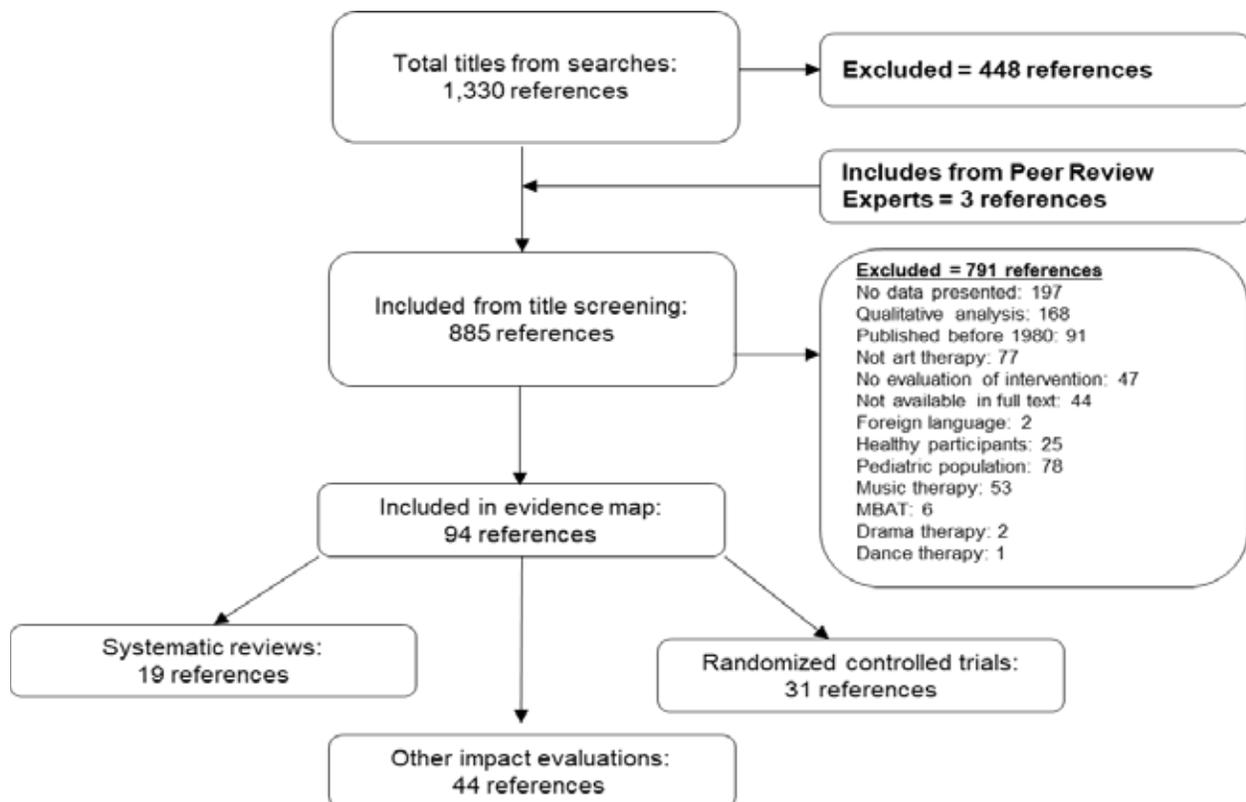
RESULTS

Below we describe the findings from our evidence mapping process. This includes a literature flow, followed by the visual depiction of our evidence map findings, and finally our narrative discussion of the findings.

LITERATURE FLOW

Our searches identified a total of 1,330 references, of which 448 references were excluded after screening titles. After including 3 additional references from peer review experts, 885 references were included for abstract screening. We reviewed these abstracts and collected basic descriptive information when possible. During this abstract screening process a total of 791 references were excluded for the following reasons: reference was for a non-systematic review, commentary, or other publication that did not present original study data (n=197); data presented were exclusively qualitative in nature, such as individual case reports (n=168); references were published before 1980 (n=91); the intervention did not meet our definition of art therapy, as described in the study selection section above (n=77); quantitative analysis was purely descriptive and no evaluative data were presented (n=47); unable to retrieve the full text of the publication to abstract necessary data (n=44); focus of the study was healthy participants (n=25); focus of the study was pediatric populations (n=78); Mindfulness-based Art Therapy (MBAT) (n=6); drama therapy (n=2); and dance therapy (n=1). In categorizing the 94 references included in the evidence map, we identified 19 systematic reviews, 31 RCTs, and 44 impact evaluations that were not RCTs. See Figure 1 for literature flow.

Figure 1. Literature Flow Chart



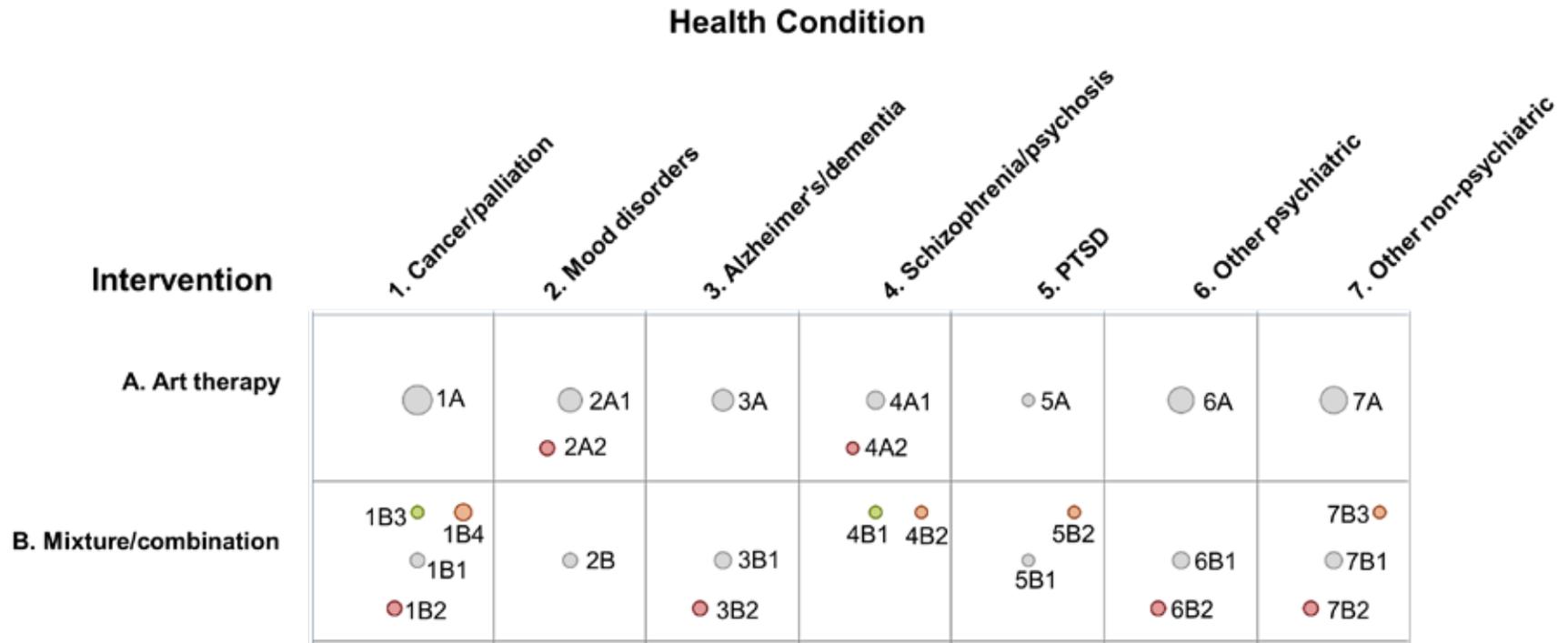
EVIDENCE MAP

Interactive Evidence Map on the 3ie Platform

We developed an evidence map for art therapy (see Figure 2), which allows us to visually depict the distribution of evidence available, describing the volume and general characteristics of research in this area. The evidence map displays each of the 94 included references, sorted by health condition and type of study. Systematic reviews are grouped in the green, red, or orange bubbles and impact evaluations, including RCTs and other quantitative evaluations, are grouped in the gray bubbles.

The evidence map in this report can be explored in an interactive way online at <http://egmopenaccess.3ieimpact.org/evidence-maps/art-therapy>. The online version allows users to view sort citations by different categorizations or to view citations attributed to specific bubbles. All data available in the interactive version of the map is also in this report; to see the citations for any specific bubble, refer to Appendix F. Each bubble has been assigned a coordinate in the report version of the evidence map for ease of identification. This coordinate is assigned a number, based on the corresponding health condition, and a letter, based on the corresponding treatment modality. In cases where there is more than 1 bubble in that map segment, the gray impact evaluation bubbles have a “1” appended to the end of this coordinate, the green systematic reviews bubbles (rated high confidence) have a “3” appended to the end of the coordinate, the orange systematic reviews bubbles (rated medium confidence) have a “4” appended to the end of the coordinate, and the red systematic reviews bubbles (rated low confidence) have a “2” appended to the end of this coordinate.

Figure 2. Evidence Map of Art Therapy Publications



This map is running on the 3ie evidence gap map platform (<http://egmopenaccess.3ieimpact.org/evidence-maps/art-therapy>) developed by the International Initiative for Impact Evaluation, 3ie. Each bubble has been assigned a color and a coordinate in the evidence map for ease of identification. This coordinate is assigned a number, based on the corresponding health condition, and a letter, based on the treatment modality (“A” for art therapy or “B” for mixture/combination). In cases where there is more than 1 bubble in that map segment, the gray impact evaluation bubbles have a “1” appended to the end of this coordinate, the green systematic reviews bubbles (rated high confidence) have a “3” appended to the end of the coordinate, the orange systematic reviews bubbles (rated medium confidence) have a “4” appended to the end of the coordinate, and the red systematic reviews bubbles (rated low confidence) have a “2” appended to the end of this coordinate.

Narrative Description of Evidence Map

Below we describe the evidence depicted in the evidence map by health condition. For lists of citations associated with any specific group, please see Appendix F. For the evidence table for systematic reviews, please see Appendix G.

Cancer/Palliation

There were 16 impact evaluations of art therapy related to cancer and/or palliation,¹¹⁻²⁶ of which 5 were RCTs.²²⁻²⁶ In addition, there were 2 impact evaluations that combined treatment modalities related to cancer/palliation: drawing and breathing exercises,²⁷ and music and poetry,²⁸ of which 1 was an RCT.²⁸

There were 6 systematic reviews related to cancer/palliation that included a mixture of art therapy and other therapy. In terms of confidence in conclusions about effects, 2 were rated low confidence,^{29,30} 3 were rated medium confidence,³¹⁻³³ and 1 was rated high confidence.³⁴ The latter study rated high confidence stated that although some studies “reported beneficial effects of art making on pain and [quality of life],” the evidence was weakened by “poor study quality ratings, heterogeneity in art-making interventions and outcome measures, interventions including non-art-making components, and few randomized controlled studies.”³⁴

Mood Disorders

There were 9 impact evaluations of art therapy related to mood disorders,³⁵⁻⁴³ of which 7 were RCTs.³⁷⁻⁴³ In addition, there were 2 impact evaluations related to mood disorders that combined art therapy with tai chi, mindfulness, and music reminiscence⁴⁴, and with music.⁴⁵

There were 2 systematic reviews related to mood disorders that included art therapy. Both were rated low confidence.^{4,46}

Alzheimer’s/Dementia

There were 7 impact evaluations of art therapy related to Alzheimer’s/dementia,⁴⁷⁻⁵³ of which 1 was an RCT.⁵³ In addition, there were 3 impact evaluations related to Alzheimer’s/dementia that combined art therapy with music, horticulture activity, memory training, and cognitive stimulation activities.⁵⁴ with music,⁵⁵ and with choral singing⁵⁶ of which 1 was an RCT.⁵⁶

There were 2 systematic reviews related to Alzheimer’s/dementia that included a mixture of art therapy and other treatment modality. Both were rated low confidence.^{57,58}

Schizophrenia/Psychosis

There were 4 impact evaluations of art therapy related to schizophrenia/psychosis, all of which were RCTs.⁵⁹⁻⁶²

There was 1 systematic review related to schizophrenia/psychosis and art therapy, and it was rated low confidence.³ There were 2 systematic reviews related to schizophrenia/psychosis that included a mixture of art therapy and other treatment modalities; 1 was rated medium confidence⁶³ and 1 was rated high confidence.⁶⁴ The review rated high confidence reported “a small but significant difference favoring art therapy group” for one of the mental state measures,

“no clear difference between groups” for measure of social functioning, and no significant effects of art therapy on quality of life.⁶⁴

PTSD

There was 1 impact evaluation of art therapy related to post traumatic stress disorder (PTSD).⁶⁵ In addition, there was 1 impact evaluation related to PTSD that combined art therapy with creative writing.⁶⁶ Both of these studies were RCTs.

There was 1 systematic review related to PTSD that included a mixture of art therapy and other treatment modality. It was rated medium confidence.⁶⁷

Other Psychiatric Health Conditions

There were 11 impact evaluations of art therapy related to other psychiatric health conditions,⁶⁸⁻⁷⁸ of which 5 were RCTs.⁷⁴⁻⁷⁸ In addition, there were 3 impact evaluations related to other psychiatric health conditions that combined art therapy with music, dance, psychodrama,⁷⁹ with grief therapy,⁸⁰ and with music and dance movement therapy,⁸¹ of which 1 was an RCT.⁸¹

There were 2 systematic reviews related to other psychiatric health conditions that included a mixture of art therapy and other therapy. Both were rated low confidence.^{82,83}

Other Non-Psychiatric Health Conditions

There were 13 impact evaluations of art therapy related to other non-psychiatric health conditions,^{5,84-95} of which 3 were RCTs.⁷⁶⁻⁷⁸ In addition, there were 3 impact evaluations related to non-psychiatric health conditions that combined art therapy with music and speech exercises,⁹⁶ with writing,⁹⁷ and with doll-making and discussion of films,⁹⁸ of which 1 was an RCT.⁹⁷

There were 3 systematic reviews related to other non-psychiatric health conditions that included a mixture of art therapy and other therapy. Two were rated low confidence,^{99,100} and 1 was rated medium confidence.¹⁰¹

Summary of Systematic Review Findings

Many of the systematic reviews we included in this evidence map focused on a specific health condition but looked broadly across art therapy modalities, with 16 of the 19 included reviews falling into the mixture/combination of modalities categorization. Many noted beneficial or positive effects on health, with none describing harmful effects. Of the 19 systematic reviews included in this map, 2 were appraised as having high confidence in their conclusions. One of these reviews focused on pain and quality of life for patients with cancer.³⁴ The second was a Cochrane review of art therapy for schizophrenia or schizophrenia-like illnesses.⁶⁴ In addition to these 2 reviews appraised as high confidence, 6 reviews were appraised as medium confidence and 11 were appraised as low confidence. Findings from systematic reviews of medium or low confidence are reported in the evidence tables (Appendix G).

While almost all the systematic reviews describe some evidence of positive effects on health outcomes, the evidence was often described as having low methodological quality, with 1 systematic review, looking broadly across all therapies for various psychiatric health conditions,

explicitly calling for future studies to “incorporate more details on the art therapy approaches.”¹⁰² Another systematic review focused on dementia that looked across Creative Arts Therapy modalities broadly found similar issues, stating that “this analysis reveals that systematically designed, documented, and evaluated [art therapy] studies are scarce. Information on research design, operational concepts, measurement tools, and methods of evaluation/analysis are vague, if provided.”⁵⁸

SUMMARY AND DISCUSSION

Many of the systematic reviews focused on a specific health condition but described a number of Creative Arts Therapies. The evidence within reviews was often described as having low methodological quality, lacking details about the therapy itself, the evaluation methods and measures. Despite these issues, preliminary positive effects were described in the majority of systematic reviews for a range of health conditions.

The purpose of this map was to create a navigable, interactive map that would demonstrate the breadth of research across this broad field and its related disciplines. Additional searches using terms specific to the individual disciplines could improve the representation of research for those disciplines within the map. Where high-quality, recent systematic reviews are available, certain areas may be well-represented by existing synthesis efforts; however, more detailed review would be required, which was out of scope for the current effort.

RESEARCH GAPS/FUTURE RESEARCH

This evidence mapping process was intended to describe the range of evidence on art therapy. When multiple systematic reviews within the evidence map overlap in coverage, cross-checking of these reviews may be necessary to determine if the same primary studies are being described, the extent of the overlap, and applicability of some or all findings in a review for a particular research or policy question. A future synthesis would be needed to see which studies were included in all reviews, and which were included in some but not others to determine a new finding inclusive of all potential evidence.

For future primary research studies, larger studies with rigorous designs that report their therapy approach and methodological details would be beneficial.

Relevance to VA Priority Topics

Certain high-priority areas within the VA were represented within the literature included in this evidence map and merit mention. We identified 2 impact evaluations^{65,66} and 1 medium-confidence systematic review⁶⁷ relevant to PTSD, which was included as a stand-alone category within the evidence map. Many of the studies in the mood disorders category related to the priority area of depression, with 1 of the 2 systematic reviews, which was low confidence, also focused on depression.⁴ Other priority areas such as trauma and traumatic brain injury (TBI) did not have enough literature to merit separate categories, and were grouped within the Other Psychiatric health conditions category. One study of PTSD and TBI addressed both these priority areas,⁷³ while 1 low-confidence systematic review focused on the priority area of trauma.⁸³ The category of cancer/palliation included studies and systematic reviews about cancer-related pain, which address the VA priority area of pain. Aside from 1 systematic review for patients with cancer-related pain,³⁴ none of the systematic reviews for VA priorities was appraised as high confidence. High-quality systematic reviews related to these various topic areas would help describe what is known about the effectiveness of art therapy as a treatment in these areas.

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APPENDIX A. SEARCH STRATEGY

ART THERAPY – SEARCH METHODOLOGY

DATABASE SEARCHED & TIME PERIOD COVERED:

PUBMED – from inception to 5/15/2018

LANGUAGE:

English

SEARCH STRATEGY #1:

"Art Therapy"[Mesh] OR art therap*

**SEARCH STRATEGY #2 (SUBSET OF SEARCH #1 TO IDENTIFY SYSTEMATIC
REVIEWS & META-ANALYSES)**

"Art Therapy"[Mesh] OR art therap*

AND

systematic review* OR meta-analy* OR meta analy* OR metaanaly* OR FILTERS: Meta-
Analysis; Systematic Reviews

SEARCH STRATEGY #3 (SUBSET OF SEARCH #1 TO IDENTIFY RCTS)

"Art Therapy"[Mesh] OR art therap*

AND

randomi* OR rct* OR FILTER: Randomized Controlled Trial

DATABASE SEARCHED & TIME PERIOD COVERED:

PsycINFO – 1/1/2000- 5/15/2018

LANGUAGE:

English

SEARCH STRATEGY #1:

DE "Art Therapy" OR "art therapy"

**NOTE – THE RESULTS OF THIS SEARCH WERE NOT DOWNLOADED DUE TO
THE LARGE NUMBER OF RESULTS**

SEARCH STRATEGY #2:

DATABASE SEARCHED & TIME PERIOD COVERED:

PsycINFO – 1/1/1990 - 5/15/2018

LANGUAGE:

English

SEARCH STRATEGY:

DE "Art Therapy" OR "art therapy")

AND

systematic review OR systematic reviews OR meta-analy* OR meta analy* OR metaanaly*

OR

DE "Art Therapy" OR "art therapy"

Narrow by Methodology: - meta analysis

Narrow by Methodology: - systematic review

SEARCH STRATEGY #3:

DATABASE SEARCHED & TIME PERIOD COVERED:

PsycINFO – 1/1/2000 - 5/15/2018

LANGUAGE:

English

SEARCH STRATEGY:

DE art therapy OR "art therapy"

AND

randomi* OR rct*

OR

DE "Art Therapy" OR "art therapy"

Narrow by Methodology: - clinical trial

APPENDIX B. ABSTRACT SCREENING FORM

1. Study design
 - a. Systematic review
 - b. RCT
 - c. Other impact evaluation/descriptive quantitative for health outcomes
 - d. Unclear
 - e. Descriptive qualitative EXCLUDE STOP FORM (including case reports)
 - f. Non-systematic review/commentary/editorial with no original data EXCLUDE STOP FORM
 - g. Background EXCLUDE STOP FORM (including descriptive quantitative without health outcomes data)
2. Interventions
 - a. Visual art therapy
 - b. Dance/movement therapy
 - c. Drama/psychodrama therapy
 - d. Music therapy
 - e. Poetry therapy
 - f. MBAT
 - g. Mixture/combination
 - h. Unclear – need full text
 - i. Other intervention/therapy/art as a diagnostic tool EXCLUDE STOP FORM
3. Population
 - a. Alzheimer's/dementia
 - b. PTSD
 - c. Substance abuse**
 - d. TBI**
 - e. Mood disorders (e.g. depression, anxiety)
 - f. Cancer/palliation
 - g. Other psychiatric, specify: _____
 - h. Other non-psychiatric (including rehab, stroke, etc.), specify: _____
 - i. Unclear – need full text
 - j. Pediatric EXCLUDE STOP FORM
 - k. Healthy people EXCLUDE STOP FORM
4. For Systematic Reviews Only: Number of included impact evaluations, write “FT” if need full text to complete: _____
5. VA/Veterans mentioned in abstract
 - a. Yes
 - b. Not mentioned

**These 2 populations do not appear in the report because no studies were found related to them. These were categories initially suggested by team members for categorizations.

APPENDIX C. FULL-TEXT SCREENING FORM

1. Study design
 - a. Systematic review
 - b. RCT
 - c. Other impact evaluation/descriptive quantitative for health outcomes
 - d. Descriptive qualitative EXCLUDE STOP FORM (including case reports)
 - e. Non-systematic review/commentary/editorial with no original data EXCLUDE STOP FORM
 - f. Background EXCLUDE STOP FORM (including descriptive quantitative without health outcomes data)
2. Interventions
 - a. Visual art therapy
 - b. Dance/movement therapy
 - c. Drama/psychodrama therapy
 - d. Music therapy
 - e. Poetry therapy
 - f. MBAT
 - g. Mixture/combination
 - h. Other art therapy – specify: _____
 - i. Other intervention/therapy/art as a diagnostic tool EXCLUDE STOP FORM (including activities or programs led by non-art therapists)
3. Population
 - a. Alzheimer's/dementia
 - b. PTSD
 - c. Substance abuse**
 - d. TBI**
 - e. Mood disorders (eg depression, anxiety)
 - f. Cancer/palliation
 - g. Schizophrenia/psychosis
 - h. Other psychiatric, specify: _____
 - i. Other non-psychiatric (including rehab, stroke, etc.), specify: _____
 - j. Pediatric EXCLUDE STOP FORM
 - k. Healthy people EXCLUDE STOP FORM
4. For Systematic Reviews Only: Number of included impact evaluations: _____
5. For Systematic Reviews Only: Short description of findings. Include strength of evidence and main findings.

**These 2 populations do not appear in the report because no studies were found related to them. These were categories initially suggested by team members for categorizations.

APPENDIX D. SYSTEMATIC REVIEW QUALITY APPRAISAL CHECKLIST

Checklist for making judgements about how much confidence to place in a systematic review of effects (adapted version of SURE checklist:)ⁱ

Assessed by:
Date:

Section A: Methods used to identify, include and critically appraise studies

<p>A.1 Were the criteria used for deciding which studies to include in the review reported?</p> <p>Did the authors specify:</p> <ul style="list-style-type: none"> <input type="radio"/> Types of studies <input type="radio"/> Participants/ settings/ population <input type="radio"/> Intervention(s) <input type="radio"/> Outcome(s) 	<ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> Partially <input type="radio"/> No <p><i>Coding guide - check the answers above</i> <i>YES: All four should be yes</i> <i>NO: All four should be no</i> <i>PARTIALLY: Any other</i></p>
<p><i>Comments (note important limitations or uncertainty)</i></p>	
<p>A.2 Was the search for evidence reasonably comprehensive?</p> <p>Were the following done:</p> <ul style="list-style-type: none"> <input type="radio"/> Language bias avoided (no restriction of inclusion based on language) <input type="radio"/> No restriction of inclusion based on publication status <input type="radio"/> Relevant databases searched (<u>Minimum criteria</u>: All reviews should search at least one source of grey literature such as Google; for health: Medline/ Pubmed + Cochrane Library; for social sciences IDEAS + at least one database of general social science literature and one subject specific database) <input type="radio"/> Reference lists in included articles checked <input type="radio"/> Authors/experts contacted 	<ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> Partially <input type="radio"/> No <input type="radio"/> Can't tell <p><i>Coding guide - check the answers above:</i> <i>YES: All five should be yes</i> <i>PARTIALLY: Relevant databases and reference lists are both reported</i> <i>NO: Any other</i></p>

<i>Comments (note important limitations or uncertainty)</i>	
<p>A.3 Does the review cover an appropriate time period? <i>Is the search period comprehensive enough that relevant literature is unlikely to be omitted?</i></p>	<ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> Can't tell (only use if no information about time period for search) <input type="radio"/> No <input type="radio"/> Unsure <p><i>Coding guide:</i> <i>YES: Generally this means searching the literature at least back to 1990</i> <i>NO: Generally if the search does not go back to 1990 CAN'T TELL: No information about time period for search</i></p> <p><i>Note: With reference to the above – there may be important reasons for adopting different dates for the search, e.g. depending on the intervention. If you think there are limitations with the timeframe adopted for the search which have not been noted and justified by the authors, you should code this item as a NO and specify your reason for doing so in the comment box below. Older reviews should not be downgraded, but the fact that the search was conducted some time ago should be noted in the quality assessment. Always report the time period for the search in the comment box.</i></p>
<i>Comments (note search period, any justification provided for the search period, or uncertainty)</i>	

<p>A.4 Was bias in the selection of articles avoided? Did the authors specify:</p> <ul style="list-style-type: none"> <input type="radio"/> Independent screening of full text by at least 2 reviewers <input type="radio"/> List of included studies provided <input type="radio"/> List of excluded studies provided 	<ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> Partially <input type="radio"/> No <p><i>Coding guide:</i> YES: All three should be yes, although reviews published in journals are unlikely to have a list of excluded studies (due to limits on word count) and the review should not be penalised for this. PARTIALLY: Independent screening and list of included studies provided are both reported NO: All other. If list of included studies provided, but the authors do not report whether or not the screening has been done by 2 reviewers review is downgraded to NO.</p>
<p><i>Comments (note important limitations or uncertainty):</i></p>	
<p>A.5 Did the authors use appropriate criteria to assess the quality and risk of bias in analysing the studies that are included?ⁱⁱ</p> <ul style="list-style-type: none"> <input type="radio"/> The criteria used for assessing the quality/ risk of bias were reported <input type="radio"/> A table or summary of the assessment of each included study for each criterion was reported <input type="radio"/> Sensible criteria were used that focus on the quality/ risk of bias (and not other qualities of the studies, such as precision or applicability/external validity). "Sensible" is defined as a recognised quality appraisal tool/ checklist, or similar tool which assesses bias in included studies. Please see footnotes for details of the main types of bias such a tool should assess. 	<ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> Partially <input type="radio"/> No <p><i>Coding guide:</i> YES: All three should be yes PARTIALLY: The first and third criteria should be reported. If the authors report the criteria for assessing risk of bias and report a summary of this assessment for each criterion, but the criteria may be only partially sensible (e.g. do not address all possible risks of bias, but do address some), we downgrade to PARTIALLY. NO: Any other</p>
<p><i>Comments (note important limitations or uncertainty)</i></p>	

Section B: Methods used to analyse the findings

<p>B.1 Were the characteristics and results of the included studies reliably reported?</p> <p>Was there:</p> <ul style="list-style-type: none"> <input type="radio"/> Independent data extraction by at least 2 reviewers <input type="radio"/> A table or summary of the characteristics of the participants, interventions and outcomes for the included studies <input type="radio"/> A table or summary of the results of all the included studies 	<ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Partially <input type="radio"/> Not applicable (e.g. no included studies) <p><i>Coding guide:</i> <i>YES: All three should be yes</i> <i>PARTIALLY: Criteria one and three are yes, but some information is lacking on second criteria.</i> <i>No: None of these are reported. If the review does not report whether data was independently extracted by 2 reviewers (possibly a reporting error), we downgrade to NO.</i> <i>NOT APPLICABLE: if no studies/no data</i></p>
<p><i>Comments (note important limitations or uncertainty)</i></p>	
<p>B.2 Are the methods used by the review authors to analyse the findings of the included studies clear, including methods for calculating effect sizes if applicable?</p>	<ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> Partially <input type="radio"/> No <input type="radio"/> Not applicable (e.g. no studies or no data) <p><i>Coding guide:</i> <i>YES: Methods used clearly reported. If it is clear that the authors use narrative synthesis, they don't need to say this explicitly.</i> <i>PARTIALLY: Some reporting on methods but lack of clarity</i> <i>NO: Nothing reported on methods</i> <i>NOT APPLICABLE: if no studies/no data</i></p>
<p><i>Comments (note important limitations or uncertainty)</i></p>	

<p>B.3 Did the review describe the extent of heterogeneity?</p> <ul style="list-style-type: none"> ○ Did the review ensure that included studies were similar enough that it made sense to combine them, sensibly divide the included studies into homogeneous groups, or sensibly conclude that it did not make sense to combine or group the included studies? ○ Did the review discuss the extent to which there were important differences in the results of the included studies? ○ If a meta-analysis was done, was the I², chi square test for heterogeneity or other appropriate statistic reported? If no statistical test was reported, is a qualitative justification made for the use of random effects? 	<ul style="list-style-type: none"> ○ Yes ○ Partially ○ No ○ Not applicable (e.g. no studies or no data) <p><i>Coding guide:</i> <i>YES: First two should be yes, and third category should be yes if applicable should be yes</i> <i>PARTIALLY: The first category is yes</i> <i>NO: Any other</i> <i>NOT APPLICABLE: if no studies/no data</i></p>
<p><i>Comments (note important limitations or uncertainty)</i></p>	

<p>B.4 Were the findings of the relevant studies combined (or not combined) appropriately relative to the primary question the review addresses and the available data?</p> <p>How was the data analysis done?</p> <ul style="list-style-type: none"> <input type="radio"/> Descriptive only <input type="radio"/> Vote counting based on direction of effect <input type="radio"/> Vote counting based on statistical significance <input type="radio"/> Description of range of effect sizes <input type="radio"/> Meta-analysis <input type="radio"/> Meta-regression <input type="radio"/> Other: specify <input type="radio"/> Not applicable (e.g. no studies or no data) <p>How were the studies weighted in the analysis?</p> <ul style="list-style-type: none"> <input type="radio"/> Equal weights (this is what is done when vote counting is used) <input type="radio"/> By quality or study design (this is rarely done) <input type="radio"/> Inverse variance (this is what is typically done in a meta-analysis) <input type="radio"/> Number of participants (sample size) <input type="radio"/> Other: specify <input type="radio"/> Not clear <input type="radio"/> Not applicable (e.g. no studies or no data) <p>Did the review address unit of analysis errors?</p> <ul style="list-style-type: none"> <input type="radio"/> Yes - took clustering into account in the analysis (e.g. used intra-cluster correlation coefficient) <input type="radio"/> No, but acknowledged problem of unit of analysis errors <input type="radio"/> No mention of issue <input type="radio"/> Not applicable - no clustered trials or studies included 	<ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> Partially <input type="radio"/> No <input type="radio"/> Not applicable (e.g. no studies or no data) <input type="radio"/> Can't tell <p><i>Coding guide:</i> <i>YES: If appropriate table, graph or metaanalysis AND appropriate weights AND unit of analysis errors addressed (if appropriate).</i> <i>PARTIALLY: If appropriate table, graph or meta-analysis AND appropriate weights AND unit of analysis errors not addressed (and should have been).</i> <i>NO: If narrative OR vote counting (where quantitative analyses would have been possible) OR inappropriate reporting of table, graph or meta-analyses.</i> <i>NOT APPLICABLE: if no studies/no data CAN'T TELL: if unsure (note reasons in comments below)</i></p>
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Comments (note important limitations or uncertainty)



<p>B. 5 Does the review report evidence appropriately?</p> <ul style="list-style-type: none"> ○ The review makes clear which evidence is subject to low risk of bias in assessing causality (attribution of outcomes to intervention), and which is likely to be biased, and does so appropriately ○ Where studies of differing risk of bias are included, results are reported and analysed separately by risk of bias status 	<ul style="list-style-type: none"> ○ Yes ○ No ○ Partially ○ Not applicable <p><i>Coding guide:</i> <i>YES: Both criteria should be fulfilled (where applicable)</i> <i>NO: Criteria not fulfilled</i> <i>PARTIALLY: Only one criteria fulfilled, or when there is limited reporting of quality appraisal (the latter applies only when inclusion criteria for study design are appropriate)</i> <i>NOT APPLICABLE: No included studies</i></p> <p><i>Note on reporting evidence and risk of bias: For reviews of effects of ‘large n’ interventions, experimental and quasiexperimental designs should be included (if available). For reviews of effects of ‘small n’ interventions, designs appropriate to attribute changes to the intervention should be included (e.g. pre-post with assessment of confounders)</i></p>
<p><i>Please specify included study designs and any other comments (note important limitations or uncertainty):</i></p>	

<p>B.6 Did the review examine the extent to which specific factors might explain differences in the results of the included studies?</p> <ul style="list-style-type: none"> <input type="radio"/> Were factors that the review authors considered as likely explanatory factors clearly described? <input type="radio"/> Was a sensible method used to explore the extent to which key factors explained heterogeneity? <input type="radio"/> Descriptive/textual <input type="radio"/> Graphical <input type="radio"/> Meta-analysis by sub-groups <input type="radio"/> Meta-regression <input type="radio"/> Other 	<ul style="list-style-type: none"> <input type="radio"/> Yes <input type="radio"/> Partially <input type="radio"/> No <input type="radio"/> Not applicable <p><i>Coding guide:</i> YES: Explanatory factors clearly described and appropriate methods used to explore heterogeneity PARTIALLY: Explanatory factors described but for meta-analyses, sub-group analysis or meta-regression not reported (when they should have been) NO: No description or analysis of likely explanatory factors NOT APPLICABLE: e.g. too few studies, no important differences in the results of the included studies, or the included studies were so dissimilar that it would not make sense to explore heterogeneity of the results</p>
<p><i>Comments (note important limitations or uncertainty)</i></p>	

Section C: Overall assessment of the reliability of the review

<p>C.1 Are there any other aspects of the review not mentioned before which lead you to question the results?</p>	<ul style="list-style-type: none"> <input type="radio"/> Additional methodological concerns – only one person reviewing <input type="radio"/> Robustness <input type="radio"/> Interpretation <input type="radio"/> Conflicts of interest (of the review authors or for included studies) <input type="radio"/> Other <input type="radio"/> No other quality issues identified
<p>C.2 Are there any mitigating factors which should be taken into account in determining the reviews reliability?</p>	<ul style="list-style-type: none"> <input type="radio"/> Limitations acknowledged <input type="radio"/> No strong policy conclusions drawn (including in abstract/ summary) <input type="radio"/> Any other factors
<p><i>Use comments to specify if relevant, to flag uncertainty or need for discussion</i></p>	

C.3 Based on the above assessments of the methods please provide a summary of the quality of the review

Strengths and limitations should be summarised above, based on what was noted in Sections A, B and C.

NOTES

- Adapted from Supporting the Use of Research Evidence (SURE) Collaboration. SURE checklist for making judgements about how much confidence to place in a systematic review. In: SURE guides for preparing and using policy briefs. www.evipnet.org/sure
- **Risk of bias** is the extent to which bias may be responsible for the findings of a study.

Bias is a systematic error or deviation from the truth in results or inferences. In studies of the effects of social, economic and health care interventions, the main types of bias arise from systematic differences in the groups that are compared (selection bias), the intervention that is provided, or exposure to other factors apart from the intervention of interest (performance bias/contamination), withdrawals or exclusions of people entered into a study (attrition bias) or how outcomes are assessed (detection bias) and reported (reporting bias). Reviews of social science studies may be particularly affected by reporting bias, where a biased subset of all the relevant data and analyses is presented.

Assessments of the risk of bias are sometimes also referred to as assessments of the **validity** or **quality** of a study.

Validity is the extent to which a result (of a measurement or study) is likely to be true.

Quality is a vague notion of the strength or validity of a study, often indicating the extent of control over bias.

APPENDIX E. PEER REVIEW COMMENTS AND RESPONSES

GENERAL COMMENTS AND RESPONSES

Comment	Response
"Art Therapy" implies a single discipline, i.e. visual arts therapy.	We have updated our use of this term, as well as other related terminology, throughout the report now that we have a better understanding of their appropriate use.
The introduction (beginning line 16) misstates the definitions of creative arts therapies, expressive arts therapies, and arts in health as provided in the NOAH white paper Arts, Health and Well-being in America (pg 7) by inaccurately condensing the content and removing "creative arts therapies" from the definition. The actual definition provided in the report is "Creative Arts Therapies (CATs) include the distinct regulated health professions of art therapy, dance/movement, therapy, drama therapy, music therapy, poetry therapy, and psychodrama therapy."	We updated quote per the suggestion to reflect the original intent of the NOAH report, which we had misread.
At line 22, the definition of Expressive Arts Therapy becomes muddled from excessive reduction of the definition provided in the White Paper (pg 7).	We have removed this description entirely as it is outside the scope of the current report.
Line 24 the definition of "arts in health" is not clear as written. Throughout this paragraph art therapy is used interchangeably with creative arts therapies, creating confusion. When referring to multiple arts disciplines, Creative Arts Therapies should be used. In a single discipline, Art Therapy, Music Therapy, Dance/Movement Therapy, etc is correct.	We have updated our use of this term, as well as other related terminology, throughout the report now that we have a better understanding of their appropriate use.
I do not the think the objectives are clearly defined. On Page 2 lines 9-14 of the Introduction, the aim is stated; however, it may be overlooked. Perhaps calling it out under a sub-heading "Intent" or Objective" may help. Note VA prefers the term 'well-being' over the term 'wellness'. The Objectives may also include implications for further research as I note in utilization comment that follows later. The scope and methods are well-defined.	We have added an "Objective" heading and replaced wellbeing with well-being throughout.
Abbreviations Table (Definitions/Terminology) – Missing terms	This table now includes all abbreviations used in the report.
There is missing literature on varying subtopics such as Traumatic Brain Injury; Post Traumatic Stress Disorder and music therapy interventions.	All suggested literature from peer reviewers and searches has been incorporated. We hope this ameliorates this issue and encourage suggestions of specific literature to aid in identifying and rectifying gaps.
Research questions for the evidence review were not all explicitly stated for high priority topics that are pertinent to Veterans and active service members such as evidence mapping on suicide prevention; depression; post-traumatic stress disorder; traumatic brain injuries;	We now address these high-priority topics in the results and concluding sections of our report.

<p>pain; opioid/substance abuse; sleep; trauma or complex trauma as examples.</p>	
<p>Yes - There are a number of articles that I was able to pull up in a quick search on some of the therapy types that the authors noted only had systematic reviews. I would think that most systematic reviews are conducted on studies that would have met the authors inclusion criteria. If a systematic review finds that there are (for example) 27 articles included, the authors should have looked over these 27 articles to identify ones that might meet the current study inclusion criteria. I think it is inaccurate to say that there are only systematic reviews available for some of the treatment modalities. I'm not sure that this is a bias, but I do think that it biases the results and conclusions drawn about where there is the most evidence.</p>	<p>Extracting included references from all the systematic reviews we incorporated into our evidence map would dramatically increase the work and scope of this project, something we were not able to do. Typically, evidence maps do not take this step, and many do not include literature outside of systematic reviews at all.⁶</p>
<p>The document includes consideration of wellness-based art therapy. As an approach to health and well-being, it is common for CATs to employ wellness-based concepts (including concepts from Positive Psychology) among populations presenting with a wide range of acuity. Wellness, as an approach across CATs, is common for prevention in healthy individuals or individuals (including veterans) transitioning in recovery from illness or injury back to the community. In thinking about the VHA's "whole health" approach to veteran care, the distinction of health and healthy in the context of wellness-based and integrative health philosophy brings into question the fidelity of processes to filter and screen studies. What is considered healthy and would a functioning veteran or service member, for example with a hidden injury such as an acute stress reaction, be considered healthy and possibly excluded from the search herein? Exclusion of studies in this review among community-based healthy populations (p. 3, line 41), which may include veterans, raises a concern that the defined population lacks adequate specificity to focus the search objectively and avoid bias.</p>	<p>The original scope of the review included a population of interest of adults with any medical condition. Therefore healthy individuals, which could include veterans, who are without a diagnosed condition undergoing treatment would be excluded from the review.</p>
<p>Yes - Berberian, M., Walker, M. S., & Kaimal, G. (2018). "Master My Demons:" Art therapy montage painting by active-duty military service members with traumatic brain injury and post-traumatic stress. <i>Medical Humanities</i>. Advance online publication. doi:10.1136/medhum-2018-011493 https://www.ncbi.nlm.nih.gov/pubmed/30077986 Kaimal, G., Jones, J. P., Dieterich-Hartwell, R., Acharya, B., & Wang, X. (in press). Evaluation of long- and short-term art therapy interventions in an integrative care setting for military service members with post-traumatic stress and traumatic brain injury. <i>Arts in Psychotherapy</i>. Doi: 10.1016/j.aip.2018.10.003 https://www.sciencedirect.com/science/article/pii/S0197455618301321 Kaimal G., Walker, M. S., Herres J., French, L. M., & DeGraba, T. J. (2018). Observational study of associations between visual imagery and measures of depression, anxiety and post-traumatic stress among active-duty military service members with traumatic brain injury at the Walter Reed National Military Medical Center. <i>BMJ Open</i>, 8, e021448. doi:10.1136/bmjopen-2017-021448 (Impact factor = 2.4) https://bmjopen.bmj.com/content/8/6/e021448 Bradt, J., Biondo, J., & Vaudreuil, R. (in press). Songs created by</p>	<p>We had not identified these in our searches, likely because they have been published so recently or are still in press. We now include the Kaimal, Jones, et al. reference in our evidence map. The study by Bradt and colleagues is of music therapy, which is no longer within the scope of our current mapping project. The others are included in our flow but were excluded because of their descriptive qualitative methodology.</p>



<p>military service members in music therapy: A Retrospective Analysis. The Arts in Psychotherapy: An International Journal.</p>	
<p>My one issue is that although this is a good scoping effort at the state of the literature to potentially guide future research, I thought we were hoping for more specific information to guide clinicians in how and where to use the various therapies in this domain. Maybe the literature is not mature enough to provide that--but I fear that clinicians will not find this document so useful....</p>	<p>Given the broad scope of an evidence map, the aim is to better understand the areas where work has been done and where gaps may be. Evidence maps are not intended to answer questions of effectiveness or speak to specific clinical guidance, which would be the purview of a product like a systematic review.</p>
<p>Using the term "Art Therapy" to refer to the overall group of creative arts therapies is very confusing because visual art therapy is commonly referred to as Art Therapy.</p> <p>I strongly suggest that the more correct term "Creative Arts Therapies" be used in the title and throughout the document. The NOAH definition is a secondary source. The primary source is the National Coalition of Creative Arts Therapies Association (https://www.nccata.org):</p> <p>Creative Arts Therapists are human service professionals who use arts modalities and creative processes for the purpose of ameliorating disability and illness and optimizing health and wellness. Treatment outcomes include, for example, improving communication and expression, and increasing physical, emotional, cognitive and/or social functioning. There are more than 15,000 Creative Arts Therapists practicing in the United States and around the world. Creative Arts Therapy organizations have been active in this country for over 50 years. The Coalition includes Art therapy, Dance/Movement therapy, Drama therapy, Music therapy, Poetry therapy, and Psychodrama.</p>	<p>We have updated our use of this term, as well as other related terminology, throughout the report now that we have a better understanding of their appropriate use. We have incorporated a citation for NCCATA</p>
<p>Page 7 - link to interactive evidence map - on this page there are no titles at the top of the chart to define what population is in that particular column (it says "outcome" at the top??); I do like the ability to "hover" over the circle.</p>	<p>This is a constraint of the hosting platform, we are working to fix this.</p>
<p>Page 8 - figure 2. Evidence Map. I can't figure out how to read this? What does 1A, 1D, !G2, 1G1 etc. mean? Where is the key for this? Would be nice if there was a little more space between the horizontal lines.</p>	<p>We have added more description for this, both in the text, in the figure footnote, and in the appendix.</p>
<p>Strengths: I like the use of visual representations of the availability of evidence for different types of art therapies. I think it is useful to see in this way. One thing to consider is that if anyone prints the article out, the bubbles all look the same color. I wonder if using a pattern and color could help differentiate the two and help improve interpretability regardless of how you view the data.</p>	<p>The figure is a screenshot of an interactive evidence map directly taken from the online platform. The color bubbles are part of the developer's design, and we are unable to modify it.</p>
<p>The meaning of what is reported: I have been thinking about the meaning of the results, or rather how to interpret the results presented. I think the biggest challenge in my reading and understanding of what to do with the fields that only have systematic</p>	<p>Extracting included references from all the systematic reviews we incorporated into our evidence map would increase</p>

<p>reviews mentioned. I assume that in most cases, if a systematic review has been conducted, there are likely some studies that would be included in the current one. So is it fair to say, for example, that visual art therapy has the most references? What if we looked at the systematic reviews under dance/movement therapy and found 100 articles based on impact evaluations or RCTs? It seems that there would be something wrong with the search terms rather than a lack of evidence. I understand that there may be restrictions on the scope of this review, but I think it is really hard to know what to do with the results as presented as they raise questions about what we are missing when only systematic reviews are mentioned.</p>	<p>the work and scope of this project, something we were not able to do. Typically, evidence maps do not take this step, and many do not include literature outside of systematic reviews at all. .⁶ Given the broad scope of an evidence map, the aim is to better understand the areas where work has been done and where gaps may be.</p>
<p>Some examples of missing information is already noted in the structured fields. Specific examples include for 3A2 – Systematic Reviews of Visual Art Therapy for Mood Disorders. Weiskittle and Gramling’s review of literature on the use of visual art modalities with the bereaved identifies 27 studies that have been conducted and reported on with some clinical outcomes. I pulled up this review just to see if there were any articles mentioned in the review that might meet the criteria for inclusion in the current review. It looks like there might be 5-6 articles with quantitative outcomes. I did not then go and pull those articles, but I wonder if this was done. It seems like there may be articles that have been missed. Similarly, there seems to be more literature out there for art therapy for people with schizophrenia than reported in this article. A review by Angelica Attard and Michael Larkin in Lancet Psychiatry (2016, volume 3, issue 11) found “18 high quality qualitative articles” focusing on the use of art therapy for people with schizophrenia and psychosis. For dance therapy, the systematic review conducted by Bonnie Meekums, Vicky Karkou and E Andrea Nelson (from Cochrane Systematic Review database (2015) is not mentioned. This article identifies three RCTs focusing on the use of dance movement therapy for depression, none of which are mentioned in this article either.</p>	<p>Extracting included references from all the systematic reviews we incorporated into our evidence map would dramatically increase the work and scope of this project, something we were not able to do. Typically, evidence maps do not take this step, and many do not include literature outside of systematic reviews at all..²</p> <p>The qualitative articles described in the second review this reviewer identified would be out of scope as well, given that systematic reviews, RCTs, and impact evaluations with quantitative data on health outcomes were the only types of literature included.</p> <p>Finally, we no longer include dance movement therapy in this map, so this final review and the related studies would also be out of the new scope.</p>
<p>There is very little mention of any outcomes in the presentation of results from the review. I think it would be interesting to say something about the outcomes that are included in art therapy interventions. I know that there are a number of different conditions for which art therapy is used as an intervention. But generally speaking, did you find that the outcomes were related to symptom management or improvement, experience of illness, mental health related conditions, such as depression or anxiety, etc.? This may be outside of the scope of this review, but I think it would contribute to one of the objectives of the paper, which is to inform our understanding of the volume, nature and characteristics of the research.</p>	<p>Speaking to the effectiveness of a treatment is typically outside the scope of an evidence map, and that is the case for this evidence map. By nature of the research we mean what quality or study design has been used to evaluate art therapy, rather than descriptions of the findings described by that research.</p>
<p>Page 3: Search Strategy – the language used in the first sentence is a little confusing. What do you mean you conducted broad searches from database inception? On page 4 you mentioned studies published since 1980. I think the former means since the database became</p>	<p>While our searches did pull references from much earlier than the 1980 time point, we did not include these references in</p>



<p>available for use. It's just a flag that I initially read these as conflicting time periods.</p>	<p>our map. They are included in our literature flow though, as exclusions by date. This allows readers to see how many references were excluded for this reason.</p>
<p>Pages 3 Population – I don't think of "any medical condition" as a population. I would recommend humanizing this more. Perhaps something like – "individuals diagnosed with any medical condition."</p>	<p>This change has been made.</p>
<p>Pages 3 and 4: Inclusion – It is a little unclear who included in the study. One consideration is that the population of patients seems to be any with a diagnosed medical condition. But on page 4 - Timing - you mention mental health diagnoses. I think this is in reference to the kinds of impact outcomes you are looking for in articles included in the study, but there are some conceptual leaps that I would recommend the authors address. The section above – Outcomes – indicates you were looking for any health outcomes. In Timing it looks like it is just mental health outcomes. I think the seeming lack of alignment between Population, Outcomes and Timing makes it initially hard to track.</p>	<p>We have clarified population, outcomes, and timing.</p>
<p>Page 5: Study Design – the first sentence is missing an object.</p>	<p>This change has been made</p>
<p>Page 10: Systematic Review Findings – The first sentence is a little hard to follow. I would suggest rewording.</p>	<p>This has been reworded.</p>
<p>Page 11: I would recommend saying something more about what you found through the review. The authors most highlight the limitations of the review. This is important. But there is actually very little included about research gaps and future research. This seems like a missed opportunity.</p>	<p>More discussion was added here.</p>
<p>Page ii makes reference to the study questions. It is suggested that the study questions be explicitly stated in the report and included in Appendix A.</p>	<p>We have revised the sentence for clarity.</p>
<p>Page 2, line 21 of the document the authors state, "Therapists within these disciplines are board-certified". It is more precise to state therapists across these professions are credentialed in accordance with national and state regulations and standards.</p>	<p>We have made this change.</p>
<p>Page 3, line 41: The sentence of exclusion is ambiguous as to intent: "...or allied health professionals, were excluded". It is not clear whether interventions such as those employed in acute care or rehabilitation as part of individual and/or co-treatment with allied health professions are excluded in this review. For example, would a neurologic music therapy (NMT) intervention such as Rhythmic Auditory Stimulation (RAS) as part of a treatment plan with a physical therapist cotreating with a Board Certified Music Therapist with advanced training in NMT be excluded?</p>	<p>We have removed this example to avoid confusion, we were referring to the participants in the therapy, not who was facilitating/conducting the therapy.</p>
<p>Page 3, line 46: It is more precise to use the phrase "treatment modalities" since within each CAT, multiple treatment options exist for a given condition. Referring to the application of one or more CATs as "combined modalities" is confusing to clinicians since each CAT makes use of multiple interventions and approaches. Just as family nurse practitioners employ a variety of interventions, treatments, and</p>	<p>We have made this change.</p>



<p>procedures, so do music therapists, art therapists, etc. This distinction is a subtly of language use but important since CATs are not a singular, standard intervention using one theoretical framework or approach.</p>	
<p>Page 4, line 49 (and subsequent citations): “Visual art therapy” is not a term of art in standard use. Art therapy would be the preferred term referring to the profession for credentialed art therapists.</p>	<p>We have updated our use of this term, as well as other related terminology, throughout the report now that we have a better understanding of their appropriate use.</p>
<p>In addition, the summary of the systematic review findings and the narrative description of the map are largely unhelpful when it comes to understanding the respective rigor and quality of the studies mentioned therein. There is only the scantest of discussions about relative strength and weaknesses of the different studies, for each form of creative arts therapy, and how they might be improved. What are the takeaways for future researchers, in terms of designing and planning studies? Terms such as "low methodological quality" and vague formulations such as "high quality research was cited as a future need" are nowhere near helpful.</p>	<p>We did not appraise the quality of individual studies ourselves, as this is out of scope for our project. The findings related to study quality were from systematic reviews, and the review authors often did not supply additional details for us to report. In the summary of systematic review findings, we have provided one of the more detailed descriptions.</p>

COMMENTS ON SCOPE

Given the numerous comments about scope, we have created a second table specifically pertaining to these peer review comments. They are organized by peer reviewer. While individual reviewers provided nuance and highlighted various specific issues, there was broad agreement that a scope attempting to capture all creative Arts Therapies was too ambitious, given the constraints of time and other resources. The original scope of this project at its inception was limited to Art Therapy, and we revised the report to focus on this original scope. We agree that our attempts to stretch beyond our original scope created many of the issues described by peer reviewers below.

Comment
<p>No - Relevance and scope of review: Given the long history of creative arts therapies with service members, veterans, and their family members, this is an important topic. Music therapy, in particular, traces its origins as a profession in service to veterans (Clair, Else, Tan, 2018) which forms an important historical context to the profession.</p>
<p>The title, "Evidence Map of Art Therapy" is not clear. Was the scope of the evidence synthesis review intended to focus only on art therapy interventions or broader to all creative arts therapies (CATs), including music therapy, dance movement therapy, etc.? The terminology and the title do not accurately reflect the very large scope of the review as presented. The "arts" and "art therapy" are distinct and different terms.</p>
<p>The scope of the review and evidence map includes all CATs and appears highly ambitious. It is suggested that the search strategy may be more effective – if/when revisited -- using an alternate search plan, expanded terms, and undertaken in phases or stages. Perhaps a search by individual CAT practice area and guided - or narrowed - by specific questions would be more effective/useful. This may prove to be valuable for clinical decision making, future research, and practice policy.</p>
<p>Creative arts therapies include and refer to distinct professions, each utilizing multiple possible evidence-informed interventions in practice. The term art therapy or music therapy is the term applied to the profession as a whole and it is not specific to a particular theoretical framework or model that underpins an intervention or protocol. Appendix B refers to the profession (art therapy, music therapy) as an intervention which is nonspecific and technically imprecise. (For a related discussion on interventions in music therapy see www.sciencedirect.com/science/article/pii/S096522991730938X) Music therapy, in particular, consists of areas of subspecialty given its scope of practice spans a broad range of populations, conditions, and settings. I would, therefore, suggest citing the definition of each profession directly from the respective professional associations if the scope of the review includes research across all creative arts therapies and not just art therapy. Explicit statement of the research review question(s) of interest would be useful for the reader to understand the scope.</p>
<p>While the overall approach to the review appears sound, there is the possible bias due to overlooked literature and scope. The draft evidence map document is clearly a good fit with emerging definitions regarding the aims and purposes of evidence synthesis reviews and evidence synthesis mapping (Miake-Lye, Hempel, Shanman, & Shekelle, 2016). It is, however, a bit unusual to prepare an evidence map on a broad topic including multiple creative arts therapies and absent specific attention to the intersection of a) conditions most commonly affecting veteran (and adult) populations and b) presenting conditions most commonly seen by CATs in practice. A focused set of questions may permit a more sensitive and specific evidence map (or evidence map series).</p>
<p>Search strategy: It appears many peer reviewed studies were missed due to a search strategy that overlooked search terms for peer reviewed studies specific to the various creative arts therapy. The search strategy noted in Appendix A appears to assume the term [art therapy] encompasses CAT studies in addition to art therapy. For example, "music therapy" is a specific term in the NLM MeSH</p>

(<https://www.ncbi.nlm.nih.gov/mesh/>) and subcategories do not include art therapy. A PubMed search using MeSH term [music therapy] and publication type [clinical trial] yielded 737 hits and 630 hits if publication type was further refined to RCTs or 186 hits if publication type was limited to comparative studies.

Cochrane reviews specifically in music therapy (and this reviewer's specific area of practice expertise) appear to be overlooked from the search. Topics include, but are not limited to, acquired brain injury, outcomes with cancer patients, schizophrenia, depression, and dementia. Similarly, SRs in the Journal of Music Therapy on topics such as pain are well cited and indexed with the NLM/PubMed but were not captured in the search strategy.

Page 4, line 16: There is a limited body of work in meta-syntheses of qualitative studies in music therapy. Data generated from rigorous qualitative research methods and combined on a topic may represent an missed opportunity in understanding the gaps in research and knowledge. Many of these questions arise and build upon the conclusions found in a meta-synthesis, inform future trials, and often touch on lines of inquiry and question types not found in RCTs seeking evidence of efficacy or effectiveness (pragmatic trials), but important to patient care, treatment, practice policy, and future research (e.g. Meadows & Wimpenny, 2017; Medcalf & McFerran, 2016).

The title is misleading. "Art Therapy" implies a single discipline, i.e. visual arts therapy. This report provides evidence in multiple creative arts therapies disciplines. A truer title would be Evidence Map of Creative Arts Therapies - Visual Art, Music, Dance/Movement Therapy. The introduction (beginning line 16) misstates the definitions of creative arts therapies, expressive arts therapies, and arts in health as provided in the NOAH white paper Arts, Health and Well-being in America (pg 7) by inaccurately condensing the content and removing "creative arts therapies" from the definition. The actual definition provided in the report is "Creative Arts Therapies (CATs) include the distinct regulated health professions of art therapy, dance/movement, therapy, drama therapy, music therapy, poetry therapy, and psychodrama therapy." At line 22, the definition of Expressive Arts Therapy becomes muddled from excessive reduction of the definition provided in the White Paper (pg 7). Line 24 the definition of "arts in health" is not clear as written. Throughout this paragraph art therapy is used interchangeably with creative arts therapies, creating confusion. When referring to multiple arts disciplines, Creative Arts Therapies should be used. In a single discipline, Art Therapy, Music Therapy, Dance/Movement Therapy, etc is correct. This needs a thorough copy edit to correct these unfortunate mistakes to lend clarity to what is being examined here.

Yes - It's not a bias necessarily, but in numerous places the report continues to incorrectly use Art Therapy when referring to more than one discipline including the description of the Evidence Map (line 48). Though referring to "Art Therapy Modality" in reality the evidence is showing five distinct Creative Arts Therapies modalities, including visual art therapy, dance/movement therapy, drama/psychodrama therapy, music therapy and poetry therapy. Taken together these are defined as the Creative Arts Therapies.

I am concerned that the failure to be precise in the terminology may have negatively impacted the Search Strategy, and skewed the study selections for the interventions. Line 46 again incorrectly quotes the NOAH white paper as including the six "distinct regulated health professions of art therapy" disciplines, when these are clearly outlined in the NOAH paper as belonging to the overarching category of creative arts therapies. By using the term 'art therapy' instead of creative arts therapies, it's little wonder the report indicates a preponderance of art therapy studies. It seems the music therapy category is underrepresented given the longer length of time that music therapy has been undergoing research.

<https://www.sciencedirect.com/science/article/pii/S0197455618301916>

Vaudreuil, R., Avila, L., Bradt, J., & Pasquina, P. (2018). Music therapy applied to complex blast injury in an interdisciplinary model: A case report. *The Journal of Disability and Rehabilitation*. doi: 10.1080/09638288.2018.1462412 (Impact factor = 1.8)

<https://www.tandfonline.com/doi/full/10.1080/09638288.2018.1462412>

Page 8 Line 13- 27 “Art Therapy” - My understanding the study/evidence mapping would be on all the disciplines that make up the Creative Arts Therapies. There are four distinct and separate Clinical Professionals who are governed by their respective accreditation bodies – Art Therapy; Music Therapy; Drama Therapy and Dance/Movement Therapy. The term “Art Therapy” does not encompass professional work of the other professions i.e. Music therapy, Dance Therapy and Drama Therapy. Page 8 line 17 – professions of “art therapy” is inaccurate. Art Therapy is it’s own specific profession and does not encompass the other professional disciplines. Page 8 line 26/27 - considered a distinct from art therapy. I believe art therapy in this context you are referring to the Creative Arts Therapies and should not be grouped into the term Art Therapy. You could reference National Coalition of Creative Arts Therapies Associations, Inc. This is made up of the professional organization for each of the distinct Therapies that make up creative arts therapy professionals i.e. Art Therapy – American Art Therapy Association; Music Therapy – American Music Therapy Association; Dance Therapy - American Dance Therapy Association; Drama Therapy - North American Drama Therapy Association.

General Comments

The scope of the intended scope – it appears the scope of project is attempting to look at literature and evidence across the four distinct professional groups of art therapy; music therapy; dance/movement therapy and drama therapy across all clinical topics. However, the literature search to appears to have only utilized primary term Art therapy which does not provide or excludes data related to the other terms/professions such as Music Therapy (MT); Dance/Movement Therapy (DMT); Art Therapy (AT), etc. The text appears to treat the term “art therapy” as a Intervention rather than the name of each of the professions. Each of the professions have unique credentials for the associated profession.

Terminology – appears the term art therapy is attempting to encompass all therapies. This is misunderstood term and not inclusive of the other creative arts therapy professionals – music therapy, drama therapy, dance/movement therapy. In addition, the term art therapy seems to represent an intervention when that actually is term used for the profession itself and not the intervention specifically.

The term art therapy within the literature search is missing a considerable amount of research from the other professions such as music therapy, dance/movement therapy and drama therapy. That is a gap in the use of the term “art therapy” to try to encompass all of the other professions. There is missing literature on varying subtopics such as Traumatic Brain Injury; Post Traumatic Stress Disorder and music therapy interventions.

Research questions for the evidence review were not all explicitly stated for high priority topics that are pertinent to Veterans and active service members such as evidence mapping on suicide prevention; depression; post-traumatic stress disorder; traumatic brain injuries; pain; opioid/substance abuse; sleep; trauma or complex trauma as examples.

It would be good to add a credentialed academic scholar for each of the professions represented (Board Certified Music Therapist; Board Certified Art Therapists; Board Certified Dance Therapist; etc. to the Technical Expert Panel (TEP) section of the study. There was peer reviewers with credential however they would have limited scope whereas if added to TEP that could help provide improved Guide topic refinement and ensure proper terminology usage is used to capture full scope of the work and literature.

In general it appears - term art therapy was misunderstood and utilized to capture full extent of the project but was missing literature that impacts the overall creative arts therapy professionals work related to the professions of art therapy, music therapy, dance/movement therapy etc.

Topics for interventions utilized by the credentialed therapist in the professions of music therapy, dance/movement therapy and drama therapy were missed which resulted in potential lost information on outcomes related to the delivery of interventions used by the professionals.

Would request to re-run literature search using alternative searching strategies to include terms that

<p>impact creative arts therapist in music therapy, dance/movement therapy etc. Execution of updating terms and also adding in a few more individuals from the professional associations would improve the result of the study and provide more meaningful data to the Program offices for decision making and strategic planning.</p> <p>Yes - See above comments</p>
<p>Yes - The search criteria, which focuses on the term "art therapy," has weighted the review toward the (visual) art therapy. Suggestions for improved search criteria are included in my attachment.</p> <p>Yes - I am concerned that many studies focused on music therapy have been overlooked. Note, for example, Music interventions for improving psychological and physical outcomes in cancer patients by J Bradt, C Dileo, L Magill, A Teague (2016), which is included in the Cochrane Database of Systematic Reviews.</p>
<p>Yes - Distressingly, this report's search criteria (and the very title of the synthesis) betray an unwitting bias toward "art therapy" (that is, visual art therapy) over music therapy, dance and/or movement therapy, drama and/or theater therapy, and expressive or creative writing therapy. For a report of this type, it is crucial to use search terms that don't lock one into a particular arts modality. Appendix A explains that "art therapy" was indeed a pivotal search term, possibly at the expense of these other types of creative arts therapies. In short, the search terms are terrifically biased, if I read the appendix correctly.</p> <p>Yes - I'm sure there are, due to the unfortunate search criteria (see above).</p>
<p>Yes - Perhaps not bias so much as lack of clarity in the conflation of "art therapy" and "creative arts therapies," as well as lack of comprehensive inclusion of literature in the synthesis.</p> <p>Yes - See my comments below.</p>
<p>It appears that the title and the terms used in the manuscript do not accurately reflect the review. The "arts" and "art therapy" are distinct and different terms. Further, it is unclear as to whether the scope of the synthesis review was intended to target art therapy interventions, or all creative arts therapies. Furthermore, some of the contents of the NOAH White Paper are misquoted. For example, please refer to my comments (related to content on page 8 of the PDF file - in ALL CAPS):</p> <p>"The National Organization for Arts in Health (NOAH) identifies six "distinct regulated health professions of art therapy" (SIX DISTINCT REGULATED PROFESSIONS) which have "a definition of the profession, a legally defensible scope of practice, educational competencies, standards of practice, code of ethics, and evidence-based research."¹ These include art therapy, dance/movement therapy, drama therapy, psychodrama therapy (STRIKE "THERAPY," PSYCHODRAMA IS KNOWN SOLELY AS PSYCHODRAMA), music therapy, and poetry therapy. Therapists within these disciplines are board certified (THEY SHOULD BE BOARD CERTIFIED, BUT THAT'S NOT ALWAYS THE CASE. SOME STOP AT NATIONAL REGISTRATION CREDENTIALS. OTHERS GO BEYOND BOARD CERTIFICATION AND OBTAIN LICENSURE SPECIFIC TO THEIR DISCIPLINE (OR OTHER, DEPENDING ON THE SITUATION IN A GIVEN STATE, SUCH AS COUNSELING LICENSURE). When these different modalities or disciplines are blended or combined by trained professionals this is referred to as expressive art therapy (THIS IS AN IMPORTANT DISTINCTION: I HAVE EDITED THIS SENTENCE SO AS TO CLARIFY, AND AVOID MISLEADING, THAT EXPRESSIVE ARTS THERAPY IS NOT REGULATED IN THE WAY THAT THE DISTINCT CATS PROFESSIONS ARE: "CONVERSELY, WHEN THESE DIFFERENT ARTS MODALITIES ARE COMBINED BY TRAINED PROFESSIONALS, THIS IS REFERRED TO AS EXPRESSIVE ARTS THERAPY.). While arts can be used in other ways within health care and public health, these arts in health programs are not led by trained therapists, but rather artists or other types of coordinators, and are considered distinct from CLINICAL CREATIVE ARTS THERAPIES.</p> <p>THE CREATIVE ARTS THERAPIES ARE used in the treatment of a variety of conditions, including schizophrenia,² depression,³ and stroke rehabilitation.⁴ Given the breadth of conditions to which</p>



<p>CREATIVE artS therapIES haVE been applied (STRIKE: "and the variety of disciplines under the umbrella of creative art therapy" - REDUNDANT), we conducted an evidence mapping ..."</p>
<p>I would encourage the authors to carefully consult the NOAH White Paper, https://th Noah.net/wp-content/uploads/2019/01/NOAH-2017-White-Paper-Online-Edition.pdf, which includes definitions of the distinct CATs professions, as sanctioned by each profession's national organization. On page 26 of the White Paper/PDF, Table 1, Creative Arts Therapies Professions Overview, includes an overview of the CATs professions. This information was provided by the national CATs organizations, therefore it is an accurate and trustworthy source.</p>
<p>Yes - Referring to the modalities as defined by Noah as "Art Therapy" is a concern to me. Practicing creative arts therapist may not being lumped into an "Art Therapy" category. Suggest replacing art therapy with 'Creative Arts Therapy', 'Creative Arts Therapies' or the plural "Arts Therapy". Using the term, "Art Therapy" to refer to the larger spectrum of modalities may imply the authors did not fully grasp an understanding of the topic as Art Therapy in itself is a singular modality/profession.</p>
<p>Yes - I note that your search strategy included the key words "Art Therapy" and wondering if the individual modalities "Music therapy, Dance Therapy, etc. might have yielded more eligible studies. I am disappointed at the limited number of references that met your criteria for rigor – only 102 out of the original 1132 identified (only 10%). Is this solely an indicator of the lack of Randomized Controlled Trial, quantitative impact evaluations with health outcome data, or systematic reviews out there or the poor quality of the research in this field or could the search have been expanded?</p>
<p>Yes - See my comment above. I think that there are probably a number of quantitative impact or RCT studies missed in this review. One example is for dance movement therapy. Meekums et al (2015) did a Cochrane Review and identified 3 RCTs. I don't see this included, or the articles (Jeong, 2005; Xiong, 2009; Rohrict, 2013). I wrote out some additional ones in my narrative comments.</p>
<p>If the articles want to be inclusive, I would recommend reviewing the systematic reviews to identify articles that the search strategy missed. Not all of the systematic reviews included articles that would be included in the current review, but I think there are a number that the authors will find.</p>
<p>Missing articles: I have some concerns about the search process and am not confident that the results reported reflect the literature that is out there about art therapy. I think reliance on just the terms "art therapy" (or parts thereof) may underlie some of the missing data from this review. The authors noted in the summary that using terms specific to different disciplines was outside of the scope of the review. But I think that at least adding the different types of art therapies would be helpful. I would suggest adding to the search with those additional key terms in order to be more inclusive.</p>
<p>There were few qualified studies from several of the NOAH defined Creative Arts Therapy professions. a search specific to each of the defined areas may add value. Music Therapy, Art Therapy, Dance Therapy, Drama Therapy, Poetry Therapy, Psychodrama.</p>

APPENDIX F. REFERENCES MAPPED TO EVIDENCE MAP BUBBLE PLOT

Below are the citations associated with each bubble within the evidence map (Figure 2). Citations are grouped by bubble label. Each bubble has been assigned a coordinate in the report version of the evidence map for ease of identification. This coordinate is assigned a number, based on the corresponding health condition, and a letter, based on the corresponding treatment modality. In cases where there is more than one bubble in that map segment, the gray impact evaluation bubbles have a “1” appended to the end of this coordinate, the green systematic reviews bubbles (rated high confidence) have a “3” appended to the end of the coordinate, the orange systematic reviews bubbles (rated medium confidence) have a “4” appended to the end of the coordinate, and the red systematic reviews bubbles (rated low confidence) have a “2” appended to the end of this coordinate. Bolded citations refer to RCTs.

1A. Sixteen Impact Evaluations: Art Therapy for Cancer/palliation

- Geue K, Rieckhof S, Buttstaedt M, Singer S. Do cancer patients with high levels of distress benefit more than less distressed patients from outpatient art therapy? *European journal of oncology nursing : the official journal of European Oncology Nursing Society*. 2017;30(1532-2122 (Electronic)):1-7.
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5A. One Impact Evaluation: Art Therapy for PTSD

- **Campbell M, Decker KP, Kruk K, Deaver SP. Art Therapy and Cognitive Processing Therapy for Combat-Related PTSD: A Randomized Controlled Trial.**

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APPENDIX G. SYSTEMATIC REVIEW EVIDENCE TABLES

Author, Year	Review Characteristics	Main Findings
1B3. One Systematic Review: Mixture/combination therapies for Cancer/palliation: High Confidence		
Kim, 2017 ³⁴	Modality: Mixture/combination Health condition: Cancer/palliation Included studies: 14 Quality rating: High	"Some studies reported beneficial effects of art making on pain and QoL, but the evidence was weakened by poor study quality ratings, heterogeneity in art-making interventions and outcome measures, interventions including non-art-making components, and few randomized controlled studies."
1B4: Three Systematic Reviews: Mixture/combination therapies for Cancer/palliation: Medium Confidence		
Archer, 2015 ³¹	Modality: Mixture/combination Health condition: Cancer/palliation Included studies: 10 Quality rating: Medium	"There is initial evidence that creative psychological interventions (CPIs) benefit adult cancer patients with respect to anxiety and depression, quality of life, coping, stress, anger and mood; there was no evidence to suggest that any one type of CPI was especially beneficial. However, more and better quality research needs to be conducted, particularly in the areas of drama and dance/movement therapies."
Boehm, 2014 ³²	Modality: Mixture/combination Health condition: Cancer/palliation Included studies: 13 Quality rating: Medium	"Thirteen trials with a total of 606 patients were included. Arts therapies comprised music therapy interventions, various types of art therapy, and dance/movement therapies. The methodological quality ranged from poor to high quality with the majority scoring 3 of 4 points on the Jadad scale. Results suggest that arts therapies seem to positively affect patients' anxiety but not depression or quality of life. No conclusion could be drawn regarding the effects of arts therapy on pain, functional assessment, coping, and mood states."
Puetz, 2013 ³³	Modality: Mixture/combination Health condition: Cancer/palliation Included studies: 27 Quality rating: Medium	"During treatment, creative arts therapies (CAT) significantly reduced anxiety (delta=0.28 [95% CI, 0.11-0.44]), depression (delta=0.23 [0.05-0.40]), and pain (delta=0.54 [0.33-0.75]) and increased QOL (=0.50 [0.25-0.74]). Pain was significantly reduced during follow-up (delta=0.59 [95% CI, 0.42-0.77])."

Author, Year	Review Characteristics	Main Findings
1B2. Two Systematic Reviews: Mixture/combination therapies for Cancer/palliation: Low Confidence		
Wood, 2011 ²⁹	Modality: Mixture/combination Health condition: Cancer/palliation Included studies: 12 Quality rating: Low	"Fourteen papers reporting 12 studies met the inclusion criteria. Symptoms investigated spanned emotional, physical, social and global functioning, and existential/spiritual concerns. Measures used were questionnaires, in-depth interviews, patients' artwork, therapists' narratives of sessions, and stress markers in salivary samples. No overall effect size was determined owing to heterogeneity of studies. Narrative synthesis of the studies shows art therapy is used at all stages of the cancer trajectory, most frequently by women, the most common cancer site in participants being breast."
Geue, 2010 ³⁰	Modality: Mixture/combination Health condition: Cancer/palliation Included studies: 17 Quality rating: Low	"The art therapy interventions differ from each other considerably in their content and structure...A total of seven quantitative papers focused on mental health. A decrease in anxiety and depression was noted in six of these. Three papers documented an increase in quality of life."
2A2. Two Systematic Reviews: Art Therapy for Mood Disorders: Low Confidence		
Weiskittle, 2018 ⁴⁶	Modality: Art therapy Health condition: Mood disorders Included studies: 27 Quality rating: Low	"Modest and conflicting preliminary evidence was found to support treatment effectiveness in alleviating negative grief symptoms such as general distress, functional impairment, and symptoms of depression and anxiety."
Blomdahl, 2013 ⁴	Modality: Art therapy Health condition: Mood disorders Included studies: 16 Quality rating: Low	"The analysis resulted in eight therapeutic factors: self-exploration, self-expression, communication, understanding and explanation, integration, symbolic thinking, creativity, and sensory stimulation. No general conclusions could be drawn regarding circumstances, but the results indicate that art therapy can be performed successfully in a wide variety of clinical situations."

Author, Year	Review Characteristics	Main Findings
3B2: Two Systematic Reviews: Mixture/combination therapies for Alzheimer's/dementia: Low Confidence		
Cowl, 2014 ⁵⁷	Modality: Mixture/combination Health condition: Alzheimer's/dementia Included studies: 112 Quality rating: Low	"Findings suggest that creative arts therapy is effective for treatment of behavioral and emotional challenges of the disease, but not for treatment of cognitive decline. However, small sample sizes, short (or nonexistent) follow-up, and the difficulty quantifying findings remain as challenges when interpreting the efficacy of creative arts therapy for persons with memory loss."
Beard, 2012 ⁵⁸	Modality: Mixture/combination Health condition: Alzheimer's/dementia Included studies: 134 Quality rating: Low	"This analysis reveals that systematically designed, documented, and evaluated AT studies are scarce. Information on research design, operational concepts, measurement tools, and methods of evaluation/analysis are vague, if provided."
4B1: One Systematic Review: Mixture/combination therapies for Schizophrenia/psychosis: High Confidence		
Ruddy, 2005 ⁶⁴	Modality: Mixture/combination Health condition: Schizophrenia/psychosis Included studies: 2 Quality rating: High	"Both [studies] compared art therapy plus standard care with standard care alone... Data from one mental state measure (SANS) showed a small but significant difference favouring the art therapy group (n=73, 1 RCT, WMD - 2.3 CI -4.10 to -0.5). In the short term, a measure of social functioning (SFS) showed no clear difference between groups in endpoint scores (n=70, 1 RCT, WMD 7.20 CI -2.53 to 16.93) and quality of life, as measured by the PerQoL, did not indicate effects of art therapy (n=74, 1 RCT, WMD 0.1 CI -2.7 to 0.47)."
4B2: One Systematic Review: Mixture/combination therapies for Schizophrenia/psychosis: Medium Confidence		
Attard, 2016 ⁶³	Modality: Mixture/combination Health condition: Schizophrenia/psychosis Included studies: 18 Quality rating: Medium	"High-quality quantitative articles provided inconclusive evidence for the effectiveness of art therapy in adults with psychosis. However, high-quality qualitative articles indicated that therapists and clients considered art therapy to be a beneficial, meaningful, and acceptable intervention, although this conclusion was based on a small number of studies."
4A2. One Systematic Review: Art Therapy for Schizophrenia/psychosis: Low Confidence		
Ruiz, 2017 ³	Modality: Art therapy Health condition: Schizophrenia/psychosis Included studies: 20 Quality rating: Low	"It is not clear whether art therapy leads to clinical improvement in schizophrenia or if it is a cost-effective therapy because the certainty of the evidence is very low."
5B2. One Systemic Review: Mixture/combination therapies for PTSD: Medium Confidence		
Baker, 2017 ⁶⁷	Modality: Mixture/combination Health condition: PTSD Included studies: 7 Quality rating: Medium	"The evidence for music therapy, art therapy, and drama therapy was ranked as low to very low, with no studies found for dance/movement therapy. Generally, the quality of the trials was very poor."



Author, Year	Review Characteristics	Main Findings
6B2. Two Systematic Reviews: Mixture/combination therapies for Other Psychiatric Health Conditions: Low Confidence		
Schouten, 2015 ⁸³	Modality: Mixture/combination Health condition: Other psychiatric, psychological trauma Included studies: 6 Quality rating: Low	"In half of the included studies, a significant decrease in psychological trauma symptoms was found in the treatment groups, and one study reported a significant decrease in depression."
Uttley, 2015 ⁸²	Modality: Mixture/combination Health condition: Other psychiatric, non-psychotic mental disorders Included studies: 11 Quality rating: Low	"Art therapy was associated with significant positive changes relative to the control group in mental health symptoms in 7 of the 11 studies."
7B3. One Systematic Review: Mixture/combination therapies for Other Non-Psychiatric Health Conditions: Medium Confidence		
Chu, 2018 ¹⁰¹	Modality: Mixture/combination Health condition: Other non-psychiatric, various conditions Included studies: 21 Quality rating: Medium	"Chinese calligraphy therapy (CCT) significantly reduced psychosis , anxiety symptoms, and depressive symptoms. CCT also significantly improved cognitive function and neurofeedback. The therapy also significantly reduced the positive psychopathological expression of schizophrenia symptoms and reduced the negative symptoms of schizophrenia... but the evidence remains insufficient."
7B2. Two Systematic Reviews: Mixture/combination therapies for Other Non-Psychiatric Health Conditions: Low Confidence		
Stuckey, 2010 ⁹⁹	Modality: Mixture/combination Health condition: Other non-psychiatric, various conditions Included studies: 19 Quality rating: Low	"In the areas of music engagement, visual arts, movement-based arts, and expressive writing "reviewed here, there are clear indications that artistic engagement has significantly positive effects on health."
Reynolds, 2000 ¹⁰⁰	Modality: Mixture/combination Health condition: Other non-psychiatric, various psychiatric and non-psychiatric conditions Included studies: 17 Quality rating: Low	"In the few studies that have been performed, art therapy appears to be effective, but not usually more effective than the standard therapy."