Elsevier Editorial System(tm) for The Lancet Psychiatry

Manuscript Draft

Manuscript Number: THELANCETPSYCH-D-15-00772R5

Title: The Effectiveness and Meaningfulness of Art Therapy in the Treatment of People with Psychosis: A Narrative Review of the Literature

Article Type: Review (Unsolicited)

Keywords: Psychosis; Art Therapy; Effectiveness; Suitability

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Manuscript Region of Origin: UNITED KINGDOM

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The Effectiveness and Meaningfulness of Art Therapy in the Treatment of People with Psychosis: A Narrative Review of the Literature

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Abstract

This narrative review examines the effectiveness of Art Therapy (AT) for people with psychosis and explores whether art therapy is a meaningful and acceptable intervention. Seven electronic databases were searched for empirical papers that concerned the use of art therapy with adults with psychosis that were published from 2007 onwards. The search identified eighteen papers. The highest quality quantitative articles provided inconclusive evidence for the effectiveness of art therapy. The highest quality qualitative articles indicated that therapists and clients considered art therapy to be a beneficial, meaningful, and acceptable intervention, although this was based on limited studies. There is a discrepancy between the quantitative evidence regarding art therapy effectiveness and the qualitative evidence highlighting the value given to it by clients and therapists. Theoretical, clinical, and methodological issues are discussed in light of the development of more robust research, which is needed to corroborate individuals' experiences and guide evidence-based practice.

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Literature Overview

Psychosis and schizophrenia can have a debilitating impact on people's lives and mortality.[1] Pharmacotherapy is a primary treatment for schizophrenia, though its effectiveness can be limited and undermined by its side effects.[2] People may become treatment resistant[1] and continue to experience symptoms together with psychological, social, and functional difficulties.[3] Therefore, NICE highlights the need for psychological therapies to be offered in conjunction with medication to support individuals with psychosis and schizophrenia through their recovery.[4]

In addition to Cognitive Behavioural Therapy (CBT) and family intervention, arts therapies are recommended, particularly for people with negative symptoms. NICE identifies that arts therapies include *"art therapy or art psychotherapy, dance movement therapy, body psychotherapy, drama therapy and music therapy"* (p. 217).[5] These arts therapies seek to enhance individuals' creativity, emotional expression, communication, insight, and ability to relate to themselves and others.[5] They should be delivered by arts therapists registered with the Health and Care Professions Council who have worked with people with psychosis .[5]

The use of art therapy specifically, with people with psychosis, is the main focus of this narrative review. According to the British Association for Art Therapy (BAAT), art therapy is defined as "*a form of psychotherapy that uses art media as its primary mode of expression and communication*" to support people in distress.[6] This primarily involves using art media in a group or individual setting.[6] Throughout this review art therapy is understood in line with this explanation of art therapy.

Art therapists have advocated for art therapy to be used with this client group routinely. Negative psychotic symptoms may hinder people's ability to identify and explore their experiences.[7] People with schizophrenia often have difficulties with identifying their own or others' mental states[8] and may withdraw socially.[9] Art therapy has a longstanding role in facilitating engagement when direct verbal interaction becomes difficult.[9,10] Art is considered a mediator (between the person with psychosis and therapist) which offers a safe, indirect means of connecting with oneself and others.[9,11] People with psychosis may also experience blurred boundaries between their internal and external worlds which can feel overwhelming.[12] Art therapy enables people to express and project their emotional, cognitive, and psychotic experiences onto their art, and process them at a pace that feels comfortable to them.[9,12] Furthermore, art therapy commonly occurs in group settings where art is a communal means of self-expression; this can increase individuals' sense of belonging.[7]

This support for the helpfulness of art therapy is rooted in theory and clinical experience and is weakly substantiated by rigorous, controlled research. National guidelines on the treatment of specific conditions, are based on the highest quality scientific evidence, which includes Randomised Control Trials (RCTs) and systematic reviews which have at least one RCT.[13] By comparison, studies which use cohort, case-control, cross-sectional, or single case designs are considered to provide weaker evidence.[14]

The effectiveness of art therapy is primarily established through RCTs. In an early Cochrane review, the lack of RCTs prevented conclusions from being drawn about the effectiveness of art therapy for people with schizophrenia.[15] Nevertheless, the two reviewed studies[16,17] contributed to the 2009 National Institute for Clinical Excellence (NICE) guidelines, which

indicated that arts therapies (including art therapy), can enable recovery especially for people with negative symptoms.[18]

Green and colleagues found that a ten-week art therapy outpatient group demonstrated significant gains in social interaction and self-esteem when compared to Treatment As Usual (TAU).[16] Richardson and colleagues explored the effect of a 12-week art therapy outpatient group compared to TAU.[17] Despite an underpowered sample and high dropout rates, there was a statistically significant decrease in negative symptoms for the art therapy group post-intervention and at follow-up. Another RCT showed that a 15-week art therapy group significantly improved mental health, quality of life, and functioning amongst inpatients with psychosis compared to TAU.[19] Recently, these outcomes have been contradicted by the largest 3-armed RCT, the MATISSE trial.[20,21] This has provoked a wave of clinical and academic responses and concerns regarding the future of art therapy for people with schizophrenia.[22,23]

The growing interest in art therapy is also evident through recent systematic reviews. These evaluated some schizophrenia literature, however, without synthesizing it comprehensively. Slayton and colleagues reviewed the general effectiveness of art therapy within clinical and non-clinical populations from 1999 to 2007. They concluded that art therapy was effective but did not specify for which clinical populations or how it was effective.[24] Van Lith and colleagues reviewed the implications of art-based practices on recovery and concluded that this aided social and psychological recovery.[25] The articles that focused on schizophrenia were dated 2009 or earlier though in some, the interventions focused on skill development

and were not facilitated by art therapists.[26,27] The most recent RCT review also highlighted the benefit of art therapy though referred to a range of client groups.[28]

This review builds upon and addresses gaps in the latter reviews by specifically focusing on research regarding art therapy and people with psychosis from 2007 onwards. It aims to firstly report on the effectiveness of art therapy as an intervention for people with psychosis in comparison to any control group and outcome measure. Secondly, it aims to understand whether art therapy is suitable and meaningful for this population from the perspective of service users and art therapists by including all research methodologies.

Methodology

Search Strategy and Selection Criteria

A thorough systematic literature search was conducted (see Panel 1). The main search terms used were 'art therapy' and 'psychosis'. The term 'art therapy' was operationalised in line with the BAAT definition.[6] The term 'psychosis' was an umbrella term used for a cluster of psychotic disorders such as, schizotypal and schizoaffective disorders, in accordance with the NICE[29] guidelines for schizophrenia and psychosis, and the British Psychological Society.[30]

Panel 1 Search Strategy to go here

Figure 1 illustrates that the search elicited 774 papers. Author AA screened these by title, abstract, and full-text, whilst author ML assessed a sub-sample of these papers for their suitability based on the inclusion and exclusion criteria. Articles were omitted if they were published earlier than 2007, unavailable in English, not empirical papers, and did not focus on art therapy or adults with psychosis. Articles which primarily concerned drama, music, and dance therapy were excluded. Papers were included from 2007 onwards to build on the last Cochrane review which reviewed RCTs published till 2007,[15] and on later systematic reviews which did not review literature in art therapy and psychosis published from 2007 onwards.[24,25,28] The effectiveness of art therapy was considered in comparison to any control groups or TAU and no restriction was put on the outcomes measured. Quantitative and qualitative research carried out in all settings was included.

The full-text screening revealed that interventions were sometimes ambiguously defined making it difficult to distinguish between art psychotherapy and the use of art for enjoyment and artistic skill acquisition. Following discussion with a consultant art therapist, it was decided that for these studies, a reliable indicator of the provision of art therapy was the involvement of registered art therapists as intervention facilitators or supervisors. This ensured that only studies exploring art therapy were reviewed.

Eighteen papers were included in this review. The recently reviewed papers relating to the MATISSE trial were included to evaluate them in light of the wider research.[22] The papers by Crawford were presented together and referred to as 'MATISSE'.[20,21] This review did not follow the PRISMA statement for systematic reviews given the varied methodologies and quality of the papers which required a more narrative synthesis.

Figure 1. Flow diagram for included and excluded studies to go here

Quality Appraisal

The 18 articles included various methodologies. A multi-method quality framework was developed to review the articles' quality according to standardised criteria.[31] The framework was based on quality criteria for mixed-method studies.[32] When criteria were deemed missing, items were added from qualitative,[33] mixed methods,[34] and RCT quality frameworks.[35] A set of criteria for case studies was collated from three papers,[36-38] and integrated into the multi-method framework. In accordance with Centre for Reviews and Disseminations recommendations, the framework was piloted with an independent researcher.[31]

The final framework was organised into four main quality categories against which author AA rated every article: Truth Value, Applicability, Consistency and Neutrality. Each category was scored and the average score across the four categories indicated the articles' overall quality rating and robustness as good, moderate, or poor (see Appendix). ML and the independent researcher calibrated the quality ratings for a sample of the 18 studies. Differences in ratings were resolved through discussion.

Author AA extracted data from each study using a grid that summarised information relevant to the review's aims (see Table 1). A random sample of the extraction summaries were checked for accuracy by ML to increase consistency. Differences in opinion between the authors were discussed.

Role of the funding source

There are no relevant funding sources in relation to this manuscript. Author AA has full access to the study data and had final responsibility for the decision to submit for publication.

Table 1 Data extraction of final studies to go here

Results

A narrative synthesis is presented of the quality and methodological considerations within and across the papers, in line with the four quality categories. The papers' demographics and treatment approaches are then described, after which their contribution towards the two research questions is outlined.

Quality of the Studies

Overall, the evidence within this review was weak. It included two RCTs, a re-analysis of an RCT, one mixed-methods study, a survey design, a non-experimental design, five qualitative studies, and six case studies. Eight studies were good quality, four were moderate quality and six were poor quality (see Table 2). The poor quality studies were considered cautiously throughout this review.

Table 2. Summary of Quality of the Studies to go here

The 'truth value' of some studies was adversely affected because authors presented compound results for participants with different diagnoses.[39-42] This made it difficult to identify whether art therapy benefited a subset of participants with psychosis. It was unclear whether supporting quotations and/or images were a credible representation of participants' experience, because often no reference was made to the source or context of such

examples.[40-45] In the mixed-sample studies it was also unclear whether quotations came from participants with psychosis.

Results were sometimes confounded because some participants receiving art therapy had prior interest in art[43,46] and in one study participants in control groups had 'no affinity' for art.[40] It was suggested that motivation[47] and keenness for art may have positively influenced engagement and perceived benefit from art therapy.[43] Leurent et al. however, identified that interest in art was not a moderating factor in MATISSE.[48] The RCTs were single-blind studies.[20,21,49] Allocation concealment was appropriately carried out although this was more thoroughly described in MATISSE.[20,21]

The reviews' applicability is limited given the numerous case studies and qualitative studies and small sample sizes. Only MATISSE was adequately powered,[20,21] although the low participation rates rendered the secondary analysis underpowered.[48] Few studies provided a rationale for their choice of research design.[39,40,,47,50] The method of recruitment was not given in several qualitative and case studies,[40,42,43,45,47,50,51] and in Montag et al. randomisation was not clearly described.[49] Across the methodologies, the structure of the art therapy intervention was ambiguous or not described.[20,21,39,41,42,44,46]

'Consistency' was a significantly weak category for most case studies and for de Morais et al.[40] Limited,[46,50] or no[41,44,47] information was provided about analyses methods, making it difficult to identify whether analyses were reliably executed. Most case studies and qualitative studies made no attempt to involve other researchers to confirm the analysis.[42,45,47,51,52] Consistency was enhanced mainly in the qualitative studies through semi-structured interviews,[42,45,51-53] member checks,[43,51,53] and an audit.[43]

Reliability was generally strong in the quantitative papers. Cross-checking of the data occurred in a few.[20,21,39] In these latter studies and in Montag et al.,[49] regular supervision from art therapists was provided to intervention facilitators who were art therapists themselves.

'Neutrality' was the weakest quality category for qualitative and case studies, none of which reported reflexive monitoring. Teglbjaerg used a logbook though it was unclear whether this was used reflectively.[45] Only two studies commented on bracketing preconceptions.[51,53] Most case studies did not consider biases associated with researchers acting as the art therapists of the intervention.[41,46,50,53]

The quantitative studies were objective in reporting the significant and non-significant results, apart from de Morais et al.[40] Several quantitative and qualitative studies failed to consider potential biases associated with integrating art therapy with other psychotherapeutic or psychosocial interventions.

Participant Demographics

Across the reviewed studies, the recruited participants had diagnoses of schizophrenia, paranoid schizophrenia, schizoaffective, or bipolar disorder. Four studies included participants with mixed diagnoses, a proportion of whom had diagnoses of psychosis.[39-42] Across the articles there were a total of 299 male and 155 female participants. These figures excluded studies where gender demographics were unclear or not provided.[39-42,45] Most studies were conducted in the UK by the same authors.[20,21,43,46,48,50,52,54] The rest were conducted in Brazil,[40,42] Australia,[39] Norway,[53] Canada,[41] Serbia,[44] Germany,[49] Taiwan,[47] and Denmark.[45]

Treatment Mode

Study comparison was complicated because art therapy had different titles including art therapy or psychotherapy,[20,44,46,47,50] clay work or clay therapy,[40,42] creative activity group,[39] art gallery-based project,[43] psychodynamic art therapy,[41,49] expressive art therapy,[53] and formative art therapy.[45] Some of these titles reflected different theoretical orientations. Formative art therapy stemmed from expressive art therapy which considered art a means of understanding emotional, bodily, and psychotic experiences.[45,53] Alternatively, in analytical art therapy art enabled understanding of unconscious experiences.[45]

Therapists' orientation was infrequently stated or described. In MATISSE, art therapy was adapted according to participants' needs.[20,21] Over half the therapists in Patterson et al. were MATISSE therapists and the most common orientation was psychodynamic, with a minority adopting humanistic, psychoanalytic, or eclectic orientations.[51] This reflects the theoretical orientations of art therapists recorded in a national survey.[54]

Art therapy was often described in two stages; the focus was firstly on the process of creating art which then shifted to reflecting on its meaning usually in a group format.[43,44,46,47,49,50] Interventions varied in structure as sometimes participants initially learnt about art history and techniques,[43] reflected on their feelings,[45] or listened to music and poetry, and did movement therapy.[53] Some studies did not specify how art therapy was delivered.[39,41,42] Art therapy was sometimes incorporated with music therapy,[46,49] unspecified psychosocial interventions,[20,21] or psychotherapies.[39,49]

Twelve studies provided art therapy in a group format, and one provided both individual and group art therapy.[46] Patterson et al. identified that 94·4% of art therapists provided individual and 70·4% provided group art therapy.[54] Art therapy was delivered in open[42,44,50] or closed groups,[20,21] though most studies did not specify this. Art therapy was most commonly delivered in art studios in outpatient or inpatient settings. The length of art therapy varied between one and 14 months. The sessions generally occurred weekly for 1·5 to three hours. Some studies concluded that longer interventions were more suitable for participants with severe symptoms.[40,44,49]

The Effectiveness of Art Therapy

The RCTs investigated the effectiveness of art therapy by measuring symptoms of psychosis and global functioning as primary outcomes,[20,21,49] together with depression in one RCT.[49] Both RCTs measured quality of life and care satisfaction as secondary outcomes. Additionally, MATISSE measured social functioning, medication adherence, and well-being,[20,21] whilst Montag et al. measured mentalisation, self-efficacy, and locus of control.[49] The outcome measures in the lower quality studies included anxiety and depression,[39,40] quality of life, medical outcomes, and health.[39] The measures' reliability, validity, and standardisation for people with psychosis were not always described.[39]

Based on an intention-to-treat (ITT) analysis, MATISSE illustrated no significant differences in primary or secondary outcomes between trial arms, at 12 or 24 months.[20,21] The only significant difference was that at 24 months, people in the activity group had fewer positive symptoms than those in the art therapy group. The secondary analysis indicated no significant

symptomatic improvements for art therapy participants who had severe negative symptoms or a preference for art.[48]

Results in Montag et al. were based on the per-protocol sample because most dropouts were lost to follow-up.[49] When verbal IQ and gender were controlled for, at post-therapy and follow-up, the art therapy group had significantly greater improvements in positive symptoms and global functioning compared to TAU. At follow-up, negative symptoms decreased for the art therapy group and increased for TAU. There were no significant differences for depression. The only significant difference for secondary outcomes was a stronger emotional awareness of others following art therapy. In the ITT analysis, there was only a significant improvement in positive symptoms for the art therapy group, and a tendency for reduced negative symptoms.

Amongst the other studies, clay work resulted in statistically significantly decreased depression and lower but non-significant anxiety compared to not receiving therapy.[40] In Caddy et al., creative activity groups correlated positively with improved depression, anxiety, and stress. Large significant improvements in quality of life, health and distress, and moderate changes in vitality were reported.[39] These latter studies provided very weak evidence due to their poor design and quality. Considering the scarce studies and variable quality, this review provides preliminary though inconclusive evidence for the effectiveness of art therapy for people with psychosis.

The Meaningfulness and Acceptability of Art Therapy

In relation to the second research question, several themes regarding the meaningfulness and acceptability of art therapy were identified across the qualitative and case studies. The findings from poor quality studies were interpreted cautiously.

A common finding was that the art-making process enhanced people's ability to identify, express and explore their distressing emotions.[442,46,51,54] Through art, some expressed themselves at a deeper level than they usually would verbally.[46,53] Art therapy gave some the freedom to be creative in the absence of pressurised atmospheres where they feared being judged.[43,46,52] Art was a safe, containing way for people to focus their attention on something external, whilst making sense of internal experiences of psychosis.[42,46,50,51] This was not always considered an easy process because it triggered difficult memories.[42]

The creation of art and reflection on its meaning was believed to allow people to strengthen their sense of self.[41,42,45,50,51,53,54] Through self-expression, participants could connect with themselves and this helped them feel more alive.[51,53] This self-integration was enhanced through the groups' reflection on the symbolism and meaning of art.[46,50] Through art therapy, some participants distinguished what was real from what was not real and connected with their reality.[44,51]

Art therapy was reported to enhance participants' emotional well-being, self-confidence and self-esteem.[41-45,52] Some experienced achievements as they developed artistic skills.[43,44,54] Art therapy was believed to enhance psychosocial functioning as it encouraged engagement in meaningful social activities.[42,43,51,53] It decreased participants' isolation as they trusted, bonded, and communicated with group members.[43,44,50,53,54] Sharing similar experiences

helped participants feel less alone.[52,53] They felt valued, respected,[53] and accepted by the therapist.[51] Participants[52,53] and therapists[51] also valued the therapeutic relationship.

Increased self-awareness through art therapy allowed participants to understand their psychosis. For some, this contributed towards improved health[53] and management of daily problems.[45] The physical process of art-making was also considered soothing and distracted participants from their symptoms.[42,43,52]

The acceptability of art therapy was also considered in light of participant attendance. Most studies provided no information about rates or reasons for attendance or dropout, apart from two where most participants attended most sessions.[43,45] Attendance in MATISSE was low because 39% attended no art therapy sessions.[20,21] Those who consistently attended did so because they were committed and motivated about recovery.[52] People interested in art, who felt comfortable expressing themselves, attended more.[48]

The attrition rates in MATISSE were attributed to death, disinterest in art therapy, difficulty attending, and getting lost to follow-up.[20,21] In Montag et al. dropouts were mostly linked to unplanned hospital discharge. However, attendance was generally high with 59% and 66% of the art therapy group completing outcome measures at post-treatment and follow-up, respectively.[49]

Discussion

This review provided inconclusive evidence for the effectiveness of art therapy for people with psychosis. MATISSE indicated that art therapy was not clinically and cost effective in improving psychotic symptoms and functioning.[20,21] Conversely, the ITT analysis in Montag et al. showed that art therapy decreased positive symptoms for inpatients. The per-protocol results indicated significant improvements in functioning and negative symptoms.[49] These per-protocol results were consistent with earlier RCTs.[17,19] Other studies in this review investigating effectiveness added little weight to the evidence.

This review indicated that art therapy was experienced as meaningful and acceptable by clients and therapists. Most commonly, art therapy strengthened clients' emotional expression, self-awareness, self-esteem, and connection with themselves, their reality and social networks. Yet, this is based on small samples and few good quality qualitative studies, and requires cautious interpretation.

Clinical Practice and Future Research Considerations

The lack of robust research and discrepancy between the evidence regarding the utility of art therapy and the voice of clients and therapists, highlights a need for more rigorous studies. Several theoretical, clinical, and methodological issues that arose from this review may require consideration.

Definition of art therapy

Comparison across studies was difficult because art therapy had various theoretical approaches, definitions, titles, and structures, which were not always clearly defined. Similarly, another art therapy review identified that research was characterised by inadequate descriptions of art therapy approaches and structure.[55] A primary criticism of MATISSE was that the art therapy model, as well as therapists' theoretical orientations, were unspecified.[22] However it was recently clarified that despite variation in art therapy structure and orientation, art therapy was provided consistently with the BAAT principles.[56]

The variation in the reviewed articles may be linked to a wider ambiguity regarding art therapy.[57] A clear definition is important because art therapy is a 'complex intervention' consisting of several elements that interact with the environment and people engaging in it.[22,58] This raises the question of whether art therapy is based on a specific model[54] and defined clearly enough by the BAAT.[6] It is recommended that this definition is reviewed and that future researchers operationalise AT accordingly, to enable replication and application of results.[52] Furthermore, given that art therapy can be practiced in different ways, definitions of art therapy sub-types may be needed. Meta-analyses could then be carried out with a sufficient number of studies using an art therapy sub-type. The cultural diversity of reviewed studies also indicates the need to explore cultural variations in art therapy definitions, approaches and structures, and clients' experiences of this.

The mechanisms of art therapy

The influence of MATISSE remains undeniable given its size and power. However, it could be argued that it was conducted prematurely.[20,21] Springham and Brooker suggested that

RCTs are usually conducted at later stages when researchers understand how interventions work and what changes can be brought about by different aspects of it.[59]

Few studies in this review defined the mechanisms of art therapy and these were not easily named by art therapists.[51] Some identified that the mechanisms of change were the therapeutic relationships, therapists' role in containing individuals, the process of creating art, the final art products,[51,54] and group process.[50]

Whilst this review highlights several mechanisms of change, this requires further investigation. Robust qualitative research using interviews, focus groups, and multiple case studies, can increase insight into what participants believe elicits change. Indeed, according to the Medical Research Council, it is fundamental to first comprehend which processes underpin complex interventions through qualitative research.[60,61] Case studies can allow analytical generalisation, whereby individual cases are understood in the context of established theories.[62] Improved theoretical knowledge can then guide hypotheses of change mechanisms, quantitative research designs with larger samples,[60] and indicate how effectiveness can be measured.[63]

Outcome measures

Art therapists have described that outcomes of art therapy are obtained through processes that are both universal and varied. This may be influenced by individuals' needs and abilities, the therapeutic relationship, the creation of art, and by therapists' observations, reflections, and interpretations which are not necessarily shared with individuals.[51] These processes are not easy to measure objectively,[59] highlighting the difficulty in measuring change in art therapy.

The primary outcome measures in the two RCTs (symptoms of psychosis and global functioning) may not have been the most appropriate targets for art therapy,[28] or captured what participants found beneficial about it. There were also unclear clinical and theoretical rationales for using secondary outcome measures such as medication adherence and depression. In this review, through art therapy participants valued expressing themselves, re-connecting with themselves and others, and feeling confident, even if symptoms persisted. This is consistent with the focus of psychotherapy on changes in anguish, coping and satisfaction, rather than on symptom reduction.[70] Social functioning, well-being,[20,21] mentalisation, and self-efficacy[49] were secondary outcome measures in the RCTs and may warrant further research. It is recommended that these, together with self-confidence, and intra-personal connectedness are considered as outcome measures for art therapy.

Art therapy as a targeted or universal intervention

In this review it was unclear for whom art therapy specifically worked. Art therapy was uniquely experienced,[51] and therapists were pragmatic, adapting their approach to fit individuals' needs.[64] Therapists suggested that willingness to partake in art therapy predicted who found it beneficial, and not clients' diagnosis or clinical presentations.[51] Indeed, Patterson et al. indicated that participants were mostly referred to art therapy based on readiness to attend, ineffectiveness of previous therapies, and motivation.[54] Furthermore, MATISSE suggested that art therapy was ineffective because participants were unwilling to engage, resulting in high dropout rates.[20,21]

Holttum and Huet argued that even if those who attended found art therapy effective, this was lost to the ITT analysis.[22] An ITT analysis aims to reflect clinical practice where non-adherence to treatment is expected. An intervention's effectiveness is evaluated on *all* randomised participants, irrespective of whether they attended the intervention.[65] Follow-up results in MATISSE were based on over 85% of participants even though 39% attended no art therapy sessions.[20,21] Therefore, any dose effect may have been diluted. With such high dropout rates, carrying out additional per-protocol analyses may have been desirable,[66] as in Montag et al.[49] Patterson et al. acknowledged that this may have elicited different findings in MATISSE.[56] Despite the limitations of a per-protocol analysis, it can still be a relevant alternative in the case of interventions like art therapy, which while offered to all participants, may not be accepted by everyone. This is relevant because this review indicated that those who engaged in art therapy, seemed to benefit from it.

Recruitment of all people with psychosis for research is important, if we assume that art therapy should be offered to everyone.[5] However, also conducting analyses with people specifically willing to engage in art therapy may indicate whether this subgroup is more likely to benefit,[51] and how to adapt the intervention accordingly.[61] Such evidence may allow clients to receive their treatment of choice, clarify art therapy referral criteria, and increase services' understanding of art therapy.[67] This may fit better with clinical practice by preventing participants from being randomly allocated to treatment arms they are unmotivated to attend. This is important for people with psychosis who may not engage with all treatments,[68] or may disengage from services due to their psychotic symptoms.[69]

Intervention design

Generally, greater statistical power is needed to identify smaller changes between groups and to minimise risks of type II errors. Furthermore, the small group sizes in some studies may have restricted participants' opportunities to explore their images with others.[21,43,49] Future RCTs may need to carefully consider the development of art therapy groups which can have complex dynamics. In clinical practice, members are often individually engaged to develop a therapeutic relationship before the group commences. This preparation can enable integration into the group which may be important for people with negative symptoms or social anxiety.

Several studies conducted art therapy with psychosocial or psychotherapeutic interventions, making it difficult to disentangle art therapy's influence from other interventions. Addressing this in future research can increase the validity of results. The appropriate duration of art therapy remains unclear because interventions ranged from one to 14 months and effectiveness emerged in shorter interventions.[49] Several studies recommended longer interventions for people with severe difficulties. Intervention length may be associated with degree of distress suggesting that longer interventions can facilitate engagement with art-making.[71] This may allow long-term changes (e.g. in quality of life) to be observed.[49]

Ensuring inclusion of regular follow-up periods in research may illuminate the sustainability of changes elicited through art therapy, which was not captured in the reviewed papers. Follow-ups in some studies[17,19,49] were much shorter than the yearly follow-ups in MATISSE.[20,21] Art therapy gains in MATISSE may have become extinguished after one and two years and short-term improvements may have been missed.[48] It is suggested that effectiveness is investigated by collecting outcome data at regular intervals,[21] such as pre, mid, and post intervention; this can provide an immediate measure of change.

Review Limitations

Several studies written in languages other than English were excluded which limited the generalizability of the findings. Additionally, the consideration of different psychotic diagnoses under the term 'psychosis' may have overseen unique differences within this population. This review included three studies with mixed populations to avoid the exclusion of studies with participants with psychosis. However, their relevance to the review was restricted due to small sample sizes and they had to be treated cautiously. Furthermore, qualitative results had to be interpreted tentatively due to small numbers and only four good quality articles. The quality of each study was rigorously evaluated through the multi-method quality framework and the quality ratings were calibrated. Further validation of this framework is needed to enable its development and future use.

Conclusions

Evidence for the effectiveness of art therapy in symptom reduction and functioning for people with psychosis remains inconclusive. However, discounting the use of art therapy may rob this population of an intervention which qualitative studies indicate is suitable and meaningful. The discrepancy between the evidence for effectiveness and service users' and clinicians' experiences, highlights a gap in the theoretical understanding of how, why, and for whom art therapy works and how this can be researched. This review sustains that investigating the effectiveness of art therapy through RCTs is necessary to economically and ethically support its delivery.[72] Indeed, NICE recommended more high quality trials.[5] RCTs should be conducted in light of qualitative research to build upon and verify the qualitative literature reviewed. Ethnographic research and interviews can illuminate individuals' experience of image-making, and whether and how art therapy helps them. This can increase

theoretical knowledge of AT[59] and highlight measurable outcomes,[54] which can guide controlled research.

Contributors

Authors AA and ML designed the manuscript. AA conducted the systematic literature search, the data extraction, data analysis, and the data interpretation, and also wrote first draft of the manuscript. Author ML provided important intellectual input to the drafting of the manuscript, as well as feedback on the data extraction and cross-checking of the quality evaluation of the articles. Both authors contributed to and have approved the final manuscript.

Conflict of interest

We declare that we have no relevant conflict of interests.

Acknowledgements

The authors would like to thank Dr Neil Springham for offering comments on the rationale and relevance of this manuscript in the field of psychosis and art therapy. Thanks also go to Dr Neena Ramful for providing support in piloting the quality framework and calibrating the reviewed studies.

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Panel 1: Search strategy

We searched seven electronic databases for original articles published in English from the year 2007 onwards. These were Embase, Medline, Psychinfo, Psycarticles, Web of Science, CINAHL Plus (EBSCO), and ERIC ProQuest. Further searches through reference lists and Google scholar were also carried out which elicited two additional papers. We used the search terms “art therap*” OR “art psychotherap*” OR “creative art psychotherap*” OR “creative art therap*” AND “schizophrenia” OR “psychosis” OR “psychotic” OR “psychiatric”. We did our first search on September 3, 2014 and our last search on May 16, 2016.

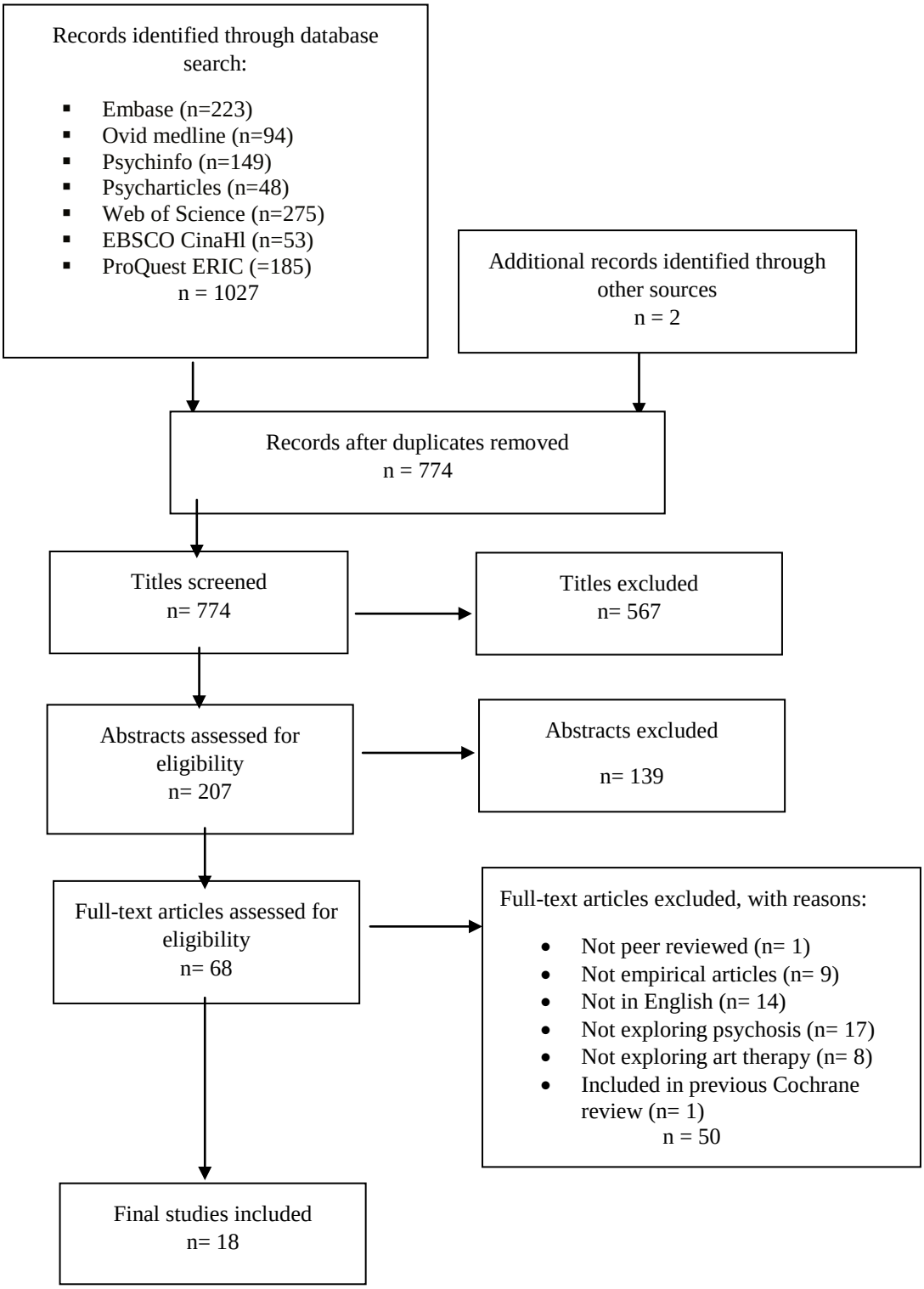

Figure 1. Flow diagram for included and excluded articles

Table 1. Data Extraction of Final Studies

Authors, Year, Country	**Type of Study**	**Study Aims**	**Participants**	**Methodology**	**Analysis**	**Results: The acceptability and meaning of** art therapy	**Results: The effectiveness of** art therapy
Crawford, Killaspy, Kalaitzaki, Barrett, Byford, Patterson et al. (2010) Crawford, Killaspy, Barnes, Barrett, Byford, Clayton, et al. (2012) United Kingdom	3-arm Randomised Control Trial	To investigate how health and social functioning of people with schizophrenia is impacted through art therapy, compared with an activity group and standard care alone. To examine differences in engagement and benefits between groups and cost effectiveness of art therapy.	417 participants with schizophrenia. 140 people were randomly allocated to the art therapy group with standard care, 140 people to the activity with standard care group and 137 people to the standard care alone group.	Weekly art therapy, activity or standard care alone groups took place for one year. Primary outcomes were functioning (Global Assessment of Functioning scale), and psychotic symptoms (Positive and Negative syndrome scale) at two years. Secondary outcomes were functioning and symptoms at one year, and attendance, functioning, medication adherence, satisfaction, well-being and quality of life at one and two years.	An intention-to-treat (ITT) analysis took place. An ANCOVA examined group differences, and controlled for outcome, site, sex and age. The same was done for secondary outcomes. A secondary analysis, a two and three level heteroscedastic model, and a two stage least squares estimate were carried out.	Nearly 40% of the art therapy group did not attend. A few attended regularly though this did not influence outcomes. Art therapy attendance was better than activity group attendance. For both groups, the main dropout reasons were death, withdrawal and getting lost to follow-up. Withdrawal occurred because participants were not interested in attending or found it difficult to attend.	At two years follow-up there was no significant difference between groups for primary outcomes, though those in the activity group had less positive symptoms that those in art therapy. At one and two years, there were no significant differences in secondary outcomes. Art therapy had no clinical advantage and was not more cost-effective.
Leurent, Killaspy, Osborn, Crawford, Hoadley, Waller, & King (2014) United Kingdom	Secondary analysis of the MATISSE RCT	To re-analyse the MATISSE results and examine differences in the effectiveness of subgroups in art therapy and standard care. The characteristics explored were gender, treatment compliance, interest in art, comfort with emotional expression and time since referral.	MATISSE included participants in standard care (n= 137), art therapy and standard care (n= 140) and activity group and standard care (n= 140). This study considered the art therapy and standard care group.	MATISSE involved weekly groups over 12 months. Primary outcomes were functioning and mental health symptoms. Secondary outcomes were: functioning and symptoms measured at 12 months, and attendance, social functioning, medication adherence, care satisfaction, well-being and quality of life measured at 12 and 24 months.	Through an ITT analysis, groups were compared on interest in art therapy and symptoms at 12 months using a mixed-effect linear model. The intervention effect was investigated by stratifying by subgroup and examining the effect of interaction or continuous variables. Differences in attrition were compared.	There were no significant differences between groups in rates and reasons for attrition. Only site of recruitment was relevant. Art therapy attendance was poor because 39% attended no sessions and in a year, the average attendance was 11 sessions. Although non-significant, a prior interest in art and comfort sharing emotions influenced attendance positively.	There was no significant difference in the effectiveness of art therapy on symptoms of psychosis between subgroups who had more or less negative symptoms of psychosis or interest in art therapy. There were no significant differences in any of the other subgroup analyses.
Montag, Haase, Seidel1, Bayerl1, Gallinat, Herrmann, & Dannecker (2014) Germany	Pilot Randomised Control Trial	To investigate the efficacy of psychodynamic Art therapy for people in acute psychosis, on symptoms, functioning, mentalising abilities, self-efficacy, care satisfaction and quality of life.	There were 58 inpatients with schizophrenia. Following randomisation, 29 received art therapy with treatment as usual and 29 received treatment as usual, which excluded art activities.	Twice weekly groups for six weeks occurred. Primary outcomes were symptoms (Scale for the assessment of negative/positive symptoms), depression (Calgary depression scale for schizophrenia), and functioning (Global assessment of functioning scale). Secondary outcomes were mentalisation, self-efficacy, locus of control, quality of life, and care satisfaction.	The analysis was based on the per-protocol sample. Differences between group demographics and illness was investigated through T- and Chi2-tests. ANCOVA compared primary outcomes at post-treatment and follow-up, whilst controlling for baseline ratings, verbal IQ and gender. An ITT analysis of primary outcomes was also carried out.	The data at six weeks were based on 59% of participants from art therapy and 69% from treatment as usual. At 12 weeks follow-up, the data were based on 55% of participants in art therapy and 66% in treatment as usual. Reasons for dropout related to unplanned discharge and practical difficulty attending groups. Apart from this, those in art therapy had good attendance.	The per-protocol sample results showed that the art therapy group had a significant decrease in positive symptoms and functioning at post-intervention and follow-up, and in negative symptoms at follow-up. There were no significant changes in depression. In the ITT, art therapy had improved positive symptoms at post-treatment and a lower trend in negative symptoms.

Authors, Year, Country	**Type of Study**	**Study Aims**	**Participants**	**Methodology**	**Analysis**	**Results: The acceptability and meaning of** art therapy	**Results: The effectiveness of** art therapy
Patterson, Debate, Anju, Waller, & Crawford (2011b) United Kingdom	Survey design	To describe the availability, accessibility, structure, delivery and content of art therapy for people with schizophrenia in the NHS. To explore art therapy views of how AT may support people with schizophrenia.	71 art therapists were randomly recruited from 27 NHS Trusts.	A questionnaire was piloted and developed by considering literature, organisational policies and experiences of art therapists. The closed and open questions related to the assessment process, outcome measures and art therapy mechanisms. Therapists rated their level of agreement on statements about the benefits of art therapy using a 5-point Likert scale.	Simple descriptive statistics investigated how many agreed with the questionnaire items. Univariate statistics indicated associations between therapist traits, type of practice and views of working with other professionals. Open-ended questions were analysed through thematic analysis though these results were not reported.	Most therapists used a non-directive approach and believed that art-making and reflection were fundamental parts of art therapy. This enhanced self-understanding, control, expression and conflict resolution. Acquiring new skills was not a key aspect of art therapy. Therapists stated that this population had limited access to art therapy. Less than half thought it was not well integrated with services, albeit valued.	N/A
Caddy, Crawford, & Page (2012) Australia	Non-experimental, non-randomised	To explore changes in mental health across a five year period for inpatients who took part in art and craft creative therapy groups in a private hospital.	Existing de-identified data was used of 403 patients who participated in at least six sessions and attended no other therapy groups. Most had a diagnosis of depression, bipolar or other mood disorders. 14·1% had a diagnosis of schizophrenia.	The creative activity group was attended by 16 patients daily. It involved art, craft and expressive projects which addressed patients' issues. Changes were measured using the Depression and Anxiety Stress Scale (DASS-21), Quality of Life Enjoyment and Satisfaction (Q-LES-Q), Medical Outcomes Short Form (SF-14) questionnaires and Health of the Nation Outcome Scale (HoNOS).	Data were analysed using descriptive and inferential statistics to investigate the correlations between mental health outcomes and participation. Paired t-tests were used to identify whether there were significant changes in measures from admission to discharge.	N/A	Participation positively correlated with better mental health from admission to discharge, with moderate to strong effect sizes. The largest, statistically significant improvement was on the HoNOS. Large effect sizes were observed on the Q-LES-Q and DASS-21 Depression and Anxiety subscales. Moderate effect sizes were observed on the Stress subscale and the SF-14.
De Morais, Dalecio, Vizmann, Bueno, Roecker, Salvagioni, & Eler (2014) Brazil	Mixed Methods design: Non-randomised controlled study and qualitative interviews	To investigate the effect of a clay work group on levels of depression and anxiety amongst inpatients in a day hospital compared with patients who did not receive therapy.	There were 24 participants: 12 in the control group and 12 in the clay work group. They had various diagnosis such as depression, bipolar, anxiety, dementia, schizophrenia and psychotic disorder.	Each group received eight weekly clay therapy sessions. In the clay group participants described their sculptures and feelings. The Beck Depression Inventory and Spielberger State-Trait Anxiety Inventory were completed. Interviews took place to explore how participants felt about their art. It is unclear when the interviews occurred and if everyone was interviewed.	The hospital psychologist who was not involved in the research, administered and interpreted the results of the measures. The Mann–Whitney test was used to compare the scores between the groups. No information was provided about the qualitative analysis.	Interview extracts suggested that some found clay work enjoyable and relaxing and it helped them to reflect. It was unclear whether these quotations appertained to participants who had schizophrenia. Two participants attended half the clay work sessions and were excluded from the analysis. Their dis-engagement was attributed to the clay work being overwhelming.	Therapy using clay improved depression compared to receiving none at all. The clay work group had mild depression on average and the control group had moderate depression. The difference was statistically significant. The clay work group had lower anxiety though this was not statistically significant.

Authors, Year, Country	**Type of Study**	**Study Aims**	**Participants**	**Methodology**	**Analysis**	**Results: The acceptability and meaning of** art therapy	**Results: The effectiveness of** art therapy
Teglbjaerg (2011) Denmark	Qualitative study	To understand whether and how art therapy effects the mental health of people with schizophrenia and whether patients with nonpsychotic and psychotic disorders use art therapy differently.	There was one group of five outpatients with schizophrenia and one comparison group of five nonpsychotic patients with depression and/or personality disorders.	Participants attended weekly, formative group art therapy for one year. They were interviewed before, immediately after therapy and at one year follow-up. Interviews concerned experiences of mental illnesses, life, relationships, and art therapy. Data were gathered from logbooks, participants' art and evaluation forms.	Modified grounded theory was carried out. This included four analysis levels: giving a narrative description of therapy, identifying themes, comparing participants' themes to the research questions and evaluating whether they were answered.	Both groups found art therapy helpful, even at follow-up, and all attended. The main benefit was a strengthened sense of self as they expressed themselves, problem solved, socialised, felt confident, felt included, and less paranoid. Those with schizophrenia achieved these benefits by using art to become present, to find meaning, connect with themselves and others and to become creative.	N/A
Patterson, Crawford, Ainsworth & Waller (2011a) United Kingdom	Qualitative study	To understand the process and outcomes of art therapy (i.e. what changes, how it changes and for whom) based on the experience of art therapists, and to improve provision of art therapy.	24 art therapists were recruited. There were three key informants (art therapists from MATISSE); 14 MATISSE art therapists (who delivered or supervised art therapy); and seven non-MATISSE therapists.	Over 20 months, interviews and focus groups took place. Questions addressed the nature, process and outcomes of art therapy, therapists' understanding of schizophrenia and their concerns. 33·3% of the therapists substantiated the interviews with documents (e.g. publications).	Grounded theory was carried out using constant comparative method and 3 levels of coding; Initial coding to identify descriptive codes; Focused coding to group codes into themes; Theoretical coding to identify categories. The documents were analysed primarily through theoretical coding.	Art therapy was considered valuable for this client group. Therapists' role, the therapeutic relationship, art making and group were believed to increase expression, well-being, identity and acceptance. Willingness to engage was beneficial. What made art therapy helpful was unclear but it entailed an interaction between therapists, clients, and art. The art therapy referral criteria were unclear.	N/A
Patterson, Borschmann & Waller (2013) United Kingdom	Qualitative study	To understand the experiences of participants who received AT in MATISSE, to understand who to refer to AT, how to evaluate its effectiveness, and the degree of generalisability of MATISSE results.	There were 19 trial participants diagnosed with schizophrenia and four participants who took part in a separate focus group at 12 months follow-up.	Interviews lasted 20 to 90 minutes and explored their reasons for participating, and response to the allocation and intervention. Key workers or partners were present in some interviews. Trial data, field notes and the experiences of therapists as presented in Patterson, Crawford, Ainsworth and Waller (2011), were considered.	A constructive grounded theory approach was used which involved constant comparison and multi-level coding strategies, in line with the analysis method outlined in Patterson, Crawford, Ainsworth and Waller (2011).	Some participants did not attend MATISSE because they were not interested in art therapy. Those who dropped out were not motivated and disliked group work. The 6 who attended enjoyed the social and therapist contact, and art. They experienced 'no change' or specific change. A few gained confidence, achievements, felt accepted and not judged.	N/A

Authors, Year, Country	**Type of Study**	**Study Aims**	**Participants**	**Methodology**	**Analysis**	**Results: The acceptability and meaning of** art therapy	**Results: The effectiveness of** art therapy
Colbert, Cooke, Camic & Springham (2013) United Kingdom	Qualitative study	To explore whether reflection through paintings in an art-gallery with staff improves clients' personal narratives of psychosis, well-being, and social inclusion and creates new community narratives about psychosis.	Five men and two women were clients with a diagnosis of psychosis. There were two female gallery-staff, one female art therapist and two NHS staff (one male and one female)	Two groups took place for four weeks each. The first part was spent in the art gallery where paintings and their meaning were discussed and participants could sketch. They then moved to the art studio and created and reflected on more art that they produced. Interviews after four weeks explored participants' experience of the group and their well-being.	A literary context narrative analysis was used to understand the thoughts, aims, language and themes in the narratives. A social context narrative analysis explored dominant, personal stories of psychosis and whether community narratives developed.	Some participants changed their dominant personal narrative of psychosis. A new community narrative was developed. This identified the staff-client relationship as validating, amicable and honest. The group improved recovery, social inclusion, and well-being. Five clients attended all or most sessions and were accompanied by the staff.	N/A
De Morais, Roecker, Jodas, Denise, & Eler (2014)	Qualitative study	To understand the significance of clay art therapy for psychiatric patients who attend a day hospital.	Seven out of 16 participants had a diagnosis of schizophrenia or schizo-affective disorder.	Two open groups took place. Participants attended at least seven clay therapy sessions. Semi-structured interviews were used to ask open questions about participants' experience before, during, and after the clay therapy sessions.	The data were analysed using content analysis. This included the ordering and classification of data into final themes. No further information about this was provided.	Clay therapy increased participants' creativity and self-awareness and reduced their emotional distress. Some remembered their past and could explore difficult feelings more easily. For others it triggered difficult memories, feelings, and symptoms. Yet, it was mostly considered helpful in improving their relationship with themselves and others.	N/A
Drapeau & Kronish (2007) Canada	Case Report	To investigate the benefits and clinical effectiveness of a creative art therapy group program for outpatients with psychiatric disorders by exploring vignettes of sessions.	There were 26 psychiatric outpatients with various diagnoses such as depression, schizophrenia, schizoaffective, dissociative, borderline, and bipolar disorders.	Psychodynamic art therapy groups were provided for just over one year. Each group met for 12 weeks. The sessions were bilingual, in English and French. No data collection method was specified.	No analysis method was specified. Changes in participants' psychological well-being were discussed and a comparison was made of the meaning of the drawings they created in earlier and later sessions.	Drawings enabled clients to express and explore their issues. Sharing drawings with others increased their self-acceptance and understanding. Drawings helped clients to connect with reality, trust others, deal with loss and socialise. It improved their self-esteem, quality of life, and humour. No information about attendance was provided.	N/A

Authors, Year, Country	**Type of Study**	**Study Aims**	**Participants**	**Methodology**	**Analysis**	**Results: The acceptability and meaning of** art therapy	**Results: The effectiveness of** art therapy
Banks (2012) United Kingdom	Case Study	To explore the progress, development and role of art therapy in a male low secure ward, to explore how art can build safety and security and how violence can be understood through the meaning of the images.	One man with a diagnosis of paranoid schizophrenia, which was triggered by drug misuse.	He attended individual and group art therapy (which also included music therapy) and a recovery group (which included art making) for 12 months. He co-created an audio image recording, and took part in an end of therapy interview where he reflected on art making using two images.	The author chose 11 key images and audio image recordings which were thought to enhance the client's reflection and understanding of his violence. These were used to describe the model of art therapy provided and the client's experience. No analysis method was described.	The participant found that art improved his emotional expression, hopes, and alleviated his worries. It provided containment and security. The non-judgemental atmosphere strengthened the therapeutic relationship. Through the meaning of his art, his sense of self strengthened as he linked his inner and outer experiences and made sense of his anger and life.	N/A
Michaelides (2012) United Kingdom	Case Report	To explore how art therapy groups help a client with schizophrenia who has a poor reflective functioning ability and whether it is a safe way of exploring mental states and improving reflective functioning.	A case study of one male participant diagnosed with schizophrenia who was functioning at a negative reflective functioning level.	An open art therapy group ran for 14 months. Clients with different diagnoses attended. Following art creation, the group discussed their drawings. Observations took place of the case study's level of engagement, involvement in the group discussions and the nature of drawings produced.	No analysis method was described. Changes in the participant's presentation were discussed as well as changes in the imagery produced, with emphasis on the 2nd, 4th and 32nd sessions.	Art therapy was acceptable for the client with negative symptoms. He moved to stages of 'identification' and 'familiarisation' and possibly also 'acknowledgement' as his reflective functioning improved. He became interested in the group and his art was a means of expression. The group's reflection gave him a voice and allowed him to connect with himself.	N/A
Gajic (2013) Serbia	Case Report	To present the clinical observations of two clients with schizophrenia who attended an AT group in a day hospital and to investigate their health and functioning at admission and discharge.	One female with paranoid schizophrenia and one male with schizophrenia.	Weekly art therapy sessions occurred over two months. Participants created drawings and reflected on them. At admission and discharge the Clinical Global Impression Severity (CGIS) and Global Assessment of Functioning (GAF) scales were completed and the Clinical Global Improvement (CGI-I) Scale was completed at discharge.	The researcher together with the group therapists conducted a qualitative analysis of the drawings' form and content and the group therapy protocols. Details about this analysis were not provided.	The participants were regular attenders. Art therapy was considered useful for schizophrenia. It enhanced creativity, self-esteem and self-confidence. The group provided validation, support, security, acceptance, social connection and expression. The participants appeared less preoccupied by psychosis following their engagement in art therapy.	For both participants, minimal improvement was shown on the CGIS and GAF from admission to discharge, and on the CGI-I. These minimal improvement in functioning and health were attributed to participants having severe psychosis and therefore requiring a longer intervention.

Authors, Year, Country	**Type of Study**	**Study Aims**	**Participants**	**Methodology**	**Analysis**	**Results: The acceptability and meaning of** art therapy	**Results: The effectiveness of** art therapy
Havenik Hestad, Lien, Teglbjaerg, & Danbolt (2013) Norway	Multiple Case Study	To describe the course and usefulness of an expressive art therapy group for women with psychotic diagnoses. To understand how and why art therapy aids in exploring psychotic experience and improving coping.	There were five female participants with various psychotic diagnoses which were bipolar disorder, schizoaffective disorder, schizophrenia and paranoid psychosis.	The group met weekly for nine months in the psychiatric hospital. The start of the group included music, poetry and movement therapy, after which three art modalities were used to explore psychosis and its meaning. Observations of the therapeutic process were made and interviews were carried out at eight months follow-up.	Participants' situation before and after art therapy was analysed through group notes and interviews using a modified 7-step method for case studies. This included: literature searching, analysing the different information sources, time-series analysis, pattern matching, and member checking.	All the participants felt able to explore psychosis, express themselves, gain awareness and feel alive. Two gained control as they cognitively reinterpreted psychosis. All learnt how to cope and felt valued though how this occurred was unclear. Spiritual and existential themes were common. Participants felt able to interact with and support each other safely.	. N/A
Hung & Ku (2015) Taiwan	Case Report	To present the cases of two patients with schizophrenia who received semi-structured art therapy.	Patient A: a 19 year old, female diagnosed with schizophrenia 4 years ago. Patient B: a 37 year old patient diagnosed with schizophrenia 10 years ago.	Semi-structured art therapy was provided four times a month. A photo card collection was used to guide what images the patients could draw, after which they reflected on their images. The Positive and Negative Syndrome Scale (PANSS) and Assessment of Negative Symptoms (SANS) were completed at two times points.	Analysis was carried out of the patients' clinical symptoms, psychosocial issues, and the images they produced. No additional detail about the analysis was provided.	Improvements in PANSS and SANS scores were attributed to a motivation to attend art therapy. Authors concluded that the younger patient was more likely to share stories of her images, compared to the older patient.	After a month, Patient A showed an improved PANSS score from 90 to 65 and SANS score from 69 to 45. Patient B showed an improved PANSS score from 114 to 92 and SANS score from 94 to 69.

Table 2. Summary of Quality of the Studies

Authors	Truth Value	Applicability	Consistency	Neutrality	Overall Quality Rating (Average score)
Quantitative Studies					
Crawford, et al. (2010) Crawford, et al. (2012)	5	5	5	5	Good (5)
Montag, et al. (2014)	4	4	6	5	Good (5)
Leurent, et al. (2014)	5	5	5	5	Good (5)
Non-Experimental Study					
Patterson, et al. (2011b)	3	4	5	4	Moderate (4)
Caddy, et al. (2012)	4	3	5	4	Moderate (4)
Mixed Methods Study					
De Morais, et al (2014)	1	2	2	1	Poor (2)
Qualitative Studies					
Teglbjaerg (2011)	2	3	3	1	Poor (2)
Patterson, et al. (2011a)-	6	6	5	4	Good (5)
Patterson, et al. (2013)	6	5	4	2	Good (4)
Colbert, et al. (2013)	5	4	6	3	Good (5)
De Morais, et al (2014b)	3	3	3	1	Moderate (3)
Case Studies					
Drapeau & Kronish (2007)	1	2	1	1	Poor (1)
Banks (2012)	3	3	2	1	Poor (2)
Michaelides (2012)	3	3	3	1	Moderate (3)
Havenik, et al. (2013)	5	4	4	5	Good (5)
Gajic (2013)	3	2	2	1	Poor (2)
Hung & Ku (2015)	1	1	1	0	Poor (1)

The Effectiveness and Meaningfulness of Art Therapy in the Treatment of People with Psychosis: A Narrative Review of the Literature

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Abstract

This narrative review examines the effectiveness of Art Therapy (AT) for people with psychosis and explores whether art therapy is a meaningful and acceptable intervention. Seven electronic databases were searched for empirical papers that concerned the use of art therapy with adults with psychosis that were published from 2007 onwards. The search identified eighteen papers. The highest quality quantitative articles provided inconclusive evidence for the effectiveness of art therapy. The highest quality qualitative articles indicated that therapists and clients considered art therapy to be a beneficial, meaningful, and acceptable intervention, although this was based on limited studies. There is a discrepancy between the quantitative evidence regarding art therapy effectiveness and the qualitative evidence highlighting the value given to it by clients and therapists. Theoretical, clinical, and methodological issues are discussed in light of the development of more robust research, which is needed to corroborate individuals' experiences and guide evidence-based practice.

*Keywords***:** Psychosis; Art Therapy; Effectiveness; Suitability

Literature Overview

Psychosis and schizophrenia can have a debilitating impact on people's lives and mortality.[1] Pharmacotherapy is a primary treatment for schizophrenia, though its effectiveness can be limited and undermined by its side effects.[2] People may become treatment resistant[1] and continue to experience symptoms together with psychological, social, and functional difficulties.[3] Therefore, NICE highlights the need for psychological therapies to be offered in conjunction with medication to support individuals with psychosis and schizophrenia through their recovery.[4]

In addition to Cognitive Behavioural Therapy (CBT) and family intervention, arts therapies are recommended, particularly for people with negative symptoms. NICE identifies that arts therapies include *"art therapy or art psychotherapy, dance movement therapy, body psychotherapy, drama therapy and music therapy"* (p. 217).[5] These arts therapies seek to enhance individuals' creativity, emotional expression, communication, insight, and ability to relate to themselves and others.[5] They should be delivered by arts therapists registered with the Health and Care Professions Council who have worked with people with psychosis .[5]

The use of art therapy specifically, with people with psychosis, is the main focus of this narrative review. According to the British Association for Art Therapy (BAAT), art therapy is defined as "*a form of psychotherapy that uses art media as its primary mode of expression and communication*" to support people in distress.[6] This primarily involves using art media in a group or individual setting.[6] Throughout this review art therapy is understood in line with this explanation of art therapy.

Art therapists have advocated for art therapy to be used with this client group routinely. Negative psychotic symptoms may hinder people's ability to identify and explore their experiences.[7] People with schizophrenia often have difficulties with identifying their own or others' mental states[8] and may withdraw socially.[9] Art therapy has a longstanding role in facilitating engagement when direct verbal interaction becomes difficult.[9,10] Art is considered a mediator (between the person with psychosis and therapist) which offers a safe, indirect means of connecting with oneself and others.[9,11] People with psychosis may also experience blurred boundaries between their internal and external worlds which can feel overwhelming.[12] Art therapy enables people to express and project their emotional, cognitive, and psychotic experiences onto their art, and process them at a pace that feels comfortable to them.[9,12] Furthermore, art therapy commonly occurs in group settings where art is a communal means of self-expression; this can increase individuals' sense of belonging.[7]

This support for the helpfulness of art therapy is rooted in theory and clinical experience and is weakly substantiated by rigorous, controlled research. National guidelines on the treatment of specific conditions, are based on the highest quality scientific evidence, which includes Randomised Control Trials (RCTs) and systematic reviews which have at least one RCT.[13] By comparison, studies which use cohort, case-control, cross-sectional, or single case designs are considered to provide weaker evidence.[14]

The effectiveness of art therapy is primarily established through RCTs. In an early Cochrane review, the lack of RCTs prevented conclusions from being drawn about the effectiveness of art therapy for people with schizophrenia.[15] Nevertheless, the two reviewed studies[16,17] contributed to the 2009 National Institute for Clinical Excellence (NICE) guidelines, which

indicated that arts therapies (including art therapy), can enable recovery especially for people with negative symptoms.[18]

Green and colleagues found that a ten-week art therapy outpatient group demonstrated significant gains in social interaction and self-esteem when compared to Treatment As Usual (TAU).[16] Richardson and colleagues explored the effect of a 12-week art therapy outpatient group compared to TAU.[17] Despite an underpowered sample and high dropout rates, there was a statistically significant decrease in negative symptoms for the art therapy group post-intervention and at follow-up. Another RCT showed that a 15-week art therapy group significantly improved mental health, quality of life, and functioning amongst inpatients with psychosis compared to TAU.[19] Recently, these outcomes have been contradicted by the largest 3-armed RCT, the MATISSE trial.[20,21] This has provoked a wave of clinical and academic responses and concerns regarding the future of art therapy for people with schizophrenia.[22,23]

The growing interest in art therapy is also evident through recent systematic reviews. These evaluated some schizophrenia literature, however, without synthesizing it comprehensively. Slayton and colleagues reviewed the general effectiveness of art therapy within clinical and non-clinical populations from 1999 to 2007. They concluded that art therapy was effective but did not specify for which clinical populations or how it was effective.[24] Van Lith and colleagues reviewed the implications of art-based practices on recovery and concluded that this aided social and psychological recovery.[25] The articles that focused on schizophrenia were dated 2009 or earlier though in some, the interventions focused on skill development

and were not facilitated by art therapists.[26,27] The most recent RCT review also highlighted the benefit of art therapy though referred to a range of client groups.[28]

This review builds upon and addresses gaps in the latter reviews by specifically focusing on research regarding art therapy and people with psychosis from 2007 onwards. It aims to firstly report on the effectiveness of art therapy as an intervention for people with psychosis in comparison to any control group and outcome measure. Secondly, it aims to understand whether art therapy is suitable and meaningful for this population from the perspective of service users and art therapists by including all research methodologies.

Methodology

Search Strategy and Selection Criteria

A thorough systematic literature search was conducted (see Panel 1). The main search terms used were 'art therapy' and 'psychosis'. The term 'art therapy' was operationalised in line with the BAAT definition.[6] The term 'psychosis' was an umbrella term used for a cluster of psychotic disorders such as, schizotypal and schizoaffective disorders, in accordance with the NICE[29] guidelines for schizophrenia and psychosis, and the British Psychological Society.[30]

Panel 1 Search Strategy to go here

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Panel 1: Search strategy

We searched seven electronic databases for original articles published in English from the year 2007 onwards. These were Embase, Medline, Psychinfo, Psycarticles, Web of Science, CINAHL Plus (EBSCO), and ERIC ProQuest. Further searches through reference lists and Google scholar were also carried out which elicited two additional papers. We used the search terms "art therap*" OR "art psychotherap*" OR "creative art psychotherap*" OR "creative art therap*" AND "schizophrenia" OR "psychosis" OR "psychotic" OR "psychiatric". We did our first search on September 3, 2014 and our last search on May 16, 2016.

Figure 1 illustrates that the search elicited 774 papers. Author AA screened these by title, abstract, and full-text, whilst author ML assessed a sub-sample of these papers for their suitability based on the inclusion and exclusion criteria. Articles were omitted if they were published earlier than 2007, unavailable in English, not empirical papers, and did not focus on art therapy or adults with psychosis. Articles which primarily concerned drama, music, and dance therapy were excluded. Papers were included from 2007 onwards to build on the last Cochrane review which reviewed RCTs published till 2007,[15] and on later systematic reviews which did not review literature in art therapy and psychosis published from 2007 onwards.[24,25,28] The effectiveness of art therapy was considered in comparison to any control groups or TAU and no restriction was put on the outcomes measured. Quantitative and qualitative research carried out in all settings was included.

The full-text screening revealed that interventions were sometimes ambiguously defined making it difficult to distinguish between art psychotherapy and the use of art for enjoyment and artistic skill acquisition. Following discussion with a consultant art therapist, it was decided that for these studies, a reliable indicator of the provision of art therapy was the involvement of registered art therapists as intervention facilitators or supervisors. This ensured that only studies exploring art therapy were reviewed.

Eighteen papers were included in this review. The recently reviewed papers relating to the MATISSE trial were included to evaluate them in light of the wider research.[22] The papers by Crawford were presented together and referred to as 'MATISSE'.[20,21] This review did not

follow the PRISMA statement for systematic reviews given the varied methodologies and quality of the papers which required a more narrative synthesis.

Figure 1. Flow diagram for included and excluded studies to go here

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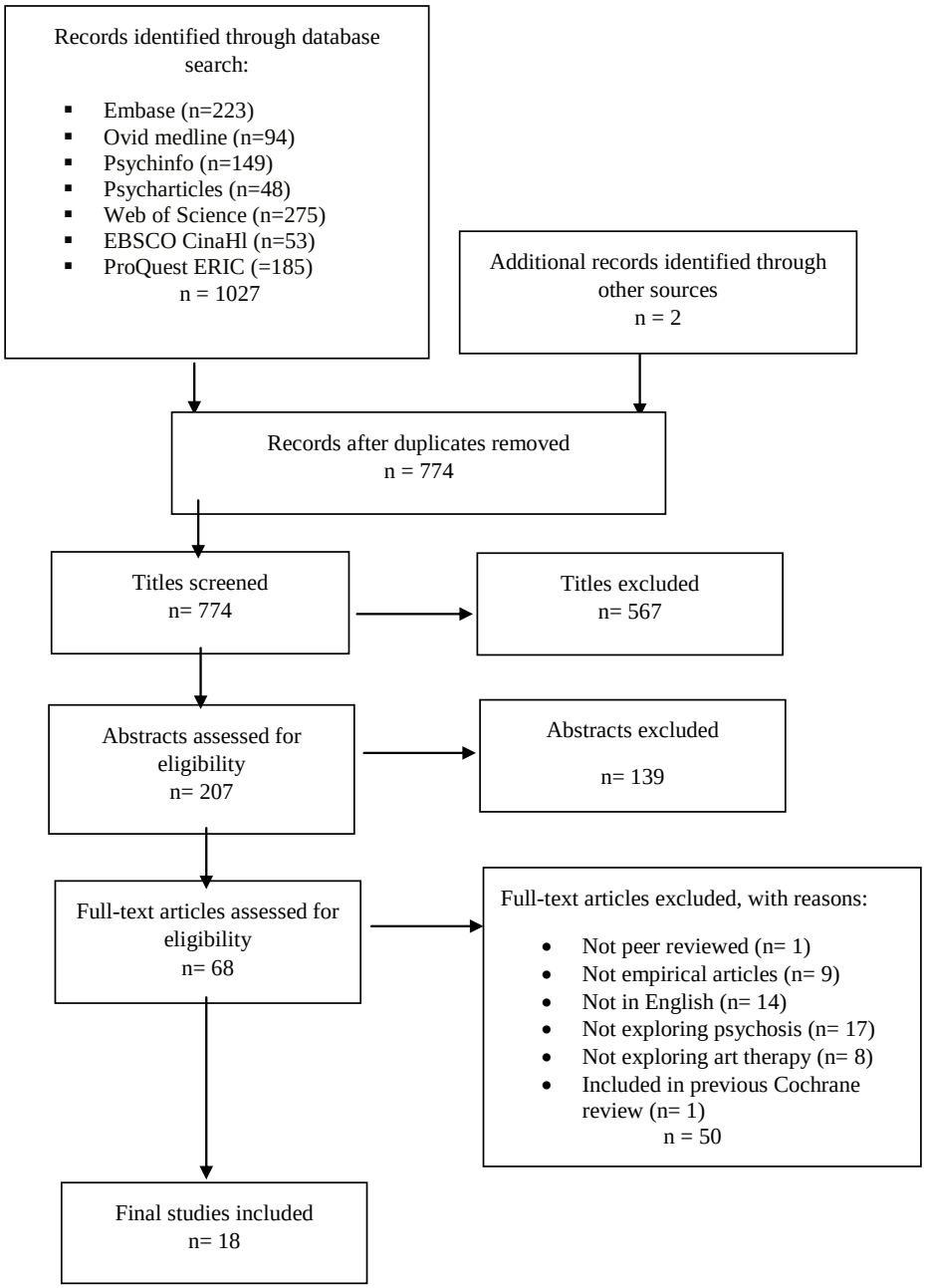

~~**Figure 1. Flow diagram for included and excluded articles**~~

Quality Appraisal

The 18 articles included various methodologies. A multi-method quality framework was developed to review the articles' quality according to standardised criteria.[31] The framework was based on quality criteria for mixed-method studies.[32] When criteria were deemed missing, items were added from qualitative,[33] mixed methods,[34] and RCT quality frameworks.[35] A set of criteria for case studies was collated from three papers,[36-38] and integrated into the multi-method framework. In accordance with Centre for Reviews and Disseminations recommendations, the framework was piloted with an independent researcher.[31]

The final framework was organised into four main quality categories against which author AA rated every article: Truth Value, Applicability, Consistency and Neutrality. Each category was scored and the average score across the four categories indicated the articles' overall quality rating and robustness as good, moderate, or poor (see Appendix). ML and the independent researcher calibrated the quality ratings for a sample of the 18 studies. Differences in ratings were resolved through discussion.

Author AA extracted data from each study using a grid that summarised information relevant to the review's aims (see Table 1). A random sample of the extraction summaries were checked for accuracy by ML to increase consistency. Differences in opinion between the authors were discussed.

Role of the funding source

There are no relevant funding sources in relation to this manuscript. Author AA has full access to the study data and had final responsibility for the decision to submit for publication.

Table 1 Data extraction of final studies to go here

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Results

A narrative synthesis is presented of the quality and methodological considerations within and across the papers, in line with the four quality categories. The papers' demographics and treatment approaches are then described, after which their contribution towards the two research questions is outlined.

Quality of the Studies

Overall, the evidence within this review was weak. It included two RCTs, a re-analysis of an RCT, one mixed-methods study, a survey design, a non-experimental design, five qualitative studies, and six case studies. Eight studies were good quality, four were moderate quality and six were poor quality (see Table 2). The poor quality studies were considered cautiously throughout this review.

Table 2. Summary of Quality of the Studies to go here

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The 'truth value' of some studies was adversely affected because authors presented compound results for participants with different diagnoses.[39-42] This made it difficult to identify whether art therapy benefited a subset of participants with psychosis. It was unclear whether supporting quotations and/or images were a credible representation of participants' experience, because often no reference was made to the source or context of such

examples.[40-45] In the mixed-sample studies it was also unclear whether quotations came from participants with psychosis.

Results were sometimes confounded because some participants receiving art therapy had prior interest in art[43,46] and in one study participants in control groups had 'no affinity' for art.[40] It was suggested that motivation[47] and keenness for art may have positively influenced engagement and perceived benefit from art therapy.[43] Leurent et al. however, identified that interest in art was not a moderating factor in MATISSE.[48] The RCTs were single-blind studies.[20,21,49] Allocation concealment was appropriately carried out although this was more thoroughly described in MATISSE.[20,21]

The reviews' applicability is limited given the numerous case studies and qualitative studies and small sample sizes. Only MATISSE was adequately powered,[20,21] although the low participation rates rendered the secondary analysis underpowered.[48] Few studies provided a rationale for their choice of research design.[39,40,,47,50] The method of recruitment was not given in several qualitative and case studies,[40,42,43,45,47,50,51] and in Montag et al. randomisation was not clearly described.[49] Across the methodologies, the structure of the art therapy intervention was ambiguous or not described.[20,21,39,41,42,44,46]

'Consistency' was a significantly weak category for most case studies and for de Morais et al.[40] Limited,[46,50] or no[41,44,47] information was provided about analyses methods, making it difficult to identify whether analyses were reliably executed. Most case studies and qualitative studies made no attempt to involve other researchers to confirm the analysis.[42,45,47,51,52] Consistency was enhanced mainly in the qualitative studies through semi-structured interviews,[42,45,51-53] member checks,[43,51,53] and an audit.[43]

Reliability was generally strong in the quantitative papers. Cross-checking of the data occurred in a few.[20,21,39] In these latter studies and in Montag et al.,[49] regular supervision from art therapists was provided to intervention facilitators who were art therapists themselves.

'Neutrality' was the weakest quality category for qualitative and case studies, none of which reported reflexive monitoring. Teglbjaerg used a logbook though it was unclear whether this was used reflectively.[45] Only two studies commented on bracketing preconceptions.[51,53] Most case studies did not consider biases associated with researchers acting as the art therapists of the intervention.[41,46,50,53]

The quantitative studies were objective in reporting the significant and non-significant results, apart from de Morais et al.[40] Several quantitative and qualitative studies failed to consider potential biases associated with integrating art therapy with other psychotherapeutic or psychosocial interventions.

Participant Demographics

Across the reviewed studies, the recruited participants had diagnoses of schizophrenia, paranoid schizophrenia, schizoaffective, or bipolar disorder. Four studies included participants with mixed diagnoses, a proportion of whom had diagnoses of psychosis.[39-42] Across the articles there were a total of 299 male and 155 female participants. These figures excluded studies where gender demographics were unclear or not provided.[39-42,45] Most studies were conducted in the UK by the same authors.[20,21,43,46,48,50,52,54] The rest were conducted in Brazil,[40,42] Australia,[39] Norway,[53] Canada,[41] Serbia,[44] Germany,[49] Taiwan,[47] and Denmark.[45]

Treatment Mode

Study comparison was complicated because art therapy had different titles including art therapy or psychotherapy,[20,44,46,47,50] clay work or clay therapy,[40,42] creative activity group,[39] art gallery-based project,[43] psychodynamic art therapy,[41,49] expressive art therapy,[53] and formative art therapy.[45] Some of these titles reflected different theoretical orientations. Formative art therapy stemmed from expressive art therapy which considered art a means of understanding emotional, bodily, and psychotic experiences.[45,53] Alternatively, in analytical art therapy art enabled understanding of unconscious experiences.[45]

Therapists' orientation was infrequently stated or described. In MATISSE, art therapy was adapted according to participants' needs.[20,21] Over half the therapists in Patterson et al. were MATISSE therapists and the most common orientation was psychodynamic, with a minority adopting humanistic, psychoanalytic, or eclectic orientations.[51] This reflects the theoretical orientations of art therapists recorded in a national survey.[54]

Art therapy was often described in two stages; the focus was firstly on the process of creating art which then shifted to reflecting on its meaning usually in a group format.[43,44,46,47,49,50] Interventions varied in structure as sometimes participants initially learnt about art history and techniques,[43] reflected on their feelings,[45] or listened to music and poetry, and did movement therapy.[53] Some studies did not specify how art therapy was delivered.[39,41,42] Art therapy was sometimes incorporated with music therapy,[46,49] unspecified psychosocial interventions,[20,21] or psychotherapies.[39,49]

Twelve studies provided art therapy in a group format, and one provided both individual and group art therapy.[46] Patterson et al. identified that 94·4% of art therapists provided individual and 70·4% provided group art therapy.[54] Art therapy was delivered in open[42,44,50] or closed groups,[20,21] though most studies did not specify this. Art therapy was most commonly delivered in art studios in outpatient or inpatient settings. The length of art therapy varied between one and 14 months. The sessions generally occurred weekly for 1·5 to three hours. Some studies concluded that longer interventions were more suitable for participants with severe symptoms.[40,44,49]

The Effectiveness of Art Therapy

The RCTs investigated the effectiveness of art therapy by measuring symptoms of psychosis and global functioning as primary outcomes,[20,21,49] together with depression in one RCT.[49] Both RCTs measured quality of life and care satisfaction as secondary outcomes. Additionally, MATISSE measured social functioning, medication adherence, and well-being,[20,21] whilst Montag et al. measured mentalisation, self-efficacy, and locus of control.[49] The outcome measures in the lower quality studies included anxiety and depression,[39,40] quality of life, medical outcomes, and health.[39] The measures' reliability, validity, and standardisation for people with psychosis were not always described.[39]

Based on an intention-to-treat (ITT) analysis, MATISSE illustrated no significant differences in primary or secondary outcomes between trial arms, at 12 or 24 months.[20,21] The only significant difference was that at 24 months, people in the activity group had fewer positive symptoms than those in the art therapy group. The secondary analysis indicated no significant

symptomatic improvements for art therapy participants who had severe negative symptoms or a preference for art.[48]

Results in Montag et al. were based on the per-protocol sample because most dropouts were lost to follow-up.[49] When verbal IQ and gender were controlled for, at post-therapy and follow-up, the art therapy group had significantly greater improvements in positive symptoms and global functioning compared to TAU. At follow-up, negative symptoms decreased for the art therapy group and increased for TAU. There were no significant differences for depression. The only significant difference for secondary outcomes was a stronger emotional awareness of others following art therapy. In the ITT analysis, there was only a significant improvement in positive symptoms for the art therapy group, and a tendency for reduced negative symptoms.

Amongst the other studies, clay work resulted in statistically significantly decreased depression and lower but non-significant anxiety compared to not receiving therapy.[40] In Caddy et al., creative activity groups correlated positively with improved depression, anxiety, and stress. Large significant improvements in quality of life, health and distress, and moderate changes in vitality were reported.[39] These latter studies provided very weak evidence due to their poor design and quality. Considering the scarce studies and variable quality, this review provides preliminary though inconclusive evidence for the effectiveness of art therapy for people with psychosis.

The Meaningfulness and Acceptability of Art Therapy

In relation to the second research question, several themes regarding the meaningfulness and acceptability of art therapy were identified across the qualitative and case studies. The findings from poor quality studies were interpreted cautiously.

A common finding was that the art-making process enhanced people's ability to identify, express and explore their distressing emotions.[442,46,51,54] Through art, some expressed themselves at a deeper level than they usually would verbally.[46,53] Art therapy gave some the freedom to be creative in the absence of pressurised atmospheres where they feared being judged.[43,46,52] Art was a safe, containing way for people to focus their attention on something external, whilst making sense of internal experiences of psychosis.[42,46,50,51] This was not always considered an easy process because it triggered difficult memories ~~and psychotic symptoms~~.[42]

The creation of art and reflection on its meaning was believed to allow people to strengthen their sense of self.[41,42,45,50,51,53,54] Through self-expression, participants could connect with themselves and this helped them feel more alive.[51,53] This self-integration was enhanced through the groups' reflection on the symbolism and meaning of art.[46,50] Through art therapy, some participants distinguished what was real from what was not real and connected with their reality.[44,51]

Art therapy was reported to enhance participants' emotional well-being, self-confidence and self-esteem.[41-45,52] Some experienced achievements as they developed artistic skills.[43,44,54] Art therapy was believed to enhance psychosocial functioning as it encouraged engagement in meaningful social activities.[42,43,51,53] It decreased participants' isolation as they trusted,

bonded, and communicated with group members.[43,44,50,53,54] Sharing similar experiences helped participants feel less alone.[52,53] They felt valued, respected,[53] and accepted by the therapist.[51] Participants[52,53] and therapists[51] also valued the therapeutic relationship.

Increased self-awareness through art therapy allowed participants to understand their psychosis. For some, this contributed towards improved health[53] and management of daily problems.[45] The physical process of art-making was also considered soothing and distracted participants from their symptoms.[42,43,52]

The acceptability of art therapy was also considered in light of participant attendance. Most studies provided no information about rates or reasons for attendance or dropout, apart from two where most participants attended most sessions.[43,45] Attendance in MATISSE was low because 39% attended no art therapy sessions.[20,21] Those who consistently attended did so because they were committed and motivated about recovery.[52] People interested in art, who felt comfortable expressing themselves, attended more.[48]

The attrition rates in MATISSE were attributed to death, disinterest in art therapy, difficulty attending, and getting lost to follow-up.[20,21] In Montag et al. dropouts were mostly linked to unplanned hospital discharge. However, attendance was generally high with 59% and 66% of the art therapy group completing outcome measures at post-treatment and follow-up, respectively.[49]

Discussion

This review provided inconclusive evidence for the effectiveness of art therapy for people with psychosis. MATISSE indicated that art therapy was not clinically and cost effective in improving psychotic symptoms and functioning.[20,21] Conversely, the ITT analysis in Montag et al. showed that art therapy decreased positive symptoms for inpatients. The per-protocol results indicated significant improvements in functioning and negative symptoms.[49] These per-protocol results were consistent with earlier RCTs.[17,19] Other studies in this review investigating effectiveness added little weight to the evidence.

This review indicated that art therapy was experienced as meaningful and acceptable by clients and therapists. Most commonly, art therapy strengthened clients' emotional expression, self-awareness, self-esteem, and connection with themselves, their reality and social networks. Yet, this is based on small samples and few good quality qualitative studies, and requires cautious interpretation.

Clinical Practice and Future Research Considerations

The lack of robust research and discrepancy between the evidence regarding the utility of art therapy and the voice of clients and therapists, highlights a need for more rigorous studies. Several theoretical, clinical, and methodological issues that arose from this review may require consideration.

Definition of art therapy

Comparison across studies was difficult because art therapy had various theoretical approaches, definitions, titles, and structures, which were not always clearly defined. Similarly, another art therapy review identified that research was characterised by inadequate descriptions of art therapy approaches and structure.[55] A primary criticism of MATISSE was that the art therapy model, as well as therapists' theoretical orientations, were unspecified.[22] However it was recently clarified that despite variation in art therapy structure and orientation, art therapy was provided consistently with the BAAT principles.[56]

The variation in the reviewed articles may be linked to a wider ambiguity regarding art therapy.[57] A clear definition is important because art therapy is a 'complex intervention' consisting of several elements that interact with the environment and people engaging in it.[22,58] This raises the question of whether art therapy is based on a specific model[54] and defined clearly enough by the BAAT.[6] It is recommended that this definition is reviewed and that future researchers operationalise AT accordingly, to enable replication and application of results.[52] Furthermore, given that art therapy can be practiced in different ways, definitions of art therapy sub-types may be needed. Meta-analyses could then be carried out with a sufficient number of studies using an art therapy sub-type. The cultural diversity of reviewed studies also indicates the need to explore cultural variations in art therapy definitions, approaches and structures, and clients' experiences of this.

The mechanisms of art therapy

The influence of MATISSE remains undeniable given its size and power. However, it could be argued that it was conducted prematurely.[20,21] Springham and Brooker suggested that

RCTs are usually conducted at later stages when researchers understand how interventions work and what changes can be brought about by different aspects of it.[59]

Few studies in this review defined the mechanisms of art therapy and these were not easily named by art therapists.[51] Some identified that the mechanisms of change were the therapeutic relationships, therapists' role in containing individuals, the process of creating art, the final art products,[51,54] and group process.[50]

Whilst this review highlights several mechanisms of change, this requires further investigation. Robust qualitative research using interviews, focus groups, and multiple case studies, can increase insight into what participants believe elicits change. Indeed, according to the Medical Research Council, it is fundamental to first comprehend which processes underpin complex interventions through qualitative research.[60,61] Case studies can allow analytical generalisation, whereby individual cases are understood in the context of established theories.[62] Improved theoretical knowledge can then guide hypotheses of change mechanisms, quantitative research designs with larger samples,[60] and indicate how effectiveness can be measured.[63]

Outcome measures

Art therapists have described that outcomes of art therapy are obtained through processes that are both universal and varied. This may be influenced by individuals' needs and abilities, the therapeutic relationship, the creation of art, and by therapists' observations, reflections, and interpretations which are not necessarily shared with individuals.[51] These processes are not easy to measure objectively,[59] highlighting the difficulty in measuring change in art therapy.

The primary outcome measures in the two RCTs (symptoms of psychosis and global functioning) may not have been the most appropriate targets for art therapy,[28] or captured what participants found beneficial about it. There were also unclear clinical and theoretical rationales for using secondary outcome measures such as medication adherence and depression. In this review, through art therapy participants valued expressing themselves, re-connecting with themselves and others, and feeling confident, even if symptoms persisted. This is consistent with the focus of psychotherapy on changes in anguish, coping and satisfaction, rather than on symptom reduction.[70] Social functioning, well-being,[20,21] mentalisation, and self-efficacy[49] were secondary outcome measures in the RCTs and may warrant further research. It is recommended that these, together with self-confidence, and intra-personal connectedness are considered as outcome measures for art therapy.

Art therapy as a targeted or universal intervention

In this review it was unclear for whom art therapy specifically worked. Art therapy was uniquely experienced,[51] and therapists were pragmatic, adapting their approach to fit individuals' needs.[64] Therapists suggested that willingness to partake in art therapy predicted who found it beneficial, and not clients' diagnosis or clinical presentations.[51] Indeed, Patterson et al. indicated that participants were mostly referred to art therapy based on readiness to attend, ineffectiveness of previous therapies, and motivation.[54] Furthermore, MATISSE suggested that art therapy was ineffective because participants were unwilling to engage, resulting in high dropout rates.[20,21]

Holttum and Huet argued that even if those who attended found art therapy effective, this was lost to the ITT analysis.[22] An ITT analysis aims to reflect clinical practice where non-adherence to treatment is expected. An intervention's effectiveness is evaluated on *all* randomised participants, irrespective of whether they attended the intervention.[65] Follow-up results in MATISSE were based on over 85% of participants even though 39% attended no art therapy sessions.[20,21] Therefore, any dose effect may have been diluted. With such high dropout rates, carrying out additional per-protocol analyses may have been desirable,[66] as in Montag et al.[49] Patterson et al. acknowledged that this may have elicited different findings in MATISSE.[56] Despite the limitations of a per-protocol analysis, it can still be a relevant alternative in the case of interventions like art therapy, which while offered to all participants, may not be accepted by everyone. This is relevant because this review indicated that those who engaged in art therapy, seemed to benefit from it.

Recruitment of all people with psychosis for research is important, if we assume that art therapy should be offered to everyone.[5] However, also conducting analyses with people specifically willing to engage in art therapy may indicate whether this subgroup is more likely to benefit,[51] and how to adapt the intervention accordingly.[61] Such evidence may allow clients to receive their treatment of choice, clarify art therapy referral criteria, and increase services' understanding of art therapy.[67] This may fit better with clinical practice by preventing participants from being randomly allocated to treatment arms they are unmotivated to attend. This is important for people with psychosis who may not engage with all treatments,[68] or may disengage from services due to their psychotic symptoms.[69]

Intervention design

Generally, greater statistical power is needed to identify smaller changes between groups and to minimise risks of type II errors. Furthermore, the small group sizes in some studies may have restricted participants' opportunities to explore their images with others.[21,43,49] Future RCTs may need to carefully consider the development of art therapy groups which can have complex dynamics. In clinical practice, members are often individually engaged to develop a therapeutic relationship before the group commences. This preparation can enable integration into the group which may be important for people with negative symptoms or social anxiety.

Several studies conducted art therapy with psychosocial or psychotherapeutic interventions, making it difficult to disentangle art therapy's influence from other interventions. Addressing this in future research can increase the validity of results. The appropriate duration of art therapy remains unclear because interventions ranged from one to 14 months and effectiveness emerged in shorter interventions.[49] Several studies recommended longer interventions for people with severe difficulties. Intervention length may be associated with degree of distress suggesting that longer interventions can facilitate engagement with art-making.[71] This may allow long-term changes (e.g. in quality of life) to be observed.[49]

Ensuring inclusion of regular follow-up periods in research may illuminate the sustainability of changes elicited through art therapy, which was not captured in the reviewed papers. Follow-ups in some studies[17,19,49] were much shorter than the yearly follow-ups in MATISSE.[20,21] Art therapy gains in MATISSE may have become extinguished after one and two years and short-term improvements may have been missed.[48] It is suggested that effectiveness is investigated by collecting outcome data at regular intervals,[21] such as pre, mid, and post intervention; this can provide an immediate measure of change.

Review Limitations

Several studies written in languages other than English were excluded which limited the generalizability of the findings. Additionally, the consideration of different psychotic diagnoses under the term 'psychosis' may have overseen unique differences within this population. This review included three studies with mixed populations to avoid the exclusion of studies with participants with psychosis. However, their relevance to the review was restricted due to small sample sizes and they had to be treated cautiously. Furthermore, qualitative results had to be interpreted tentatively due to small numbers and only four good quality articles. The quality of each study was rigorously evaluated through the multi-method quality framework and the quality ratings were calibrated. Further validation of this framework is needed to enable its development and future use.

Conclusions

Evidence for the effectiveness of art therapy in symptom reduction and functioning for people with psychosis remains inconclusive. However, discounting the use of art therapy may rob this population of an intervention which qualitative studies indicate is suitable and meaningful. The discrepancy between the evidence for effectiveness and service users' and clinicians' experiences, highlights a gap in the theoretical understanding of how, why, and for whom art therapy works and how this can be researched. This review sustains that investigating the effectiveness of art therapy through RCTs is necessary to economically and ethically support its delivery.[72] Indeed, NICE recommended more high quality trials.[5] RCTs should be conducted in light of qualitative research to build upon and verify the qualitative literature reviewed. Ethnographic research and interviews can illuminate individuals' experience of image-making, and whether and how art therapy helps them. This can increase

theoretical knowledge of AT[59] and highlight measurable outcomes,[54] which can guide controlled research.

Contributors

Authors AA and ML designed the manuscript. AA conducted the systematic literature search, the data extraction, data analysis, and the data interpretation, and also wrote first draft of the manuscript. Author ML provided important intellectual input to the drafting of the manuscript, as well as feedback on the data extraction and cross-checking of the quality evaluation of the articles. Both authors contributed to and have approved the final manuscript.

Conflict of interest

We declare that we have no relevant conflict of interests.

Acknowledgements

The authors would like to thank Dr Neil Springham for offering comments on the rationale and relevance of this manuscript in the field of psychosis and art therapy. Thanks also go to Dr Neena Ramful for providing support in piloting the quality framework and calibrating the reviewed studies.

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Panel 1: Search strategy

We searched seven electronic databases for original articles published in English from the year 2007 onwards. These were Embase, Medline, Psychinfo, Psycarticles, Web of Science, CINAHL Plus (EBSCO), and ERIC ProQuest. Further searches through reference lists and Google scholar were also carried out which elicited two additional papers. We used the search terms "art therap*" OR "art psychotherap*" OR "creative art psychotherap*" OR "creative art therap*" AND "schizophrenia" OR "psychosis" OR "psychotic" OR "psychiatric". We did our first search on September 3, 2014 and our last search on May 16, 2016.

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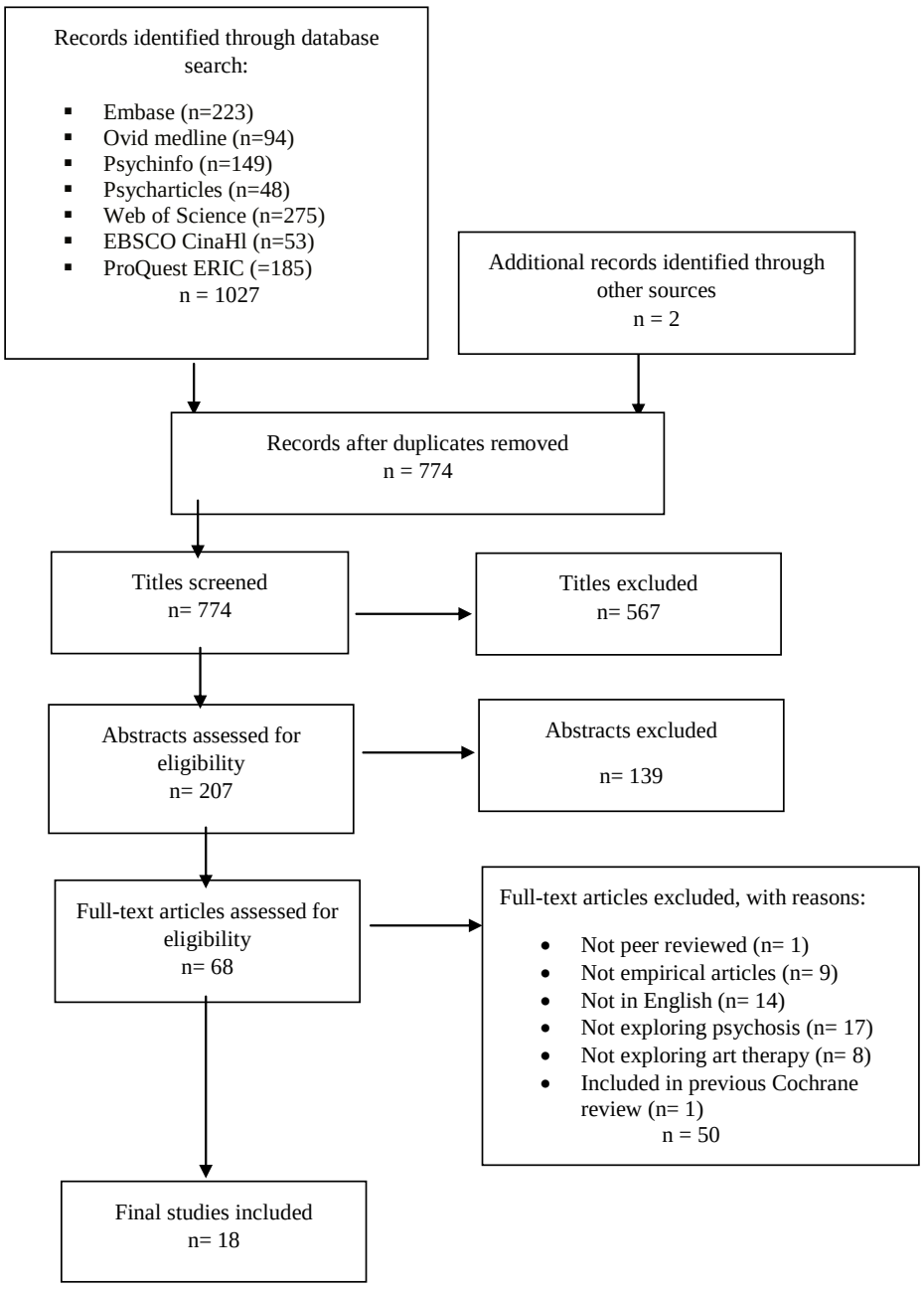

Figure 1. Flow diagram for included and excluded articles

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Table 1. Data Extraction of Final Studies

Authors, Year, Country	Type of Study	Study Aims	Participants	Methodology	Analysis	Results: The acceptability and meaning of art therapy	Results: The effectiveness of art therapy
Crawford, Killaspy, Kalaitzaki, Barrett, Byford, Patterson et al. (2010) Crawford, Killaspy, Barnes, Barrett, Byford, Clayton, et al. (2012) United Kingdom	3-arm Randomised Control Trial	To investigate how health and social functioning of people with schizophrenia is impacted through art therapy, compared with an activity group and standard care alone. To examine differences in engagement and benefits between groups and cost effectiveness of art therapy.	417 participants with schizophrenia. 140 people were randomly allocated to the art therapy group with standard care, 140 people to the activity with standard care group and 137 people to the standard care alone group.	Weekly art therapy, activity or standard care alone groups took place for one year. Primary outcomes were functioning (Global Assessment of Functioning scale), and psychotic symptoms (Positive and Negative syndrome scale) at two years. Secondary outcomes were functioning and symptoms at one year, and attendance, functioning, medication adherence, satisfaction, well-being and quality of life at one and two years.	An intention-to-treat (ITT) analysis took place. An ANCOVA examined group differences, and controlled for outcome, site, sex and age. The same was done for secondary outcomes. A secondary analysis, a two and three level heteroscedastic model, and a two stage least squares estimate were carried out.	Nearly 40% of the art therapy group did not attend. A few attended regularly though this did not influence outcomes. Art therapy attendance was better than activity group attendance. For both groups, the main dropout reasons were death, withdrawal and getting lost to follow-up. Withdrawal occurred because participants were not interested in attending or found it difficult to attend.	At two years follow-up there was no significant difference between groups for primary outcomes, though those in the activity group had less positive symptoms that those in art therapy. At one and two years, there were no significant differences in secondary outcomes. Art therapy had no clinical advantage and was not more cost-effective.
Leurent, Killaspy, Osborn, Crawford, Hoadley, Waller, & King (2014) United Kingdom	Secondary analysis of the MATISSE RCT	To re-analyse the MATISSE results and examine differences in the effectiveness of subgroups in art therapy and standard care. The characteristics explored were gender, treatment compliance, interest in art, comfort with emotional expression and time since referral.	MATISSE included participants in standard care (n= 137), art therapy and standard care (n= 140) and activity group and standard care (n= 140). This study considered the art therapy and standard care group.	MATISSE involved weekly groups over 12 months. Primary outcomes were functioning and mental health symptoms. Secondary outcomes were: functioning and symptoms measured at 12 months, and attendance, social functioning, medication adherence, care satisfaction, well-being and quality of life measured at 12 and 24 months.	Through an ITT analysis, groups were compared on interest in art therapy and symptoms at 12 months using a mixed-effect linear model. The intervention effect was investigated by stratifying by subgroup and examining the effect of interaction or continuous variables. Differences in attrition were compared.	There were no significant differences between groups in rates and reasons for attrition. Only site of recruitment was relevant. Art therapy attendance was poor because 39% attended no sessions and in a year, the average attendance was 11 sessions. Although non-significant, a prior interest in art and comfort sharing emotions influenced attendance positively.	There was no significant difference in the effectiveness of art therapy on symptoms of psychosis between subgroups who had more or less negative symptoms of psychosis or interest in art therapy. There were no significant differences in any of the other subgroup analyses.
Montag, Haase, Seidel1, Bayerl1, Gallinat, Herrmann, & Dannecker (2014) Germany	Pilot Randomised Control Trial	To investigate the efficacy of psychodynamic Art therapy for people in acute psychosis, on symptoms, functioning, mentalising abilities, self-efficacy, care satisfaction and quality of life.	There were 58 inpatients with schizophrenia. Following randomisation, 29 received art therapy with treatment as usual and 29 received treatment as usual, which excluded art activities.	Twice weekly groups for six weeks occurred. Primary outcomes were symptoms (Scale for the assessment of negative/positive symptoms), depression (Calgary depression scale for schizophrenia), and functioning (Global assessment of functioning scale). Secondary outcomes were mentalisation, self-efficacy, locus of control, quality of life, and care satisfaction.	The analysis was based on the per-protocol sample. Differences between group demographics and illness was investigated through T- and Chi2-tests. ANCOVA compared primary outcomes at post-treatment and follow-up, whilst controlling for baseline ratings, verbal IQ and gender. An ITT analysis of primary outcomes was also carried out.	The data at six weeks were based on 59% of participants from art therapy and 69% from treatment as usual. At 12 weeks follow-up, the data were based on 55% of participants in art therapy and 66% in treatment as usual. Reasons for dropout related to unplanned discharge and practical difficulty attending groups. Apart from this, those in art therapy had good attendance.	The per-protocol sample results showed that the art therapy group had a significant decrease in positive symptoms and functioning at post-intervention and follow-up, and in negative symptoms at follow-up. There were no significant changes in depression. In the ITT, art therapy had improved positive symptoms at post-treatment and a lower trend in negative symptoms.

Authors, Year, Country	Type of Study	Study Aims	Participants	Methodology	Analysis	Results: The acceptability and meaning of art therapy	Results: The effectiveness of art therapy
Patterson, Debate, Anju, Waller, & Crawford (2011b) United Kingdom	Survey design	To describe the availability, accessibility, structure, delivery and content of art therapy for people with schizophrenia in the NHS. To explore art therapy views of how AT may support people with schizophrenia.	71 art therapists were randomly recruited from 27 NHS Trusts.	A questionnaire was piloted and developed by considering literature, organisational policies and experiences of art therapists. The closed and open questions related to the assessment process, outcome measures and art therapy mechanisms. Therapists rated their level of agreement on statements about the benefits of art therapy using a 5-point Likert scale.	Simple descriptive statistics investigated how many agreed with the questionnaire items. Univariate statistics indicated associations between therapist traits, type of practice and views of working with other professionals. Open-ended questions were analysed through thematic analysis though these results were not reported.	Most therapists used a non-directive approach and believed that art-making and reflection were fundamental parts of art therapy. This enhanced self-understanding, control, expression and conflict resolution. Acquiring new skills was not a key aspect of art therapy. Therapists stated that this population had limited access to art therapy. Less than half thought it was not well integrated with services, albeit valued.	N/A
Caddy, Crawford, & Page (2012) Australia	Non-experimental, non-randomised	To explore changes in mental health across a five year period for inpatients who took part in art and craft creative therapy groups in a private hospital.	Existing de-identified data was used of 403 patients who participated in at least six sessions and attended no other therapy groups. Most had a diagnosis of depression, bipolar or other mood disorders. 14·1% had a diagnosis of schizophrenia.	The creative activity group was attended by 16 patients daily. It involved art, craft and expressive projects which addressed patients' issues. Changes were measured using the Depression and Anxiety Stress Scale (DASS-21), Quality of Life Enjoyment and Satisfaction (Q-LES-Q), Medical Outcomes Short Form (SF-14) questionnaires and Health of the Nation Outcome Scale (HoNOS).	Data were analysed using descriptive and inferential statistics to investigate the correlations between mental health outcomes and participation. Paired t-tests were used to identify whether there were significant changes in measures from admission to discharge.	N/A	Participation positively correlated with better mental health from admission to discharge, with moderate to strong effect sizes. The largest, statistically significant improvement was on the HoNOS. Large effect sizes were observed on the Q-LES-Q and DASS-21 Depression and Anxiety subscales. Moderate effect sizes were observed on the Stress subscale and the SF-14.
De Morais, Dalecio, Vizmann, Bueno, Roecker, Salvagioni, & Eler (2014) Brazil	Mixed Methods design: Non-randomised controlled study and qualitative interviews	To investigate the effect of a clay work group on levels of depression and anxiety amongst inpatients in a day hospital compared with patients who did not receive therapy.	There were 24 participants: 12 in the control group and 12 in the clay work group. They had various diagnosis such as depression, bipolar, anxiety, dementia, schizophrenia and psychotic disorder.	Each group received eight weekly clay therapy sessions. In the clay group participants described their sculptures and feelings. The Beck Depression Inventory and Spielberger State-Trait Anxiety Inventory were completed. Interviews took place to explore how participants felt about their art. It is unclear when the interviews occurred and if everyone was interviewed.	The hospital psychologist who was not involved in the research, administered and interpreted the results of the measures. The Mann–Whitney test was used to compare the scores between the groups. No information was provided about the qualitative analysis.	Interview extracts suggested that some found clay work enjoyable and relaxing and it helped them to reflect. It was unclear whether these quotations appertained to participants who had schizophrenia. Two participants attended half the clay work sessions and were excluded from the analysis. Their dis-engagement was attributed to the clay work being overwhelming.	Therapy using clay improved depression compared to receiving none at all. The clay work group had mild depression on average and the control group had moderate depression. The difference was statistically significant. The clay work group had lower anxiety though this was not statistically significant.

Authors, Year, Country	**Type of Study**	**Study Aims**	**Participants**	**Methodology**	**Analysis**	**Results: The acceptability and meaning of** art therapy	**Results: The effectiveness of** art therapy
Teglbjaerg (2011) Denmark	Qualitative study	To understand whether and how art therapy effects the mental health of people with schizophrenia and whether patients with nonpsychotic and psychotic disorders use art therapy differently.	There was one group of five outpatients with schizophrenia and one comparison group of five nonpsychotic patients with depression and/or personality disorders.	Participants attended weekly, formative group art therapy for one year. They were interviewed before, immediately after therapy and at one year follow-up. Interviews concerned experiences of mental illnesses, life, relationships, and art therapy. Data were gathered from logbooks, participants' art and evaluation forms.	Modified grounded theory was carried out. This included four analysis levels: giving a narrative description of therapy, identifying themes, comparing participants' themes to the research questions and evaluating whether they were answered.	Both groups found art therapy helpful, even at follow-up, and all attended. The main benefit was a strengthened sense of self as they expressed themselves, problem solved, socialised, felt confident, felt included, and less paranoid. Those with schizophrenia achieved these benefits by using art to become present, to find meaning, connect with themselves and others and to become creative.	N/A
Patterson, Crawford, Ainsworth & Waller (2011a) United Kingdom	Qualitative study	To understand the process and outcomes of art therapy (i.e. what changes, how it changes and for whom) based on the experience of art therapists, and to improve provision of art therapy.	24 art therapists were recruited. There were three key informants (art therapists from MATISSE); 14 MATISSE art therapists (who delivered or supervised art therapy); and seven non-MATISSE therapists.	Over 20 months, interviews and focus groups took place. Questions addressed the nature, process and outcomes of art therapy, therapists' understanding of schizophrenia and their concerns. 33·3% of the therapists substantiated the interviews with documents (e.g. publications).	Grounded theory was carried out using constant comparative method and 3 levels of coding; Initial coding to identify descriptive codes; Focused coding to group codes into themes; Theoretical coding to identify categories. The documents were analysed primarily through theoretical coding.	Art therapy was considered valuable for this client group. Therapists' role, the therapeutic relationship, art making and group were believed to increase expression, well-being, identity and acceptance. Willingness to engage was beneficial. What made art therapy helpful was unclear but it entailed an interaction between therapists, clients, and art. The art therapy referral criteria were unclear.	N/A
Patterson, Borschmann & Waller (2013) United Kingdom	Qualitative study	To understand the experiences of participants who received AT in MATISSE, to understand who to refer to AT, how to evaluate its effectiveness, and the degree of generalisability of MATISSE results.	There were 19 trial participants diagnosed with schizophrenia and four participants who took part in a separate focus group at 12 months follow-up.	Interviews lasted 20 to 90 minutes and explored their reasons for participating, and response to the allocation and intervention. Key workers or partners were present in some interviews. Trial data, field notes and the experiences of therapists as presented in Patterson, Crawford, Ainsworth and Waller (2011), were considered.	A constructive grounded theory approach was used which involved constant comparison and multi-level coding strategies, in line with the analysis method outlined in Patterson, Crawford, Ainsworth and Waller (2011).	Some participants did not attend MATISSE because they were not interested in art therapy. Those who dropped out were not motivated and disliked group work. The 6 who attended enjoyed the social and therapist contact, and art. They experienced 'no change' or specific change. A few gained confidence, achievements, felt accepted and not judged.	N/A

Authors, Year, Country	Type of Study	Study Aims	Participants	Methodology	Analysis	Results: The acceptability and meaning of art therapy	Results: The effectiveness of art therapy
Colbert, Cooke, Camic & Springham (2013) United Kingdom	Qualitative study	To explore whether reflection through paintings in an art-gallery with staff improves clients' personal narratives of psychosis, well-being, and social inclusion and creates new community narratives about psychosis.	Five men and two women were clients with a diagnosis of psychosis. There were two female gallery-staff, one female art therapist and two NHS staff (one male and one female)	Two groups took place for four weeks each. The first part was spent in the art gallery where paintings and their meaning were discussed and participants could sketch. They then moved to the art studio and created and reflected on more art that they produced. Interviews after four weeks explored participants' experience of the group and their well-being.	A literary context narrative analysis was used to understand the thoughts, aims, language and themes in the narratives. A social context narrative analysis explored dominant, personal stories of psychosis and whether community narratives developed.	Some participants changed their dominant personal narrative of psychosis. A new community narrative was developed. This identified the staff-client relationship as validating, amicable and honest. The group improved recovery, social inclusion, and well-being. Five clients attended all or most sessions and were accompanied by the staff.	N/A
De Morais, Roecker, Jodas, Denise, & Eler (2014)	Qualitative study	To understand the significance of clay art therapy for psychiatric patients who attend a day hospital.	Seven out of 16 participants had a diagnosis of schizophrenia or schizo-affective disorder~~schizophrenia~~.	Two open groups took place. Participants attended at least seven clay therapy sessions. Semi-structured interviews were used to ask open questions about participants' experience before, during, and after the clay therapy sessions.	The data were analysed using content analysis. This included the ordering and classification of data into final themes. No further information about this was provided.	Clay therapy increased participants' creativity and self-awareness and reduced their emotional distress. Some remembered their past and could explore difficult feelings more easily. For others it triggered difficult memories, feelings, and symptoms. Yet, it was mostly considered helpful in improving their relationship with themselves and others.	N/A
Drapeau & Kronish (2007) Canada	Case Report	To investigate the benefits and clinical effectiveness of a creative art therapy group program for outpatients with psychiatric disorders by exploring vignettes of sessions.	There were 26 psychiatric outpatients with various diagnoses such as depression, schizophrenia, schizoaffective, dissociative, borderline, and bipolar disorders.	Psychodynamic art therapy groups were provided for just over one year. Each group met for 12 weeks. The sessions were bilingual, in English and French. No data collection method was specified.	No analysis method was specified. Changes in participants' psychological well-being were discussed and a comparison was made of the meaning of the drawings they created in earlier and later sessions.	Drawings enabled clients to express and explore their issues. Sharing drawings with others increased their self-acceptance and understanding. Drawings helped clients to connect with reality, trust others, deal with loss and socialise. It improved their self-esteem, quality of life, and humour. No information about attendance was provided.	N/A

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Authors, Year, Country	**Type of Study**	**Study Aims**	**Participants**	**Methodology**	**Analysis**	**Results: The acceptability and meaning of** art therapy	**Results: The effectiveness of** art therapy
Banks (2012) United Kingdom	Case Study	To explore the progress, development and role of art therapy in a male low secure ward, to explore how art can build safety and security and how violence can be understood through the meaning of the images.	One man with a diagnosis of paranoid schizophrenia, which was triggered by drug misuse.	He attended individual and group art therapy (which also included music therapy) and a recovery group (which included art making) for 12 months. He co-created an audio image recording, and took part in an end of therapy interview where he reflected on art making using two images.	The author chose 11 key images and audio image recordings which were thought to enhance the client's reflection and understanding of his violence. These were used to describe the model of art therapy provided and the client's experience. No analysis method was described.	The participant found that art improved his emotional expression, hopes, and alleviated his worries. It provided containment and security. The non-judgemental atmosphere strengthened the therapeutic relationship. Through the meaning of his art, his sense of self strengthened as he linked his inner and outer experiences and made sense of his anger and life.	N/A
Michaelides (2012) United Kingdom	Case Report	To explore how art therapy groups help a client with schizophrenia who has a poor reflective functioning ability and whether it is a safe way of exploring mental states and improving reflective functioning.	A case study of one male participant diagnosed with schizophrenia who was functioning at a negative reflective functioning level.	An open art therapy group ran for 14 months. Clients with different diagnoses attended. Following art creation, the group discussed their drawings. Observations took place of the case study's level of engagement, involvement in the group discussions and the nature of drawings produced.	No analysis method was described. Changes in the participant's presentation were discussed as well as changes in the imagery produced, with emphasis on the 2nd, 4th and 32nd sessions.	Art therapy was acceptable for the client with negative symptoms. He moved to stages of 'identification' and 'familiarisation' and possibly also 'acknowledgement' as his reflective functioning improved. He became interested in the group and his art was a means of expression. The group's reflection gave him a voice and allowed him to connect with himself.	N/A
Gajic (2013) Serbia	Case Report	To present the clinical observations of two clients with schizophrenia who attended an AT group in a day hospital and to investigate their health and functioning at admission and discharge.	One female with paranoid schizophrenia and one male with schizophrenia.	Weekly art therapy sessions occurred over two months. Participants created drawings and reflected on them. At admission and discharge the Clinical Global Impression Severity (CGIS) and Global Assessment of Functioning (GAF) scales were completed and the Clinical Global Improvement (CGI-I) Scale was completed at discharge.	The researcher together with the group therapists conducted a qualitative analysis of the drawings' form and content and the group therapy protocols. Details about this analysis were not provided.	The participants were regular attenders. Art therapy was considered useful for schizophrenia. It enhanced creativity, self-esteem and self-confidence. The group provided validation, support, security, acceptance, social connection and expression. The participants appeared less preoccupied by psychosis following their engagement in art therapy.	For both participants, minimal improvement was shown on the CGIS and GAF from admission to discharge, and on the CGI-I. These minimal improvement in functioning and health were attributed to participants having severe psychosis and therefore requiring a longer intervention.

Authors, Year, Country	Type of Study	Study Aims	Participants	Methodology	Analysis	Results: The acceptability and meaning of art therapy	Results: The effectiveness of art therapy
Havenik Hestad, Lien, Teglbjaerg, & Danbolt (2013) Norway	Multiple Case Study	To describe the course and usefulness of an expressive art therapy group for women with psychotic diagnoses. To understand how and why art therapy aids in exploring psychotic experience and improving coping.	There were five female participants with various psychotic diagnoses which were bipolar disorder, schizoaffective disorder, schizophrenia and paranoid psychosis.	The group met weekly for nine months in the psychiatric hospital. The start of the group included music, poetry and movement therapy, after which three art modalities were used to explore psychosis and its meaning. Observations of the therapeutic process were made and interviews were carried out at eight months follow-up.	Participants' situation before and after art therapy was analysed through group notes and interviews using a modified 7-step method for case studies. This included: literature searching, analysing the different information sources, time-series analysis, pattern matching, and member checking.	All the participants felt able to explore psychosis, express themselves, gain awareness and feel alive. Two gained control as they cognitively reinterpreted psychosis. All learnt how to cope and felt valued though how this occurred was unclear. Spiritual and existential themes were common. Participants felt able to interact with and support each other safely.	. N/A
Hung & Ku (2015) Taiwan	Case Report	To present the cases of two patients with schizophrenia who received semi-structured art therapy.	Patient A: a 19 year old, female diagnosed with schizophrenia 4 years ago. Patient B: a 37 year old patient diagnosed with schizophrenia 10 years ago.	Semi-structured art therapy was provided four times a month. A photo card collection was used to guide what images the patients could draw, after which they reflected on their images. The Positive and Negative Syndrome Scale (PANSS) and Assessment of Negative Symptoms (SANS) were completed at two times points.	Analysis was carried out of the patients' clinical symptoms, psychosocial issues, and the images they produced. No additional detail about the analysis was provided.	Improvements in PANSS and SANS scores were attributed to a motivation to attend art therapy. Authors concluded that the younger patient was more likely to share stories of her images, compared to the older patient.	After a month, Patient A showed an improved PANSS score from 90 to 65 and SANS score from 69 to 45. Patient B showed an improved PANSS score from 114 to 92 and SANS score from 94 to 69.

Table 2. Summary of Quality of the Studies

Authors	Truth Value	Applicability	Consistency	Neutrality	Overall Quality Rating (Average score)
		Quantitative Studies			
Crawford, et al. (2010) Crawford, et al. (2012)	5	5	5	5	Good (5)
Montag, et al. (2014)	4	4	6	5	Good (5)
Leurent, et al. (2014)	5	5	5	5	Good (5)
		Non-Experimental Study			
Patterson, et al. (2011b)	3	4	5	4	Moderate (4)
Caddy, et al. (2012)	4	3	5	4	Moderate (4)
		Mixed Methods Study			
De Morais, et al (2014)	1	2	2	1	Poor (2)
		Qualitative Studies			
Teglbjaerg (2011)	2	3	3	1	Poor (2)
Patterson, et al. (2011a)-	6	6	5	4	Good (5)
Patterson, et al. (2013)	6	5	4	2	Good (4)
Colbert, et al. (2013)	5	4	6	3	Good (5)
De Morais, et al (2014b)	3	3	3	1	Moderate (3)
		Case Studies			
Drapeau & Kronish (2007)	1	2	1	1	Poor (1)
Banks (2012)	3	3	2	1	Poor (2)
Michaelides (2012)	3	3	3	1	Moderate (3)
Havenik, et al. (2013)	5	4	4	5	Good (5)
Gajic (2013)	3	2	2	1	Poor (2)
Hung & Ku (2015)	1	1	1	0	Poor (1)

List of Amendments

The responses of the authors and the changes made have been written in **blue** following each point that the reviewers have made. The authors direct the reader to the paragraphs and pages where the changes are made in the Tracked Manuscript Word document to help the reviewers and editor more easily identify where the changes are.

1.You have added data from 2 new papers that you found when you updated your literature search. However, it appears data was added inaccurately from one of these. You wrote 'This was not always considered an easy process because it triggered difficult memories and
psychotic symptoms' - the paper doesn't state that the art therapy triggered psychotic symptoms. A patient reports abnormal thoughts but the paper doesn't actually state this. Please delete 'and psychotic symptoms'.

Author's response: 'and psychotic symptoms' has been removed from the sentence.

You also report 'Seven out of 16 participants had a diagnosis of schizophrenia' - I think this is slightly inaccurate. 7 had a diagnosis of either schizophrenia or schizo-affective disorder. Please could you check the paper again and change this.

Author's response: This has been changed from schizophrenia to 'schizophrenia or schizo-affective disorder'.

2. Please could you remove all tables, figures, panels, diagrams, flow-charts etc from the body of the manuscript and instead place them after the references. Then, where you removed them from write, for example 'table 1 to go here' as a guide for us. Please also supply each table, figure, panel, chart etc as a separate file and upload these on the editorial system. So therefore we would have the manuscript with everything at the end, and then each item also uploaded as a separate file, just as you uploaded the manuscript. We need this for editing. Please email me if you have any difficulties with this.

Author's response: These have been removed from the main text and placed after the references. We have indicated within the text where the tables, figures and panel should go. Separate files for each item have also been included.

3. Please re-do the author forms and conflict of interest forms as these need to be updated and signed since you updated the paper.

Author's response: These have been redone and resigned.

We require confirmation that the paper has not been submitted to another journal, and has not been published in whole or in part elsewhere previously.

Author's response: We confirm that the paper has not been submitted to another journal, and has not been published in whole or in part elsewhere previously. This statement has also been added to the cover letter and response to reviewers.

Panel 1: Search strategy

We searched seven electronic databases for original articles published in English from the year 2007 onwards. These were Embase, Medline, Psychinfo, Psycarticles, Web of Science, CINAHL Plus (EBSCO), and ERIC ProQuest. Further searches through reference lists and Google scholar were also carried out which elicited two additional papers. We used the search terms “art therap*” OR “art psychotherap*” OR “creative art psychotherap*” OR “creative art therap*” AND “schizophrenia” OR “psychosis” OR “psychotic” OR “psychiatric”. We did our first search on September 3, 2014 and our last search on May 16, 2016.

Figure 1 Flow Diagram Not annotated

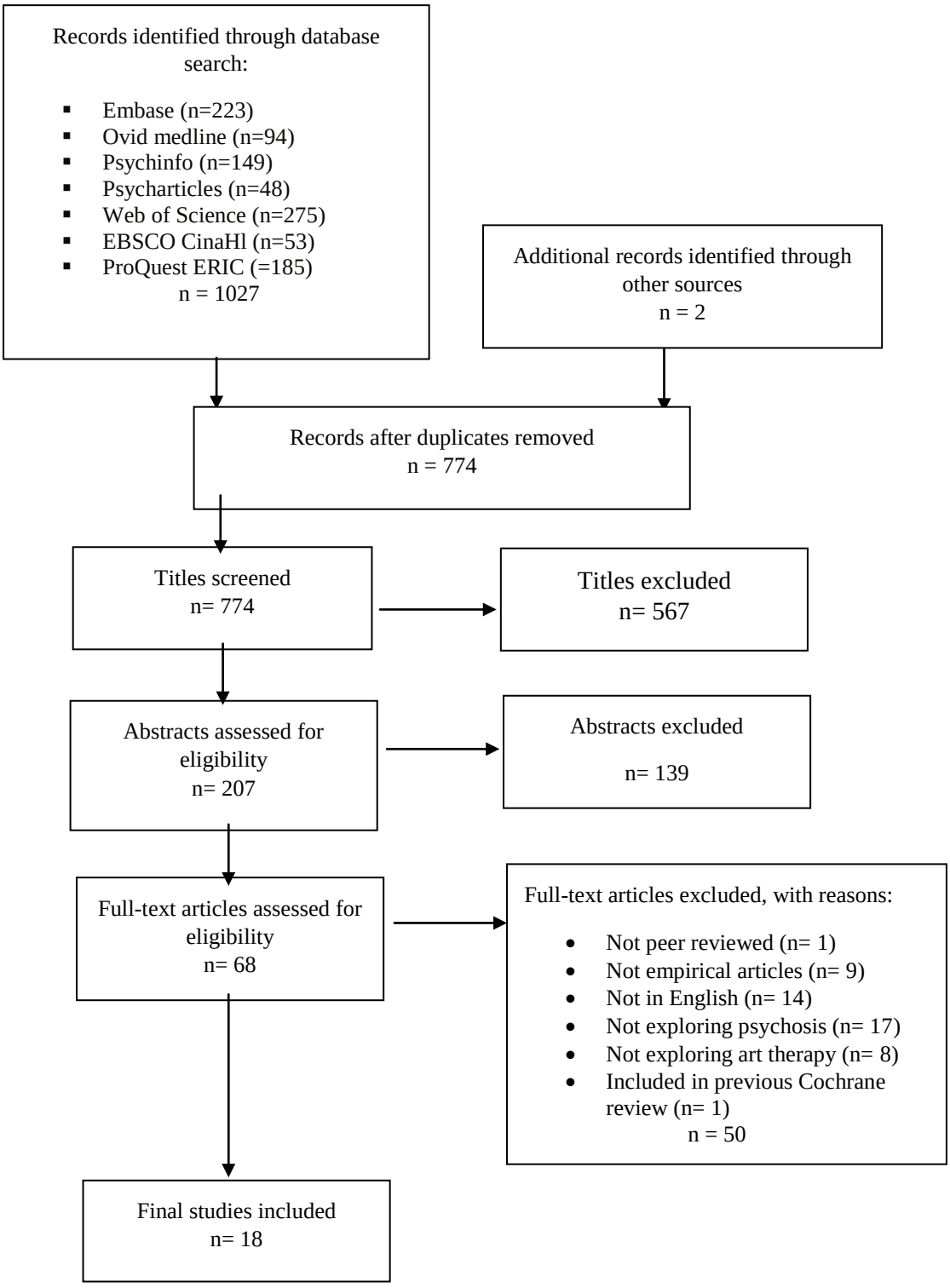

Figure 1 Flow Diagram Annotated

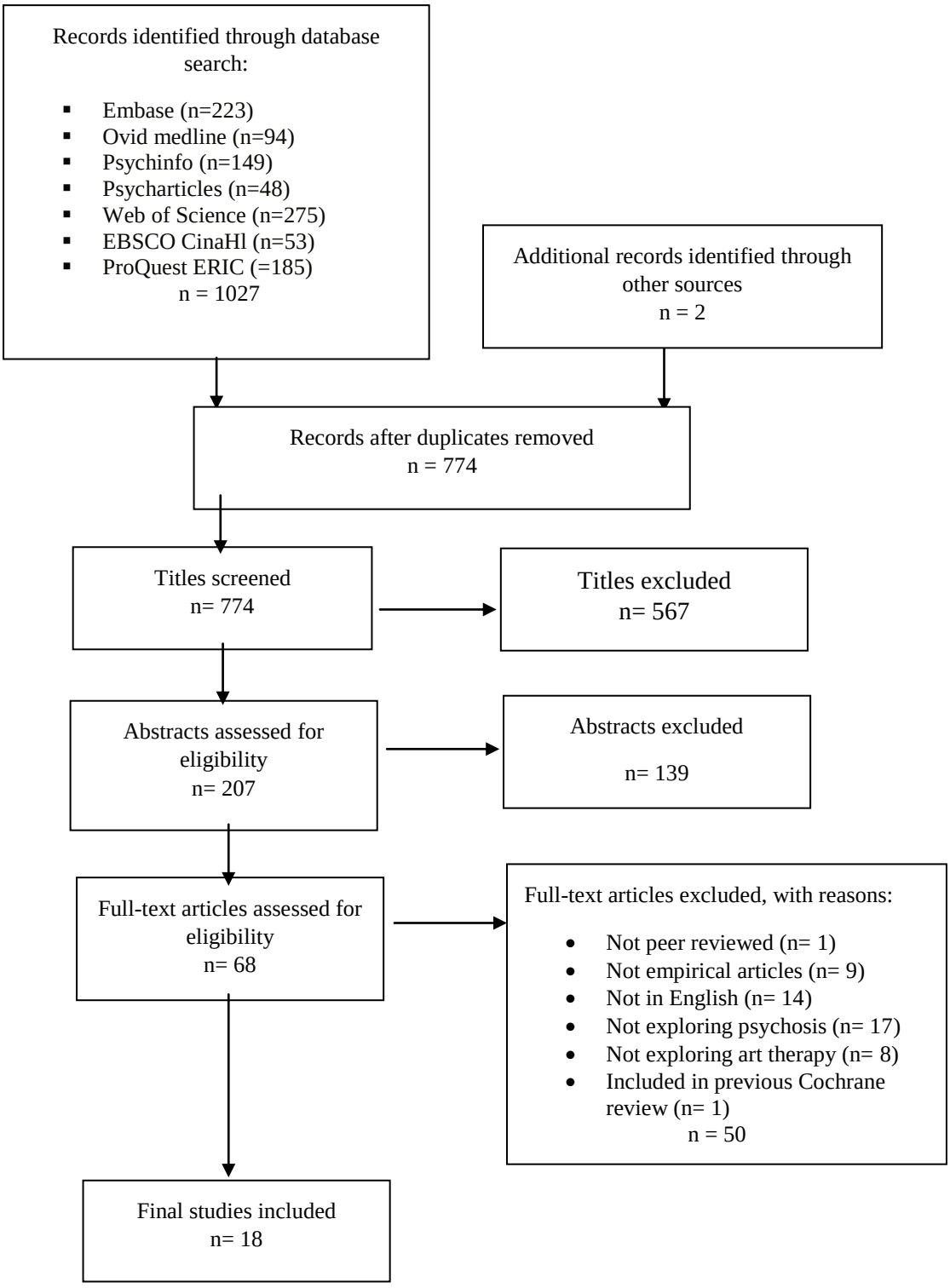

Figure 1. Flow diagram for included and excluded articles

Table 1. Data Extraction of Final Studies

Authors, Year, Country	**Type of Study**	**Study Aims**	**Participants**	**Methodology**	**Analysis**	**Results: The acceptability and meaning of** art therapy	**Results: The effectiveness of** art therapy
Crawford, Killaspy, Kalaitzaki, Barrett, Byford, Patterson et al. (2010) Crawford, Killaspy, Barnes, Barrett, Byford, Clayton, et al. (2012) United Kingdom	3-arm Randomised Control Trial	To investigate how health and social functioning of people with schizophrenia is impacted through art therapy, compared with an activity group and standard care alone. To examine differences in engagement and benefits between groups and cost effectiveness of art therapy.	417 participants with schizophrenia. 140 people were randomly allocated to the art therapy group with standard care, 140 people to the activity with standard care group and 137 people to the standard care alone group.	Weekly art therapy, activity or standard care alone groups took place for one year. Primary outcomes were functioning (Global Assessment of Functioning scale), and psychotic symptoms (Positive and Negative syndrome scale) at two years. Secondary outcomes were functioning and symptoms at one year, and attendance, functioning, medication adherence, satisfaction, well-being and quality of life at one and two years.	An intention-to-treat (ITT) analysis took place. An ANCOVA examined group differences, and controlled for outcome, site, sex and age. The same was done for secondary outcomes. A secondary analysis, a two and three level heteroscedastic model, and a two stage least squares estimate were carried out.	Nearly 40% of the art therapy group did not attend. A few attended regularly though this did not influence outcomes. Art therapy attendance was better than activity group attendance. For both groups, the main dropout reasons were death, withdrawal and getting lost to follow-up. Withdrawal occurred because participants were not interested in attending or found it difficult to attend.	At two years follow-up there was no significant difference between groups for primary outcomes, though those in the activity group had less positive symptoms that those in art therapy. At one and two years, there were no significant differences in secondary outcomes. Art therapy had no clinical advantage and was not more cost-effective.
Leurent, Killaspy, Osborn, Crawford, Hoadley, Waller, & King (2014) United Kingdom	Secondary analysis of the MATISSE RCT	To re-analyse the MATISSE results and examine differences in the effectiveness of subgroups in art therapy and standard care. The characteristics explored were gender, treatment compliance, interest in art, comfort with emotional expression and time since referral.	MATISSE included participants in standard care (n= 137), art therapy and standard care (n= 140) and activity group and standard care (n= 140). This study considered the art therapy and standard care group.	MATISSE involved weekly groups over 12 months. Primary outcomes were functioning and mental health symptoms. Secondary outcomes were: functioning and symptoms measured at 12 months, and attendance, social functioning, medication adherence, care satisfaction, well-being and quality of life measured at 12 and 24 months.	Through an ITT analysis, groups were compared on interest in art therapy and symptoms at 12 months using a mixed-effect linear model. The intervention effect was investigated by stratifying by subgroup and examining the effect of interaction or continuous variables. Differences in attrition were compared.	There were no significant differences between groups in rates and reasons for attrition. Only site of recruitment was relevant. Art therapy attendance was poor because 39% attended no sessions and in a year, the average attendance was 11 sessions. Although non-significant, a prior interest in art and comfort sharing emotions influenced attendance positively.	There was no significant difference in the effectiveness of art therapy on symptoms of psychosis between subgroups who had more or less negative symptoms of psychosis or interest in art therapy. There were no significant differences in any of the other subgroup analyses.
Montag, Haase, Seidel1, Bayerl1, Gallinat, Herrmann, & Dannecker (2014) Germany	Pilot Randomised Control Trial	To investigate the efficacy of psychodynamic Art therapy for people in acute psychosis, on symptoms, functioning, mentalising abilities, self-efficacy, care satisfaction and quality of life.	There were 58 inpatients with schizophrenia. Following randomisation, 29 received art therapy with treatment as usual and 29 received treatment as usual, which excluded art activities.	Twice weekly groups for six weeks occurred. Primary outcomes were symptoms (Scale for the assessment of negative/positive symptoms), depression (Calgary depression scale for schizophrenia), and functioning (Global assessment of functioning scale). Secondary outcomes were mentalisation, self-efficacy, locus of control, quality of life, and care satisfaction.	The analysis was based on the per-protocol sample. Differences between group demographics and illness was investigated through T- and Chi2-tests. ANCOVA compared primary outcomes at post-treatment and follow-up, whilst controlling for baseline ratings, verbal IQ and gender. An ITT analysis of primary outcomes was also carried out.	The data at six weeks were based on 59% of participants from art therapy and 69% from treatment as usual. At 12 weeks follow-up, the data were based on 55% of participants in art therapy and 66% in treatment as usual. Reasons for dropout related to unplanned discharge and practical difficulty attending groups. Apart from this, those in art therapy had good attendance.	The per-protocol sample results showed that the art therapy group had a significant decrease in positive symptoms and functioning at post-intervention and follow-up, and in negative symptoms at follow-up. There were no significant changes in depression. In the ITT, art therapy had improved positive symptoms at post-treatment and a lower trend in negative symptoms.

Authors, Year, Country	**Type of Study**	**Study Aims**	**Participants**	**Methodology**	**Analysis**	**Results: The acceptability and meaning of** art therapy	**Results: The effectiveness of** art therapy
Patterson, Debate, Anju, Waller, & Crawford (2011b) United Kingdom	Survey design	To describe the availability, accessibility, structure, delivery and content of art therapy for people with schizophrenia in the NHS. To explore art therapy views of how AT may support people with schizophrenia.	71 art therapists were randomly recruited from 27 NHS Trusts.	A questionnaire was piloted and developed by considering literature, organisational policies and experiences of art therapists. The closed and open questions related to the assessment process, outcome measures and art therapy mechanisms. Therapists rated their level of agreement on statements about the benefits of art therapy using a 5-point Likert scale.	Simple descriptive statistics investigated how many agreed with the questionnaire items. Univariate statistics indicated associations between therapist traits, type of practice and views of working with other professionals. Open-ended questions were analysed through thematic analysis though these results were not reported.	Most therapists used a non-directive approach and believed that art-making and reflection were fundamental parts of art therapy. This enhanced self-understanding, control, expression and conflict resolution. Acquiring new skills was not a key aspect of art therapy. Therapists stated that this population had limited access to art therapy. Less than half thought it was not well integrated with services, albeit valued.	N/A
Caddy, Crawford, & Page (2012) Australia	Non-experimental, non-randomised	To explore changes in mental health across a five year period for inpatients who took part in art and craft creative therapy groups in a private hospital.	Existing de-identified data was used of 403 patients who participated in at least six sessions and attended no other therapy groups. Most had a diagnosis of depression, bipolar or other mood disorders. 14·1% had a diagnosis of schizophrenia.	The creative activity group was attended by 16 patients daily. It involved art, craft and expressive projects which addressed patients' issues. Changes were measured using the Depression and Anxiety Stress Scale (DASS-21), Quality of Life Enjoyment and Satisfaction (Q-LES-Q), Medical Outcomes Short Form (SF-14) questionnaires and Health of the Nation Outcome Scale (HoNOS).	Data were analysed using descriptive and inferential statistics to investigate the correlations between mental health outcomes and participation. Paired t-tests were used to identify whether there were significant changes in measures from admission to discharge.	N/A	Participation positively correlated with better mental health from admission to discharge, with moderate to strong effect sizes. The largest, statistically significant improvement was on the HoNOS. Large effect sizes were observed on the Q-LES-Q and DASS-21 Depression and Anxiety subscales. Moderate effect sizes were observed on the Stress subscale and the SF-14.
De Morais, Dalecio, Vizmann, Bueno, Roecker, Salvagioni, & Eler (2014) Brazil	Mixed Methods design: Non-randomised controlled study and qualitative interviews	To investigate the effect of a clay work group on levels of depression and anxiety amongst inpatients in a day hospital compared with patients who did not receive therapy.	There were 24 participants: 12 in the control group and 12 in the clay work group. They had various diagnosis such as depression, bipolar, anxiety, dementia, schizophrenia and psychotic disorder.	Each group received eight weekly clay therapy sessions. In the clay group participants described their sculptures and feelings. The Beck Depression Inventory and Spielberger State-Trait Anxiety Inventory were completed. Interviews took place to explore how participants felt about their art. It is unclear when the interviews occurred and if everyone was interviewed.	The hospital psychologist who was not involved in the research, administered and interpreted the results of the measures. The Mann–Whitney test was used to compare the scores between the groups. No information was provided about the qualitative analysis.	Interview extracts suggested that some found clay work enjoyable and relaxing and it helped them to reflect. It was unclear whether these quotations appertained to participants who had schizophrenia. Two participants attended half the clay work sessions and were excluded from the analysis. Their dis-engagement was attributed to the clay work being overwhelming.	Therapy using clay improved depression compared to receiving none at all. The clay work group had mild depression on average and the control group had moderate depression. The difference was statistically significant. The clay work group had lower anxiety though this was not statistically significant.

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Teglbjaerg (2011) Denmark	Qualitative study	To understand whether and how art therapy effects the mental health of people with schizophrenia and whether patients with nonpsychotic and psychotic disorders use art therapy differently.	There was one group of five outpatients with schizophrenia and one comparison group of five nonpsychotic patients with depression and/or personality disorders.	Participants attended weekly, formative group art therapy for one year. They were interviewed before, immediately after therapy and at one year follow-up. Interviews concerned experiences of mental illnesses, life, relationships, and art therapy. Data were gathered from logbooks, participants' art and evaluation forms.	Modified grounded theory was carried out. This included four analysis levels: giving a narrative description of therapy, identifying themes, comparing participants' themes to the research questions and evaluating whether they were answered.	Both groups found art therapy helpful, even at follow-up, and all attended. The main benefit was a strengthened sense of self as they expressed themselves, problem solved, socialised, felt confident, felt included, and less paranoid. Those with schizophrenia achieved these benefits by using art to become present, to find meaning, connect with themselves and others and to become creative.	N/A
Patterson, Crawford, Ainsworth & Waller (2011a) United Kingdom	Qualitative study	To understand the process and outcomes of art therapy (i.e. what changes, how it changes and for whom) based on the experience of art therapists, and to improve provision of art therapy.	24 art therapists were recruited. There were three key informants (art therapists from MATISSE); 14 MATISSE art therapists (who delivered or supervised art therapy); and seven non-MATISSE therapists.	Over 20 months, interviews and focus groups took place. Questions addressed the nature, process and outcomes of art therapy, therapists' understanding of schizophrenia and their concerns. 33·3% of the therapists substantiated the interviews with documents (e.g. publications).	Grounded theory was carried out using constant comparative method and 3 levels of coding; Initial coding to identify descriptive codes; Focused coding to group codes into themes; Theoretical coding to identify categories. The documents were analysed primarily through theoretical coding.	Art therapy was considered valuable for this client group. Therapists' role, the therapeutic relationship, art making and group were believed to increase expression, well-being, identity and acceptance. Willingness to engage was beneficial. What made art therapy helpful was unclear but it entailed an interaction between therapists, clients, and art. The art therapy referral criteria were unclear.	N/A
Patterson, Borschmann & Waller (2013) United Kingdom	Qualitative study	To understand the experiences of participants who received AT in MATISSE, to understand who to refer to AT, how to evaluate its effectiveness, and the degree of generalisability of MATISSE results.	There were 19 trial participants diagnosed with schizophrenia and four participants who took part in a separate focus group at 12 months follow-up.	Interviews lasted 20 to 90 minutes and explored their reasons for participating, and response to the allocation and intervention. Key workers or partners were present in some interviews. Trial data, field notes and the experiences of therapists as presented in Patterson, Crawford, Ainsworth and Waller (2011), were considered.	A constructive grounded theory approach was used which involved constant comparison and multi-level coding strategies, in line with the analysis method outlined in Patterson, Crawford, Ainsworth and Waller (2011).	Some participants did not attend MATISSE because they were not interested in art therapy. Those who dropped out were not motivated and disliked group work. The 6 who attended enjoyed the social and therapist contact, and art. They experienced 'no change' or specific change. A few gained confidence, achievements, felt accepted and not judged.	N/A

Authors, Year, Country	**Type of Study**	**Study Aims**	**Participants**	**Methodology**	**Analysis**	**Results: The acceptability and meaning of** art therapy	**Results: The effectiveness of** art therapy
Colbert, Cooke, Camic & Springham (2013) United Kingdom	Qualitative study	To explore whether reflection through paintings in an art-gallery with staff improves clients' personal narratives of psychosis, well-being, and social inclusion and creates new community narratives about psychosis.	Five men and two women were clients with a diagnosis of psychosis. There were two female gallery-staff, one female art therapist and two NHS staff (one male and one female)	Two groups took place for four weeks each. The first part was spent in the art gallery where paintings and their meaning were discussed and participants could sketch. They then moved to the art studio and created and reflected on more art that they produced. Interviews after four weeks explored participants' experience of the group and their well-being.	A literary context narrative analysis was used to understand the thoughts, aims, language and themes in the narratives. A social context narrative analysis explored dominant, personal stories of psychosis and whether community narratives developed.	Some participants changed their dominant personal narrative of psychosis. A new community narrative was developed. This identified the staff-client relationship as validating, amicable and honest. The group improved recovery, social inclusion, and well-being. Five clients attended all or most sessions and were accompanied by the staff.	N/A
De Morais, Roecker, Jodas, Denise, & Eler (2014)	Qualitative study	To understand the significance of clay art therapy for psychiatric patients who attend a day hospital.	Seven out of 16 participants had a diagnosis of schizophrenia or schizo-affective disorder.	Two open groups took place. Participants attended at least seven clay therapy sessions. Semi-structured interviews were used to ask open questions about participants' experience before, during, and after the clay therapy sessions.	The data were analysed using content analysis. This included the ordering and classification of data into final themes. No further information about this was provided.	Clay therapy increased participants' creativity and self-awareness and reduced their emotional distress. Some remembered their past and could explore difficult feelings more easily. For others it triggered difficult memories, feelings, and symptoms. Yet, it was mostly considered helpful in improving their relationship with themselves and others.	N/A
Drapeau & Kronish (2007) Canada	Case Report	To investigate the benefits and clinical effectiveness of a creative art therapy group program for outpatients with psychiatric disorders by exploring vignettes of sessions.	There were 26 psychiatric outpatients with various diagnoses such as depression, schizophrenia, schizoaffective, dissociative, borderline, and bipolar disorders.	Psychodynamic art therapy groups were provided for just over one year. Each group met for 12 weeks. The sessions were bilingual, in English and French. No data collection method was specified.	No analysis method was specified. Changes in participants' psychological well-being were discussed and a comparison was made of the meaning of the drawings they created in earlier and later sessions.	Drawings enabled clients to express and explore their issues. Sharing drawings with others increased their self-acceptance and understanding. Drawings helped clients to connect with reality, trust others, deal with loss and socialise. It improved their self-esteem, quality of life, and humour. No information about attendance was provided.	N/A

Authors, Year, Country	**Type of Study**	**Study Aims**	**Participants**	**Methodology**	**Analysis**	**Results: The acceptability and meaning of** art therapy	**Results: The effectiveness of** art therapy
Banks (2012) United Kingdom	Case Study	To explore the progress, development and role of art therapy in a male low secure ward, to explore how art can build safety and security and how violence can be understood through the meaning of the images.	One man with a diagnosis of paranoid schizophrenia, which was triggered by drug misuse.	He attended individual and group art therapy (which also included music therapy) and a recovery group (which included art making) for 12 months. He co-created an audio image recording, and took part in an end of therapy interview where he reflected on art making using two images.	The author chose 11 key images and audio image recordings which were thought to enhance the client's reflection and understanding of his violence. These were used to describe the model of art therapy provided and the client's experience. No analysis method was described.	The participant found that art improved his emotional expression, hopes, and alleviated his worries. It provided containment and security. The non-judgemental atmosphere strengthened the therapeutic relationship. Through the meaning of his art, his sense of self strengthened as he linked his inner and outer experiences and made sense of his anger and life.	N/A
Michaelides (2012) United Kingdom	Case Report	To explore how art therapy groups help a client with schizophrenia who has a poor reflective functioning ability and whether it is a safe way of exploring mental states and improving reflective functioning.	A case study of one male participant diagnosed with schizophrenia who was functioning at a negative reflective functioning level.	An open art therapy group ran for 14 months. Clients with different diagnoses attended. Following art creation, the group discussed their drawings. Observations took place of the case study's level of engagement, involvement in the group discussions and the nature of drawings produced.	No analysis method was described. Changes in the participant's presentation were discussed as well as changes in the imagery produced, with emphasis on the 2nd, 4th and 32nd sessions.	Art therapy was acceptable for the client with negative symptoms. He moved to stages of 'identification' and 'familiarisation' and possibly also 'acknowledgement' as his reflective functioning improved. He became interested in the group and his art was a means of expression. The group's reflection gave him a voice and allowed him to connect with himself.	N/A
Gajic (2013) Serbia	Case Report	To present the clinical observations of two clients with schizophrenia who attended an AT group in a day hospital and to investigate their health and functioning at admission and discharge.	One female with paranoid schizophrenia and one male with schizophrenia.	Weekly art therapy sessions occurred over two months. Participants created drawings and reflected on them. At admission and discharge the Clinical Global Impression Severity (CGIS) and Global Assessment of Functioning (GAF) scales were completed and the Clinical Global Improvement (CGI-I) Scale was completed at discharge.	The researcher together with the group therapists conducted a qualitative analysis of the drawings' form and content and the group therapy protocols. Details about this analysis were not provided.	The participants were regular attenders. Art therapy was considered useful for schizophrenia. It enhanced creativity, self-esteem and self-confidence. The group provided validation, support, security, acceptance, social connection and expression. The participants appeared less preoccupied by psychosis following their engagement in art therapy.	For both participants, minimal improvement was shown on the CGIS and GAF from admission to discharge, and on the CGI-I. These minimal improvement in functioning and health were attributed to participants having severe psychosis and therefore requiring a longer intervention.

Authors, Year, Country	**Type of Study**	**Study Aims**	**Participants**	**Methodology**	**Analysis**	**Results: The acceptability and meaning of** art therapy	**Results: The effectiveness of** art therapy
Havenik Hestad, Lien, Teglbjaerg, & Danbolt (2013) Norway	Multiple Case Study	To describe the course and usefulness of an expressive art therapy group for women with psychotic diagnoses. To understand how and why art therapy aids in exploring psychotic experience and improving coping.	There were five female participants with various psychotic diagnoses which were bipolar disorder, schizoaffective disorder, schizophrenia and paranoid psychosis.	The group met weekly for nine months in the psychiatric hospital. The start of the group included music, poetry and movement therapy, after which three art modalities were used to explore psychosis and its meaning. Observations of the therapeutic process were made and interviews were carried out at eight months follow-up.	Participants' situation before and after art therapy was analysed through group notes and interviews using a modified 7-step method for case studies. This included: literature searching, analysing the different information sources, time-series analysis, pattern matching, and member checking.	All the participants felt able to explore psychosis, express themselves, gain awareness and feel alive. Two gained control as they cognitively reinterpreted psychosis. All learnt how to cope and felt valued though how this occurred was unclear. Spiritual and existential themes were common. Participants felt able to interact with and support each other safely.	. N/A
Hung & Ku (2015) Taiwan	Case Report	To present the cases of two patients with schizophrenia who received semi-structured art therapy.	Patient A: a 19 year old, female diagnosed with schizophrenia 4 years ago. Patient B: a 37 year old patient diagnosed with schizophrenia 10 years ago.	Semi-structured art therapy was provided four times a month. A photo card collection was used to guide what images the patients could draw, after which they reflected on their images. The Positive and Negative Syndrome Scale (PANSS) and Assessment of Negative Symptoms (SANS) were completed at two times points.	Analysis was carried out of the patients' clinical symptoms, psychosocial issues, and the images they produced. No additional detail about the analysis was provided.	Improvements in PANSS and SANS scores were attributed to a motivation to attend art therapy. Authors concluded that the younger patient was more likely to share stories of her images, compared to the older patient.	After a month, Patient A showed an improved PANSS score from 90 to 65 and SANS score from 69 to 45. Patient B showed an improved PANSS score from 114 to 92 and SANS score from 94 to 69.

Table 2 Summary of Quality

Table 2. Summary of Quality of the Studies

Authors	Truth Value	Applicability	Consistency	Neutrality	Overall Quality Rating (Average score)
Quantitative Studies					
Crawford, et al. (2010) Crawford, et al. (2012)	5	5	5	5	Good (5)
Montag, et al. (2014)	4	4	6	5	Good (5)
Leurent, et al. (2014)	5	5	5	5	Good (5)
Non-Experimental Study					
Patterson, et al. (2011b)	3	4	5	4	Moderate (4)
Caddy, et al. (2012)	4	3	5	4	Moderate (4)
Mixed Methods Study					
De Morais, et al (2014)	1	2	2	1	Poor (2)
Qualitative Studies					
Teglbjaerg (2011)	2	3	3	1	Poor (2)
Patterson, et al. (2011a)-	6	6	5	4	Good (5)
Patterson, et al. (2013)	6	5	4	2	Good (4)
Colbert, et al. (2013)	5	4	6	3	Good (5)
De Morais, et al (2014b)	3	3	3	1	Moderate (3)
Case Studies					
Drapeau & Kronish (2007)	1	2	1	1	Poor (1)
Banks (2012)	3	3	2	1	Poor (2)
Michaelides (2012)	3	3	3	1	Moderate (3)
Havenik, et al. (2013)	5	4	4	5	Good (5)
Gajic (2013)	3	2	2	1	Poor (2)
Hung & Ku (2015)	1	1	1	0	Poor (1)

Appendix

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Signed cover letter

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