TECHNICAL COMMENTARY

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Art and drama therapies

Introduction

Art and drama therapies are creative therapies generally used as adjuncts to standard care, which encourage the patient to explore alternative methods of communication with a qualified therapist.

Art therapy is defined by the British Association of Art Therapists as "the use of art materials for self-expression and reflection in the presence of a trained art therapist. Clients who are referred to art therapy need not have previous experience or skill in art, the art therapist is not primarily concerned with making an aesthetic or diagnostic assessment of the client's image. The overall aim of its practitioners is to enable a client to effect change and growth on a personal level through the use of art materials in a safe and facilitating environment".

Any benefit of art therapy is likely to come from an interaction of the actual production of artworks and the ensuing relationship that develops with the therapist. It has been suggested that the artwork acts as a buffer which reduces the intensity of the relationship between patient and therapist, which may be more productive for schizophrenia patients[1].

Drama therapy is defined by the British Association of Drama Therapists as "the use of drama and theatre as a therapeutic process. It is a method of working and playing that uses action methods to facilitate creativity, imagination, learning, insight and growth."

Any benefit of drama therapy may come from the fundamental 'make-believe' aspect, which distances participants from the subject matter, allowing them to work with material that may be sensitive to them[2]. Drama therapy may simply involve expressive games and improvisational activities, which are left un-interpreted, while more intense forms of therapy may involve exploration into the content being expressed.

Method

We have included only systematic reviews (systematic literature search, detailed methodology with inclusion/exclusion criteria) published in full text, in English, from the year 2000 that report results separately for people with a diagnosis of schizophrenia, schizoaffective disorder, schizophreniform disorder or first episode schizophrenia. Reviews were identified by searching the databases MEDLINE, EMBASE, CINAHL, Current Contents, PsycINFO and the Cochrane library. Hand searching reference lists of identified reviews was also conducted. When multiple copies of reviews were found, only the most recent version was included. Reviews with pooled data are prioritised for inclusion.

Review reporting assessment was guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist that describes a preferred way to present a meta-analysis[3]. Reviews rated as having less than 50% of items checked have been excluded from the library. The PRISMA flow diagram is a suggested way of providing information about studies included and excluded with reasons for exclusion. Where no flow diagram has been presented by individual reviews, but identified studies have been described in the text, reviews have been checked for this item. Note that early reviews may have been guided by less stringent reporting checklists than the PRISMA, and that some reviews may have been limited by journal guidelines.

Evidence was graded using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group approach where high quality evidence such as that gained from randomised controlled trials (RCTs) may be downgraded to moderate or low if review and study quality is limited, if there is inconsistency in results, indirect comparisons,

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imprecise or sparse data and high probability of reporting bias. It may also be downgraded if risks associated with the intervention or other matter under review are high. Conversely, low quality evidence such as that gained from observational studies may be upgraded if effect sizes are large, there is a dose dependent response or if results are reasonably consistent, precise and direct with low associated risks (see end of table for an explanation of these terms)[4]. The resulting table represents an objective summary of the available evidence, although the conclusions are solely the opinion of staff of NeuRA (Neuroscience Research Australia).

Results

We found two systematic reviews that met our inclusion criteria[1, 2].

- Low quality evidence is unable to determine the benefits of art or drama therapy.

Ruddy R, Milnes D

Art therapy for schizophrenia or schizophrenia-like illnesses

Cochrane Database of Systematic Reviews 2005; (4):CD003728

View review abstract online

Comparison	**Art therapy (as defined by the British Association of Art Therapists) administered for 12-20 weeks, with follow up between 6-9 months as an adjunct to standard care vs. standard care.**
Summary of evidence	**Low quality evidence (small samples, imprecise, some inconsistency, direct) is unable to determine the effects of art therapy.**

Mental State

A significant, medium-sized effect favouring art therapy for reducing symptom severity, as measured by Scale for the Assessment of Negative Symptoms (SANS);

1 RCT, N = 73, SMD = -0.58, 95%CI -1.04 to -0.11, *p* = 0.02

Social functioning

No significant effect as measured by the Social Functioning Scale (SFS);

1 RCT, N = 70, SMD = 0.34, 95%CI -0.13 to 0.82, *p* = 0.15

Quality of life

No significant effect as measured by the Lancashire Quality of Life Profile (PercQoL);

1 RCT, N = 74, SMD = 0.12, 95%CI -0.33 to 0.58, *p* = 0.60)

Leaving the study early

A significant, medium-sized effect favouring art therapy for reducing attrition in the medium term;

13-26 weeks: 1 study, N = 47, RR = 0.34, 95%CI 0.15 to 0.80, *p* = 0.95

No significant effect in the short or longer term;

Up to 12 weeks: 1 study, N = 90, RR = 0.97, 95%CI 0.41 to 2.29, *p* = 0.95

Greater than 26 weeks: 1 study, N = 47, RR = 0.96, 95%CI 0.50 to 1.60, *p* = 0.87

Consistency in results‡	Inconsistent for leaving the study early, medium term. Not applicable for all other outcomes – one RCT only.
Precision in results§	Imprecise for all outcomes.
Directness of results‖	Direct

Ruddy RA, Dent-Brown K

Drama therapy for schizophrenia or schizophrenia-like illnesses

Cochrane Database of Systematic Reviews 2007; (1): CD005378

View review abstract online

Comparison	**Drama therapy (as defined by the British Association of Drama Therapists) administered for 4-22 weeks as an adjunct to medication and inpatient care vs. medication and inpatient care.**
Summary of evidence	**Low quality evidence (1 RCT with small samples, imprecise, direct) is unable to determine the benefits of drama therapy.**
Self-esteem	
A significant, large effect favouring drama therapy for improved self-esteem as measured by the Self-esteem Scale (SES); 1 RCT, N = 24, SMD = 0.97, 95%CI 0.11 to 1.82, *p* = 0.03 *A significant, large effect favouring drama therapy for inferiority as measured by the Feelings of Inferiority Scale (FIS);* 1 RCT, N = 24, SMD = -1.03, 95%CI -1.89 to -0.17, *p* = 0.02)	
Consistency in results	Not applicable, data reported for 1 RCT only.
Precision in results	Imprecise
Directness of results	Direct

Explanation of acronyms

CI = Confidence Interval, FIS = Feelings of Inferiority Scale, I^2 = the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance), N = number of participants, *p* = statistical probability of obtaining that result ($p < 0.05$ generally regarded as significant), PercQoL = Lancashire Quality of Life Profile, Q = Q statistic (chi-square) for the test of heterogeneity, RCT = randomized controlled trial, RR = risk ratio, SANS = Scale for the Assessment of Negative Symptoms, SAPS = Scale for the Assessment of Positive Symptoms, SES = Self-esteem Scale, SFS = Social Functioning Scale, SMD = standardized mean difference, vs. = versus

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Explanation of technical terms

* Bias has the potential to affect reviews of both RCT and observational studies. Forms of bias include; publication bias - trials that are not formally published tend to show less effect than published trials, further if there are statistically significant differences between groups in a trial, these trial results tend to get published before those of trials without significant differences; language bias – only including English language reports; funding bias - source of funding for the primary research with selective reporting of results within primary studies; outcome variable selection bias; database bias - including reports from some databases and not others; citation bias - preferential citation of authors. Trials can also be subject to bias when evaluators are not blind to treatment condition and selection bias of participants if trial samples are small[5].

† Different effect measures are reported by different reviews.

Prevalence refers to how many existing cases there are at a particular point in time. Incidence refers to how many new cases there are per population in a specified time period. Incidence is usually reported as the number of new cases per 100,000 people per year. Alternatively some studies present the number of new cases that have accumulated over several years against a person-years denominator. This denominator is the sum of individual units of time that the persons in the population are at risk of becoming a case. It takes into account the size of the underlying population sample and its age structure over the duration of observation.

Reliability and validity refers to how accurate the instrument is. Sensitivity is the proportion of actual positives that are correctly identified (100% sensitivity = correct identification of all actual positives) and specificity is the proportion of negatives that are correctly identified (100% specificity = not identifying anyone as positive if they are truly not).

Weighted mean difference scores refer to mean differences between treatment and comparison groups after treatment (or occasionally pre to post treatment) and in a randomised trial there is an assumption that both groups are comparable on this measure prior to treatment. Standardised mean differences are divided by the pooled standard deviation (or the standard deviation of one group when groups are homogenous) that allows results from different scales to be combined and compared. Each study's mean difference is then given a weighting depending on the size of the sample and the variability in the data. 0.2 represents a small effect, 0.5 a medium effect, and 0.8 and over represents a large treatment effect[5].

Odds ratio (OR) or relative risk (RR) refers to the probability of a reduction (< 1) or an increase (> 1) in a particular outcome in a treatment group, or a group exposed to a risk factor, relative to the comparison group. For example, a RR of 0.75 translates to a reduction in risk of an outcome of 25% relative to those not receiving the treatment or not exposed to the risk factor. Conversely, an RR of 1.25 translates to an increased risk of 25% relative to those not receiving treatment or not having been exposed to a risk factor. An RR or OR of 1.00 means there is no difference between groups. A medium effect is considered if RR > 2 or < 0.5 and a large effect if RR > 5 or < 0.2[6]. lnOR stands for logarithmic OR where a lnOR of 0 shows no difference between groups. Hazard ratios

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measure the effect of an explanatory variable on the hazard or risk of an event.

Correlation coefficients (eg, r) indicate the strength of association or relationship between variables. They are an indication of prediction, but do not confirm causality due to possible and often unforseen confounding variables. An r of 0.10 represents a weak association, 0.25 a medium association and 0.40 and over represents a strong association. Unstandardised (*b*) regression coefficients indicate the average change in the dependent variable associated with a 1 unit change in the dependent variable, statistically controlling for the other independent variables. Standardised regression coefficients represent the change being in units of standard deviations to allow comparison across different scales.

‡ Inconsistency refers to differing estimates of treatment effect across studies (i.e. heterogeneity or variability in results) that is not explained by subgroup analyses and therefore reduces confidence in the effect estimate. I^2 is the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance) - 0% to 40%: heterogeneity might not be important, 30% to 60%: may represent moderate heterogeneity, 50% to 90%: may represent substantial heterogeneity and 75% to 100%: considerable heterogeneity. I^2 can be calculated from Q (chi-square) for the test of heterogeneity with the following formula[5];

$$I^2 = \left(\frac{Q - df}{Q}\right) \times 100\%$$

§ Imprecision refers to wide confidence intervals indicating a lack of confidence in the effect estimate. Based on GRADE recommendations, a result for continuous data (standardised mean differences, not weighted mean differences) is considered imprecise if the upper or lower confidence limit crosses an effect size of 0.5 in either direction, and for binary and correlation data, an effect size of 0.25. GRADE also recommends downgrading the evidence when sample size is smaller than 300 (for binary data) and 400 (for continuous data), although for some topics, this criteria should be relaxed[7].

‖ Indirectness of comparison occurs when a comparison of intervention A versus B is not available but A was compared with C and B was compared with C that allows indirect comparisons of the magnitude of effect of A versus B. Indirectness of population, comparator and or outcome can also occur when the available evidence regarding a particular population, intervention, comparator, or outcome is not available so is inferred from available evidence. These inferred treatment effect sized are of lower quality than those gained from head-to-head comparisons of A and B.

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